ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 468 and 471

[OW-FRL-2854-9]

Nonferrous Metals Forming and Metal Powders Point Source Category; Copper Forming Point Source Category; Effluent Limitations Guidelines; Pretreatment Standards, and New Source Performance Standards

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final regulation.

SUMMARY: This regulation establishes effluent limitations guidelines and standards under the Clean Water Act to limit the discharge of pollutants into navigable waters of the United States and into publicly owned treatment works (POTW) by existing and new sources that conduct nonferrous metals forming and metal powders ("nonferrous metals forming") operations. The Clean Water Act and a consent decree require EPA to issue this regulation. This regulation establishes effluent limitations guidelines based on "best practicable technology" (BPT) and "best available technology" (BAT), new source performance standards (NSPS) based on "best demonstrated technology," and pretreatment standards for existing and new indirect dischargers (PSES and PSNS, respectively). This rulemaking also makes a minor adjustment to the applicability of the limitations and standards for the copper forming point source category, 40 CFR Part 468.

DATES: In accordance with 40 CFR Part 23 (50 FR 7268, February 21, 1985), this regulation shall be considered issued for the purposes of judicial review at 1:00 p.m. Eastern time on September 6, 1985. This regulation shall become effective October 7, 1985.

The compliance date for pretreatment standards for existing sources (PSES) is August 23, 1988. The compliance date for new source performance standards (NSPS) and pretreatment standards for new sources (PSNS) is the date the new source begins operations.

Under Section 509(b)(1) of the Clean Water Act, judicial review of this regulation can be obtained only by filing a petition for review in the United States Court of Appeals within 90 days after the regulation is considered issued for purposes of judicial review. Under Section 509(b)(2) of the Clean Water Act, the requirements in this regulation may not be challenged later in civil or criminal proceedings brought by EPA to enforce these requirements.

The record for the final rule will be available for public review not later than October 28, 1985.

ADDRESSES: Address questions on the final rule to Ms. Janet K. Goodwin, Industrial Technology Division (WH-552), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460; Attention: Nonferrous Metals Forming Rules (WH-552). The basis for this regulation is detailed in four major documents. See Supplementary Information (under "XIV. Availability of Technical Information") for a description of each document. Copies of technical and economic documents may be obtained from the National Technical Information Service, Springfield, Virginia 22161 (703-487-4600).

Technical information may be obtained by writing Ms. Janet K. Goodwin at the above address or by calling (202) 382-7126. Copies of the economic impact report and additional economic information may be obtained by writing Mr. Joseph Yance, Economic Analysis Staff (WH-586), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460 or by calling (202) 382-5379.

The record for the final rule will be available for public review not later than October 28, 1985 in EPA's Public Information Reference Unit, Room 2904 (Rear) (EPA Library), 401 M Street, SW., Washington, D.C. The EPA public information regulation (40 CFR Part 2) provides that a reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: Mr. Ernst P. Hall, Chief, Metals Industries Branch, (202) 382-7126.

SUPPLEMENTARY INFORMATION:

Organization of This Notice

I. Legal Authority

EPA is promulgating this regulation under the authority of Sections 301, 304, 306, 307, 308, and 501 of the Clean Water Act (the Federal Pollution Control Act Amendments of 1972, 33 USC 1251 *et seq.*, as amended by the Clean Water Act of 1977, Pub. L. 95-217) ("the Act"). This regulation is also issued pursuant to the Court Order in *Natural Resources Defense Council, Inc.* v. *Train,* 8 ERC 2120 (D.D.C. 1976), *modified,* 12 ERC 1833 (D.D.C. 1979), *modified* by orders of October 26, 1982, August 2, 1983, January 6, 1984, July 5, 1984, and January 7, 1985.

II. Scope of This Rulemaking

This regulation, which was proposed on March 5, 1984 (49 FR 8112), establishes effluent limitations guidelines and standards for existing and new nonferrous metals forming facilities. Because of the diversity of the nonferrous metals industry, EPA has divided it into different segments for regulation. This regulation only covers nonferrous metals forming operations; nonferrous metals manufacturing operations are covered under separate regulations at 40 CFR Part 421 (nonferrous metals manufacturing phase I, promulgated at 49 FR 8742 on March 8, 1984 and nonferrous metals manufacturing phase II, proposed at 49 FR 26352 on June 27, 1984).

The nonferrous metals forming category is generally included within SIC 3356, 3357, 3463, and 3497 of the Standard Industrial Classification

Manual, prepared in 1972 and supplemented in 1977 by the Office of Management and Budget, Executive Office of the President. The category includes establishments engaged in the forming of 30 nonferrous metals and their alloys. As explained below, the nonferrous metals forming category employs an estimated 40,000 people with a total production estimated at 430,000 kkg (470,000 tons) per year. The Agency did not identify any other nonferrous metals (except for beryllium, aluminum, and copper, the latter two of which are already covered by other regulations, see 40 CFR Parts 467 and 468) that are subjected to forming operations.

Alloys are considered as only one metal type: the metal type of any particular alloy is defined to be the metal that is the major constituent by weight, except in the case of beryllium and precious metal alloys, as explained below. Some beryllium alloys (as well as pure beryllium) were included in the proposed regulation for nonferrous metals forming. However, EPA has decided to regulate pure beryllium and these alloys at a later date with beryllium copper alloys which were originally covered by the copper forming regulation, 40 CFR Part 468 (48 FR 36942, August 15, 1983)). In this way, forming of pure beryllium and all beryllium alloys (defined as any nonferrous metal alloy in which beryllium is present at 0.1 or greater percent by weight) will be regulated in the same category.

Forming of copper alloys is already covered by the copper forming regulation, cited above. A copper alloy is any alloy which contains copper as the major constituent by weight, except when alloyed with precious metals, where the precious metal is present at 30 or greater percent by weight. These alloys are considered precious metal alloys. This rulemaking amends the copper forming regulation to reflect this change. Likewise, the nonferrous metals forming regulation states that any alloy of a precious metal, and any other nonferrous metal, where the precious metal is present at 30 or greater percent by weight, is covered by the precious metals subcategory of this regulation. These changes were made in response to comments on the proposed nonferrous metals forming regulation indicating that plants perform similar forming operations on various copper-precious metals alloys which range up to 70 percent by weight copper in composition.

An aluminum alloy is any alloy which contains aluminum as the major constituent by weight. Forming of aluminum alloys is covered by the aluminum forming regulation, 40 CFR Part 467 (48 FR 49126, October 24, 1983). An iron and steel alloy is any alloy which contains iron as the major constituent by weight. Forming of iron and steel is covered by the iron and steel regulation, 40 CFR Part 420.

EPA studied 334 nonferrous metals forming plants distributed throughout the United States, with the majority located east of the Mississippi River. Of these plants, 158 discharge process wastewater, 37 directly to surface water (direct dischargers), and 121 to Publicly Owned Treatment Works (POTWs) (indirect dischargers). The remaining 176 plants do not discharge process wastewater. As a result of the study of nonferrous metals forming plants, EPA excluded nine of the 30 metal types in the category from national regulation under Paragraph 8 of the Settlement Agreement in *NRDC* v. *Ruckelshaus, supra.* EPA is excluding these metal types from national regulation because the forming operations performed on these metals do not use process water and therefore, do not discharge process wastewater. In addition to the pure metals, alloys of these nine metals are also excluded from regulation, when one of these metals is the largest constituent by weight.

Forming is the deformation of a metal or metal alloy into specific shapes by hot or cold working. Forming operations include rolling (both hot and cold), extruding, forging, drawing, cladding, and tube reducing. Ancillary operations performed as an integral part of the forming process are also included in the nonferrous metals forming category. These operations are casting for subsequent forming, heat treatment, surface treatment, alkaline cleaning, solvent degreasing, sawing, grinding, tumbling, burnishing, product testing, and surface coating. Wastewater streams associated with air pollution controls on nonferrous metals forming and related operations are also included in this point source category.

The nonferrous metals forming category also includes metal powder production operations which generate metal powder through mechanical means, such as milling, abrading, and atomizing; and associated ancillary operations listed above. This category includes the production of metal powders of iron, copper, and aluminum and other metals, the forming of which is covered by this regulation. This category does not include the production of metal powders by chemical means such as precipitation. The production of metal powder as the final step in refining metal is regulated under the nonferrous metals manufacturing regulation, 40 CFR Part 421.

Casting of a nonferrous metal is regulated in this category when performed as an integral part of a nonferrous metals forming process and located at the same plant site at which that metal is formed. Such casting will not be regulated under the provisions of the metal molding and casting regulation, 40 CFR Part 464.

Surface treatment of nonferrous metals is any chemical or electrochemical treatment applied to the surface of a nonferrous metal. For the purposes of this regulation, surface treatment of nonferrous metal is considered to be an integral part of nonferrous metal forming whenever it is performed at the same plant site at which nonferrous metal is formed. Surface treatment operations are not subject to regulation under the provisions of the electroplating regulation, 40 CFR Part 413, or the metal finishing regulation, 40 CFR Part 433.

III. Summary of Legal Background

The Federal Water Pollution Control Act Amendments of 1972 established a comprehensive program to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters," Section 101(a). To implement the Act, EPA was to issue effluent limitations guidelines, pretreatment standards, and new source performance standards for industrial dischargers.

The Act included a timetable for issuing these standards. However, EPA was unable to meet many of the deadlines and, as a result, in 1976, it was sued by several environmental groups. In settling this lawsuit, EPA and the plaintiffs executed a "Settlement Agreement" which was approved by the court. This Agreement required EPA to develop a program and adhere to a schedule in promulgating effluent limitations guidelines, new source performance standards, and pretreatment standards for 65 "priority" pollutants and classes of pollutants for 21 major industries. See *Natural Resources Defense Council, Inc.* v. *Train*, 8 ERC 2120 (D.D.C. 1976), *modified*, 12 ERC 1833 (D.D.C. 1979), modified by Orders dated October 26, 1982, August 2, 1983, January 6, 1984, July 5, 1984, and January 7, 1985.

Many of the basic elements of the Settlement Agreement were incorporated into the Clean Water Act of 1977. Like the Agreement, the Act stressed control of toxic pollutants, including the 65 "priority" pollutants and classes of pollutants. In addition, to strengthen the toxic control program,

Section 304(e) of the Act authorizes the Administrator to prescribe "best management practices" (BMPs) to prevent the release of toxic and hazardous pollutants in plant site runoff, spillage or leaks, sludge or waste disposal, and drainage from raw material storage associated with, or ancillary to, the manufacturing or treatment process.

Under the Act, EPA is to set a number of different kinds of effluent limitations. These are discussed in detail in the preamble to the proposed regulation and in the Development Document. They are summarized briefly below:

1. Best Practicable Control Technology (BPT)

BPT limitations are generally based on the average of the best existing performance by plants of various sizes, ages, and unit processes within the category or subcategory.

In establishing BPT limitations, EPA considers the total cost in relation to the age of equipment and facilities involved, the processes employed, process changes required, engineering aspects of the control technologies, and nonwater, quality enviromental impacts (including energy requirements). We balance the total cost of applying the technology against the effluent reduction.

2. Best Available Technology (BAT)

BAT limitations, in general, represent the best existing performance in the industrial subcategory or category. The Act establishes BAT as the principal national means of controlling the direct discharge of toxic and nonconventional pollutants to navigable waters.

In arriving at BAT, the Agency considers the age of the equipment and facilities involved, the process employed, the engineering aspects of the control technologies, process changes, the cost of achieving such effluent reduction, and nonwater quality environmental impacts. The Agency retains considerable discretion in assigning the weight to be accorded these factors.

3. Best Conventional Pollutant Control Technology (BCT)

The 1977 Amendments to the Clean Water Act added Section 301(b)(2)(E), establishing "best conventional pollutant control technology" (BCT) for discharge of conventional pollutants from existing industrial point sources. Section 304(a)(4) designated the following as conventional pollutants: biochemical oxygen demand (BOD), total suspended solids (TSS), fecal coliform, pH, and any additional pollutants defined by the Administrator as conventional. The Administrator designated oil and grease "conventional" on July 30, 1979 (44 FR 44501).

BCT is not an additional limitation but replaces BAT for the control of conventional pollutants. In addition to other factors specified in Section 304(b)(4)(b), the Act requires that BCT limitations be assessed in light of a two-part "cost-reasonableness" test. *American Paper Institute* v. *EPA*, 660 F.2d 954 (4th Cir. 1981). The first test compares the cost for private industry to reduce its conventional pollutants with the costs to publicly owned treatment works for similar levels of reduction in their discharge of these pollutants. The second test examines the cost-effectiveness of additional industrial treatment beyond BPT. EPA must find that limitations are "reasonable" under both tests before establishing them as BCT. In no case may BCT be less stringent than BPT.

EPA published its methodology for carrying out the BCT analysis on August 29, 1979 (44 FR 50732). In the case mentioned above, the Court of Appeals ordered EPA to correct data errors underlying EPA's calculation of the first test, and to apply the second cost test. (EPA had argued that a second cost test was not required.)

A revised methodology for the general development of BCT effluent limitations guidelines was proposed on October 29, 1982 (47 FR 49176). In addition, EPA published a notice of availability of new data for comment on September 20, 1984, (49 FR 37046). However, no final methodology has been promulgated. BCT effluent limitations guidelines for this industry are accordingly deferred until promulgation of the final methodology for development of BCT limitations.

4. New Source Performance Standards (NSPS)

NSPS are based on the best available demonstrated technology (BDT). New Plants have the opportunity to install the best and most efficient production processes and wastewater treatment technologies.

5. Pretreatment Standards for Existing Sources (PSES)

PSES are designed to prevent the discharge of pollutants that pass through, interfere with, or are otherwise incompatible with the operation of POTWs. They must be achieved within three years of promulgation. The Clean Water Act of 1977 requires pretreatment for toxic pollutants that pass through the POTW in amounts that would exceed direct discharger effluent limitations or interfere with the POTW's treatment process or chosen sludge disposal method. The legislative history of the 1977 Act indicates that pretreatment standards are to be technology-based, analogous to the best available technology for removal of toxic pollutants. EPA has generally determined that pollutants pass through POTW if the nationwide average percentage of pollutants removed by a well-operated POTW achieving secondary treatment is less than the percent removed by the BAT model treatment system. The General Pretreatment Regulations, which serve as the framework for the pretreatment regulations, are found at 40 CFR Part 403.

6. Pretreatment Standards for New Sources (PSNS)

Like PSES, PSNS are designed to prevent the discharge of pollutants which pass through, interfere with, or are otherwise incompatible with the operations of a POTW. PSNS are to be issued at the same time as NSPS. New indirect discharges, like new direct discharges, have the opportunity to incorporate in their plant the best available demonstrated technologies. The Agency considers the same factors in promulgating PSNS as it considers in promulgating PSES.

IV. Methodology and Data Gathering Efforts

The methodology and data gathering efforts used in developing the proposed regulation were summarized in the Preamble to the "Proposed Nonferrous Metals Forming and Iron and Steel/Copper/Aluminum Metal Powder Production and Powder Metallurgy Point Source Category Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards" (49 FR 8112, March 5, 1984), and described in detail in the *Proposed Development Document for Effluent Limitations Guidelines and Standards for the Nonferrous Metals Forming and Iron and Steel/Copper/Aluminum Metal Powder Production and Powder Metallurgy Point Source Category.*

After proposal, the Agency gathered additional data to clarify the basis for response to comments on the proposal and to provide further support for the regulation. The Agency also performed additional analysis of both new and existing data. These additional data and activities were described in the "Notice of Data Availability and Request for Comment" (50 FR 4872, February 4, 1985) and are discussed briefly below. They are also described in substantial detail

in the appropriate sections of the development document. The supporting information and additional data are in the record supporting this final rule.

Since proposal, the Agency has collected a considerable amount of additional data from nonferrous metals forming plants. EPA visited and sampled nine additional nonferrous metals forming plants to characterize raw wastewaters and treatment effectiveness. Treatment effectiveness data for nonconventional metal pollutants collected from these sampled plants were evaluated to form the basis for revised treatment effectiveness values for these pollutants. These treatment effectiveness values were published in the **Federal Register** notice of new data (50 FR 4872, February 4, 1985).

Since proposal, under the authority of Section 308 of the Clean Water Act, the Agency also requested 49 plants to submit analytical data on specific raw waste streams. Twenty-four plants provided these data directly and 19 plants provided samples to be analyzed. Three plants responded that they were no longer forming the metal for which information was requested, or that their production schedule did not include plans to form the metal specified within the time frame of the request. Three plants reported that they did not generate the waste stream for which information was requested.

In all, the Agency received analytical data for 52 waste streams for which we previously did not have any wastewater characteristics data. (At proposal, the Agency had assumed these wastewater streams would have characteristics similar to other waste streams in the nonferrous metals forming category.) Most of these wastewater streams were relatively small volume streams, such as forming lubricants.

The Agency also requested data to support comments on the proposed regulation and notice of availability from 10 companies. In addition, we received data collection portfolios from 43 plants that either had not responded before proposal or that were identified after proposal.

Based on information and data provided after proposal and reevaluation of existing data, the Agency revised many process wastewater regulatory flow allowances. A regulatory flow is a production normalized flow that is used in conjunction with the treatment effectiveness concentration to derive mass discharge allowances. The revised flows were noticed in the February 4, 1985 notice of new data. After that date, we received updated information revising data collection portfolios from certain companies. Based on this information, we have changed the regulatory flow allowance for 11 waste streams, including the forging contact cooling water streams in the magnesium, nickel-cobalt, refractory metals, and titanum subcategories; molten salt rinse and sawing or grinding rinse in the nickel-cobalt subcategory; electrocoating rinse in the nickel-cobalt and zinc subcategories; and forging equipment cleaning water in the magnesium, nickel-cobalt, and titanium subcategories.

To supplement existing data regarding treatment-in-place and the long-term performance of that treatment, the Agency collected discharge monitoring report (DMR) data from state and EPA Regional offices for direct dischargers. DMR data are self-monitoring data supplied by permit holders to meet state or EPA permit requirements. These data were available from 16 nonferrous forming plants; however, the data vary widely in character and nature due to the dissimilar nature of the monitoring and reporting requirements placed on different nonferrous metals forming plants by the various NPDES permit issuing authorities. Therefore, these data were not used in the actual development of the final limitations. However, DMR data from eight plants that have lime and settle treatment were used to verify the achievability of the treatment effectiveness values used to establish limitations and standards for certain pollutants. The results show that the final treatment effectiveness values are being achieved consistently at these eight plants. A discussion of these DMR data and a comparison of them to the treatment effectiveness values used in this regulation are found in the administrative record for this rulemaking.

In response to comments on the proposed regulation, the Agency also extensively revised the compliance costs and the economic impact analysis. The Agency has estimated costs on a plant-by-plant basis instead of on a representative plant basis as it did in the proposal. The costing methodology used to estimate plant compliance costs is discussed in Section VIII of the Development Document. The methodology used to estimate economic impacts is discussed in Section VI of this preamble in the *Economic Impact Analysis of Effluent Limitations and Standards for the Nonferrous Metals Forming amd Metal Powders Industry.*

V. Control and Treatment Technology Options and technology Basis for Final Regulations

A. Summary of Category

The various metals and forming operations covered by this regulation are described above. Nonferrous metals forming operations generate a variety of different waste streams. Lubricants consisting of neat oils, water, oil-water emulsions, or soap solutions are used for lubrication and cooling in rolling and drawing operations as well as sawing and grinding. Contact cooling water is commonly used to quench nonferrous metals products after casting, forming, or heat treatment operations. Wastewater is also generated by the discharges of baths and rinses used for cleaning or surface treating nonferrous metals products. Nonferrous metals forming plants also use wet air pollution control scrubbers to control fumes or particulates generated by nonferrous metals forming operations such as chemical surface treatment processes and metal powder production.

The most significant pollutants or pollutant parameters found in wastewater generated by nonferrous metals forming vary somewhat, depending on the metal type formed, but in general consist of:

(1) Priority pollutants—antimony, cadmium, chromium, copper, cyanide, lead, nickel, silver and zinc;

(2) Conventional pollutants—oil and grease, suspended solids, and pH; and

(3) Nonconventional pollutants—aluminum, ammonia, columbium, cobalt, fluoride, hafnium, iron, gold, magnesium, manganese, molybdenum, phosphorus, platinum, palladium, rhenium, tantalum, tin, titanium, tungsten, uranium, vanadium, and zirconium.

Toxic organics were not found in significant concentrations in nonferrous metals forming wastewater, except for tube reducing spent lubricant which was found to contain significant concentrations of N-nitrosodiphenylamine and a solvent degreasing water rinse that was found to contain significant concentrations of methylene chloride and toluene.

In developing this regulation, it was necessary to determine whether different effluent limitations guidelines and standards were appropriate for different segments (subcategories) of the industry. The major factors considered in assessing the need for subcategorization and in identifying subcategories included: Waste characteristics, raw materials, manufacturing processes, products manufactured, water use, water

pollution control technology, treatment costs, solid waste generation, size of plant, age of plant, number of employees, total energy requirements, nonwater quality characteristics, and unique plant characteristics. Section IV of the Development Document contains a detailed discussion of these factors and the rationale for subcategorization.

The one factor which has the greatest influence over the wastewater characteristics in the nonferrous metals forming category is the metal type that is formed. Therefore, EPA has subcategorized the nonferrous metals forming category based primarily on the metal type that is formed. In some subcategories, more than one metal type has been grouped together because the metals have the same metallurgical properties or tend to be formed using the same processes at the same facilities. The nonferrous metals forming subcategories are: lead-tin-bismuth, magnesium, nickel-cobalt, precious metals, refractory metals, titanium, uranium, zinc, zirconium-hafnium, and metal powders. The precious metals subcategory includes silver, gold, platinum, and palladium; the refractory metals subcategory includes columbium, molybdenum, rhenium, tantalum, tungsten, and vanadium. The metal powders subcategory includes the manufacturing and forming of iron, copper, and aluminum powders. Powder metal operations involving other types of metal are covered by the subcategory for that metal type.

Each subcategory consists of several "building blocks." There is one building block for each production process that generates wastewater. The building block approach provides a convenient basis for normalizing limitations and standards from one plant to another based on the mass of metal processed. The production normalizing parameter selected for nonferrous metals forming is the off-kilogram (off-pound) of metal removed from an operation at the end of the process cycle. This parameter was selected because the Agency found that the generation of pollutants is most closely related to the off-kilograms of metal processed. In addition, production records at nonferrous metals forming plants are usually maintained in terms of mass of metal produced, thus, this production normalizing parameter is most appropriate for industry's perspective.

Current wastewater treatment practices in the nonferrous metals forming category range from no treatment at all to treatment with chemical precipitation and sedimentation. Many plants in the nonferrous metals forming category do not discharge any process wastewater because they only use dry processes that do not generate wastewater. EPA is not promulgating allowable discharge limitations or standards for these dry processes. However, other processes used in the nonferrous metals forming industry do generate wastewater. EPA is today promulgating effluent limitations and standards for these processes. Of the 158 discharging plants, 38 use chemical precipitation and sedimentation to remove metals and suspended solids. One of the 38 plants also has equipment for multimedia filtration.

B. Control and Treatment Technology Options Considered

Prior to proposal of the nonferrous metals forming regulation, EPA considered a wide range of control and treatment technology options including both in-process changes and end-of-pipe treatment. These options are discussed in detail in the preamble to the proposed regulation. The control and treatment technologies used as the basis for the final limitations and standards are described below.

In-process controls include a variety of flow reduction techniques and process changes such as recycle and countercurrent cascade rinsing. End-of-pipe treatment technology options include chemical reduction of chromium, cyanide precipitation, and chemical emulsion breaking, where applicable; oil skimming, pH control, chemical precipitation of metal ions using hydroxides or carbonates and removal of precipitated metals by settling ("lime and settle"); and filtration. These treatment technologies are described in detail in Section VII of the Development Document.

EPA considered the following combinations of treatment and control technology options as the basis for BPT, BAT, NSPS, PSES, and PSNS for facilities within the nonferrous metals forming category.

Option 1—End-of-pipe treatment consisting of oil skimming, pH control, hydroxide precipitation (usually accomplished by adding lime) and sedimentation (lime and settle); and preliminary treatment, where necessary, consisting of cyanide precipitation, chromium reduction, ammonia steam stripping, and chemical emulsion breaking. This combination of technology reduces metal priority pollutants and conventional and nonconventional pollutants. Iron coprecipitation is included in this model treatment technology for removal of the pollutant molybdenum from wastewaters in the refractory metals and uranium subcategories. Option 1 includes flow normalization which means that the Agency has based the BPT limitations on the average production normalized flow for each building block. Aberrant flows were excluded from the mean calculations. Since the BPT limitations are based on the average water discharge, plants with greater than average discharge flows may have to reduce their flows to achieve the BPT effluent limitations.

Option 2—Option 2 is equal to Option 1 preceded by flow reduction of process wastewater through the use of countercurrent cascade rinsing, recycle through cooling towers for contact cooling water, and recycle through holding tanks for all other process wastewater subject to recycle.

Option 3—Option 3 is equal to Option 2 plus end-of-pipe polishing filtration for further reduction of metals and TSS, plus ion exchange in the precious metals subcategory to remove the pollutant gold.

The methods of determining achievable concentrations and variability factors used to compute monthly average and daily maximum concentrations for the various treatment and control technologies which comprise Options 1, 2 and 3 are discussed below.

1. *Lime and Settle Treatment Technology—a. The Combined Metals Data Base (CMDB).* In considering the performance achievable using lime and settle treatment of metals with and without polishing filtration, EPA evaluated data from nonferrous metals forming plants and plants in other categories with similar wastewater. The data base selected as the basis for lime and settle treatment without filtration is the combined metals data base (CMDB). This data base is a composite of influent and effluent concentration data for nine pollutants from wastewaters treated by lime and settle technology drawn from EPA sampling and analysis of wastewaters from the copper forming, aluminum forming, battery manufacturing, porcelain enameling, and coil coating point source categories. These wastewaters have been found to be statistically similar to nonferrous metals forming wastewater in all material respects because they contain the same dissolved metals at comparable concentrations that can be removed uniformly by precipitation and solids removal.

We regard the combined metals data base as the best available measure for establishing the concentrations for these nine pollutants which are attainable

with lime and settle treatment for the nonferrous metals forming industry. Our determination is based on an analysis which found that the untreated pollutant concentrations are generally homogeneous across subcategories within the nonferrous metals forming category and that the nonferrous metals forming untreated pollutant concentrations are generally homogeneous with the CMDB untreated pollutant concentrations pooled across categories. This homogeneity analysis appears in the record. EPA also believes the CMDB is the best available data base because of the larger number of plants in the CMDB (18 plants versus 7 nonferrous metals forming plants with available data). The larger quantity of data in the CMDB enhances the Agency's ability to estimate long-term performance and variability through statistical analysis. In addition, the CMDB has undergone extensive engineering and statistically-based evaluation in response to comments and issues raised in various other rulemakings for related metals industries where the Agency has relied on the CMDB.

We view the use of the combined metals data base as appropriate for nonferrous metals forming plants because properly operated lime and settle treatment will result in effluent concentrations that are directly related to pollutant solubilities. These effluent concentrations are referred to as the treatment effectiveness of lime and settle technology. Since the nonferrous metals forming raw wastewater matrix contains the same toxic pollutants at concentrations of the same order of magnitude as the CMDB raw wastewater and the technology is solubility-based, we believe the mean treatment process effluent and variability for nonferrous metals forming wastewater will be the same as the CMDB. We also do not believe any interfering properties (such as chelating agents) exist in nonferrous metals forming wastewater such that they would interfere with metal precipitation and so prevent attaining concentrations calculated from the combined metals data base. It is important to note that the treatment effectiveness values derived from the CMDB are only achievable when lime and settle treatment is preceded by any necessary preliminary treatment (e.g., chromium reduction, chemical emulsion breaking) which is part of the model technology as appropriate.

b. *Antimony and Silver.* We also are promulgating limits based on lime and settle technology for certain pollutants not included in the combined metals data base. Treatment effectiveness for silver and antimony were calculated from nonferrous metals manufacturing data. Since many nonferrous metals forming plants also manufacture nonferrous metals and combine the wastewater from both processes for common treatment, it is reasonable for the Agency to assume that nonferrous metals forming plants with lime and settle treatment will achieve the same effluent concentrations that are achieved for those two pollutants at nonferrous metals manufacturing plants.

c. *Fluoride.* The model treatment technology for removing fluoride is also lime and settle. The effectiveness of lime and settle treatment is derived from the electrical and electronic components (E&EC) category Phase 2. The Agency believes the E&EC Phase 2 data base closely reflects the treatability of fluoride in nonferrous metals forming wastewaters because of the source of the fluoride and the type of fluoride present. The presence of fluoride in both categories is from the use of hydrofluoric acid as a cleaning or etching agent which dissociates in water to fluoride ion, which can be readily removed from solution by lime as calcium fluoride.

2. *Filtration Technology.* The pollutant concentrations achievable with lime precipitation, sedimentation, and polishing filtration (lime, settle, and filter) are based on data from three plants with that technology in place: one nonferrous metals manufacturing plant and two porcelain enameling plants. EPA has extensive long-term data from these plants. We believe that the use of polishing filtration data from porcelain enameling plants is justified because the pollutants and pollutant concentrations in porcelain enameling and in nonferrous metals forming wastewaters are similar. We conclude this because data from porcelain enameling was included in the combined metals data base, which we have determined to be homogeneous with data from nonferrous metals forming. We also believe that use of polishing filtration data from the nonferrous metals forming manufacturing plant is justified because many plants which have nonferrous metals forming operations also have nonferrous metals manufacturing operations and combine wastewater for treatment. Therefore, it is reasonable for the Agency to assume that polishing filters treating nonferrous metals forming wastewater from lime and settle treatment and nonferrous metals manufacturing wastewaters from lime and settle treatment will achieve the same effluent concentrations.

3. *Iron Coprecipitation Technology.* Iron coprecipitation is part of the model technology for removing the pollutant molybdenum in the refractory metals forming and uranium forming subcategories. In the February 4 notice of availability, the Agency published a treatment effectiveness value for molybdenum based on data obtained from a molybdenum manufacturing plant. This value was based on the average of three days of sampling the effluent from a lime and settle treatment system. Also, in the Agency's post-proposal sampling effort, we sampled a uranium forming plant that had treatable concentrations of molybdenum in the raw wastewater. This plant treats its wastewater through iron addition, lime, and settle; the iron coprecipitates molybdenum. This plant achieved treated effluent concentrations for molybdenum which were consistent with the concentration published in the notice of new data. The data were included in the record for the notice. Therefore, EPA is basing the molybdenum limitations and standards on the basis of the data collected from this uranium forming facility which includes iron coprecipitation in its treatment system. The long-term average concentration for molybdenum from the uranium forming facility is 1.83 mg/l for lime and settle treatment.

Iron coprecipitation is a widely used treatment technology and frequently occurs unintentionally in industrial wastewater treatment situations. Whenever iron is present at a high concentration in raw wastewater, it will act as a coprecipitant in a lime and settle treatment system and aid in the removal of other metal pollutants present in the wastewater. Iron coprecipitation is demonstrated at a uranium forming plant, as described above, and is equally applicable to the refractory metals forming subcategory because the process wastewaters have similar characteristics. Further, the addition of iron for coprecipitation to aid in metals removal is considered a routine part of state-of-the-art lime and settle technology which should be implemented as required to achieve optimum removal of metals. Iron coprecipitation is discussed in more detail in Section VII of the Development Document.

4. *Ammonia Steam Stripping Technology.* Ammonia steam stripping is part of the model technology for removing ammonia from the magnesium forming, titanium forming, and zirconium-hafnium forming

subcategories. This technology is used routinely to reduce ammonia levels. To determine treatment effectiveness, EPA collected chemical analysis data of raw waste (treatment influent) and treated waste (treatment effluent) from one plant in the iron and steel category using ammonia steam stripping. These data are contained in the administrative record supporting this regulation. We believe this treatment performance can be transferred to nonferrous metals forming subcategories because the technology is solubility-related and these nonferrous metals forming subcategories do not contain interfering agents that would reduce ammonia removals.

The Agency has verified the proposed steam stripping values using steam stripping data collected at a nonferrous metals manufacturing and forming plant that has a combined wastewater treatment system. These data also appear in the record for this rulemaking. Data collected by the plant represent almost two years of daily operations, and support the long-term mean used to establish treatment effectiveness.

5. *Cyanide Precipitation.* The model technology for removing cyanide from process wastewaters in the precious metals, titanium, zinc, zirconium-hafnium, and metal powders subcategories is cyanide precipitation. This technology is frequently used in industrial applications, although no nonferrous metals forming plant reported its use. The treatment performance for cyanide precipitation technology is transferred from the coil coating category. The Agency believes that cyanide precipitation should be equally effective at removing cyanide from nonferrous metals forming wastewaters because the analysis of homogeneity has demonstrated similarity between the nonferrous metals forming data base and the CMDB, which includes data on coil coating wastewaters.

C. Technology Basis for Final Regulation

A brief summary of the technology basis for the regulation is presented below. A more detailed discussion is presented in the *Development Document for Effluent Limitations Guidelines and Standards for the Nonferrous Metals Forming and Metal Powders Point Source Category.*

BPT: EPA is promulgating BPT mass limitations based on end-of-pipe treatment, which consists of flow normalization and lime and settle with preliminary treatment of ammonia steam stripping, cyanide removal, chromium reduction, and chemical emulsion breaking where appropriate, for all subcategories except the refractory metals, and uranium forming subcategories. The end-of-pipe treatment technology basis for the promulgated BPT limitations is the same as that for the proposed BPT limitations. The model end-of-pipe technology for the refractory metals forming and uranium forming subcategories is the same technology as the other subcategories, plus iron coprecipitation to remove the pollutant molybdenum. The BPT model technology of lime and settle is demonstrated at 46 nonferrous metals forming plants. The effectiveness of lime and settle treatment, plus any necessary preliminary treatment (e.g., chromium reduction, chemical emulsion breaking), is based on the combined metals data base which the Agency has determined to be applicable to wastewaters generated by the nonferrous metals forming category.

In developing BPT limitations, the Agency considered the amount of water used per unit of production (liters per kkg or metric ton) for each wastewater stream in each subcategory. In general, the regulatory flows for BPT were based on the average of the reported water use or discharge values. The Agency has used BPT regulatory flows based on flow reduction only in those unusual cases where water flow reduction is commonly practiced throughout the building block. Based on its reevaluation of existing data and additional data it collected since proposal, the Agency has revised most of the proposed regulatory flow allowances for the category. In the notice of data availability (50 FR 4872, February 4, 1985), EPA explained the basis for revising the regulatory flow allowances and made them available for public comment. Since then, EPA has made additional changes to 11 process wastewater flows. These additional changes are the result of clarification of information provided in one company's dcp, and the discovery of an error in one entry for a nickel-cobalt waste stream. In addition, we have received additional data from two companies regarding electrocoating of nonferrous metals performed in conjunction with forming these metals. One company applies a copper or nickel coating to a nickel-based material. The coating acts as a drawing lubricant; after drawing the coating is pickled off the base material. We have added a building block to cover this process since it is clearly an integral part of the nickel-cobalt forming process. We have also added a building block to the zinc forming subcategory to cover a similar process in which copper is electrocoated onto zinc penny blanks. Making these blanks is an integral part of this plant's zinc forming operations.

The pollutants selected for regulation at BPT vary by subcategory. They are tabulated below.

Nonferrous Metals Forming Regulated Pollutants

Subcategory	AT BPT AT BAT														
	Sb	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CN	NH_3	F	Mo	O&G	TSS	pH
Lead-Tin-Bismuth	X				X								X	X	X
Magnesium			X					X		X	X		X	X	X
Nickel-Cobalt			X			X					X		X	X	X
Precious Metals		X		X	X		X		X				X	X	X
Refractory Metals				X		X					X	X	X	X	X
Titanium					X			X	X	X	X		X	X	X
Uranium		X	X	X	X	X					X	X	X	X	X
Zinc			X	X				X	X				X	X	X
Zirconium-Hafnium			X			X			X	X	X		X	X	X
Metal Powders				X	X				X				X	X	X

Thirty-seven nonferrous metals forming plants are direct dischargers. The Agency estimates that BPT will result in the removal of an estimated 1580 kg (3480 pounds) of priority pollutants and 173,000 kg (381,000 pounds) of total pollutants per year from estimated current discharge levels. The estimated capital investment cost of BPT is $4.4 million and the estimated annual cost is $3.7 million, in 1982 dollars. These are the costs for wastewater treatment equipment not currently in place. We do not project any plant closures or unemployment as a result of meeting the BPT limitations. The Agency has determined that the pollutant reduction benefits associated with compliance justify the costs. More stringent technology options were not selected since they would require in-process changes or end-of-pipe technologies which are not widely practiced by plants in the category and, therefore, are more appropriately considered under BAT.

BAT: The Agency examined the technology basis for BAT on a subcategory-by-subcategory basis. The technology basis includes the BPT model technology plus in-process flow reduction and, in some subcategories, filtration as a final polishing step. In the case of the metal powders subcategory no additional flow reduction has been required. In developing BAT limitations, the Agency considered the amount of water used per unit of production (liters per metric ton or gallons per ton) for each wastewater stream. Flow reduction is based on recycle of heat treatment contact cooling water through cooling towers, recycle of air pollution control scrubber liquor, countercurrent cascade rinsing of alkaline cleaning and surface treatment rinsewater, and use of holding tanks for all other process water subject to recycle. Approximately 15 percent of the direct dischargers which have operations where flow reduction technology was considered to be technically feasible have already achieved the reduced flow that forms the basis of Options 2 and 3. As explained in Section VI below, we have concluded that the costs of achieving limitations based on the model technologies for each subcategory are reasonable and the limitations are economically achievable for each subcategory.

Lead-Tin-Bismuth. The Agency is promulgating BAT limitations for the lead-tin-bismuth subcategory on the basis of lime and settle end-of-pipe treatment technology and in-process controls to reduce wastewater flows (Option 2). This is the same technology basis as was proposed. The Agency did not receive any comments on the proposed limitations for the lead-tin-bismuth subcategory. This BAT model technology is demonstrated, technically feasible, and economically achievable. The selected BAT model technology is estimated to remove 850 kg/yr (1860 lb/yr) of pollutants from current discharge, including 81 kg/yr (180 lb/yr) of priority pollutants. (The capital and annual costs associated with this subcategory are not

provided in order to protect information claimed confidential.) These costs are included in the confidential record supporting this regulation. EPA did not promulgate BAT based on the addition of a filter because several lead-tin-bismuth forming plants also have operations which are covered by the battery manufacturing or copper forming regulations, both of which have limitations established on the model treatment technology of flow reduction, lime, and settle. By promulgating BAT limitations for the lead-tin-bismuth subcategory based on lime and settle technology without the addition of a filter, plants with both types of operations will not need to segregate these wastewaters for treatment. Further, the addition of a filter would only remove an additional 1 kg/yr (2 lb/yr) of priority pollutants for the whole subcategory. Therefore, EPA is promulgating BAT on the basis of flow reduction, lime, and settle model technology.

Magnesium. The Agency is promulgating BAT limitations for the magnesium subcategory on the basis of lime and settle end-of-pipe treatment technology and in-process controls to reduce wastewater flow (Option 2). Although the Agency proposed limitations and standards based on flow reduction, lime, settle, and filter for this subcategory, we stated in the proposal that we would give equal consideration to flow reduction, lime, and settle as the model technology. This model technology is demonstrated, technically feasible, and economically achievable. We have concluded that flow reduction, lime, and settle is the appropriate BAT technology for the following reasons. The one existing direct discharge plant in the magnesium subcategory also forms aluminum, and the BAT limitations in the aluminum forming regulation are based on the same model technology, i.e., flow reduction, lime, and settle. By promulgating BAT limitations for the magnesium subcategory based on this technology, this plant will not need to segregate its wastewaters for treatment. EPA estimates that 14,795 kg/yr (32,550 lb/yr) of priority pollutants will be removed after the installation of this BAT treatment technology. The captal and annual costs associated with this subcategory are not provided in order to protect information claimed confidential. These costs are included in the confidential record supporting this regulation. Furthermore, the addition of a filter to the lime and settle treatment would only remove 1 kg (2 lbs) of toxic pollutants annually. Therefore, EPA is promulgating BAT on the basis of flow reduction, lime, and settle model technology.

Nickel-Cobalt. The Agency is promulgating BAT limitations for the nickel-cobalt subcategory on the basis of lime, settle, and filter end-of-pipe treatment technology and in-process controls to reduce wastewater flows (Option 3). This is the same technology basis which was also the basis for the proposed BAT limitations. This technology is demonstrated, and technically feasible and economically achievable. One nickel-cobalt forming plant currently has a polishing filter in place, although it is not currently using the filter because it can meet its permit requirements without doing so. EPA has included filters in the model technology because filters will remove significant amounts of additional pollutants, and the costs of this removal are reasonable. The selected BAT model technology is estimated to remove 19,000 kg/yr (41,000 lb/yr) of pollutants from current discharge, including 1160 kg/yr (2550 lb/yr) of priority pollutants. The installation of the model BAT technology is estimated to cost $493,400 in capital investment and $242,000 annually above equipment in place (1982 dollars). EPA recognizes that some plants cotreat process wastewaters from nickel-cobalt forming operations with wastewater from operations regulated under other nonferrous metals forming subcategories and point source categories whose effluent limitations guidelines are not based on the addition of a filter to the lime and settle treatment system. As part of this rulemaking, EPA has considered the cost for these plants to cotreat their combined wastewater flows and achieve the applicable effluent limitations.

Precious Metals. The Agency is promulgating BAT limitations for the precious metals subcategory on the basis of lime and settle end-of-pipe treatment technology and in-process controls to reduce wastewater flows (Option 2). Although the Agency proposed limitations and standards based on flow reduction, lime, settle, and filter for this subcategory, we stated in the proposal that we would give equal consideration to flow reduction, lime, and settle as the model technology. In the February 4 notice of availability, we stated that we were also considering adding ion exchange to the model technology for this subcategory. This technology is demonstrated, technically feasible, and economically achievable. The selected BAT model technology is estimated to remove 1770 kg/yr (390 lb/yr) of pollutants from current discharges, including 33 kg/yr (73 lb/yr) of pollutants. The installation of the model BAT technology is estimated to cost $314,600 in capital investment and $127,900 annually above equipment in place (1982 dollars). The addition of a filter to the lime and settle treatment would cost $37,000 in capital investment and $22,900 annually but would only remove 2 kg (4 lb) of toxic pollutants annually. The Agency believes that given all these factors, the costs involved do not warrant selection of filtration as part of the BAT model technology. In addition, precious metals are frequently alloyed with copper, in alloys which contain mostly copper; yet these alloys are considered to be precious metals alloys by the companies that form them. Therefore, the Agency is defining a precious metal alloy as any alloy which contains precious metal at 30 percent or greater by weight. This will simplify compliance with permit requirements for companies that form precious metals, since their process wastewater will be regulated by one regulation instead of two.

Refractory Metals. The Agency is promulgating BAT limitations for the refractory metals subcategory on the basis of flow reduction, lime, settle, and filter, plus iron coprecipitation for molybdenum removal (Option 3). The Agency proposed BAT on the basis of flow reduction, lime, settle, and filter. As explained above, since proposal we have obtained additional data on the treatment effectiveness of iron addition to coprecipitate molybdenum. This technology is currently demonstrated at one nonferrous metals forming plant which has treatable concentrations of molybdenum in its raw wastewater. These data were noticed in the **Federal Register** notice of data availability. The Agency estimates that BPT technology will remove 24,200 kg/yr (53,200 lb/yr) of total pollutants from refractory metals wastewaters. Application of BAT technology should achieve an additional removal of 5100 kg/yr (11,200 lb/yr) which includes 80 kg/yr (180 lb/yr) of toxic pollutants. The BAT technology requires $135,400 in capital costs and $68,000 in annual costs (1982 dollars) above treatment already in place. Because of the particular processes used by existing direct dischargers, they can remove more pollutants at significantly less cost than indirect discharging plants can. (See discussion of PSES for this subcategory below.) EPA recognizes that some plants cotreat process wastewaters from refractory metals forming operations with wastewater from operations regulated under other

nonferrous metals forming subcategories and point source categories whose effluent limitations guidelines and standards are not based on the addition of a filter to the lime and settle treatment system. As part of this rulemaking, EPA has considered the cost for these plants to cotreat their combined wastewater flows and achieve the applicable effluent limitations. As discussed below, EPA has concluded that these promulgated BAT effluent limitations are economically achievable.

Titanium. The Agency is promulgating BAT limitations on the basis of lime and settle end-of-pipe treatment and in-process controls to reduce wastewater flow (Option 2). Although the Agency proposed flow reduction, lime, settle, and filter as the BAT model technology basis for this subcategory, we stated in the preamble to the proposed regulation that we were also considering flow reduction, lime, and settle as the model technology. This model technology is demonstrated, technically feasible, and economically achievable. EPA estimates that 260 kg/yr (570 lb/yr) of priority pollutants will be removed by the BAT treatment technology at a cost of $2,130,000 in capital investment and $2,192,000 annually above equipment in place (1982 dollars). The addition of a filter to the lime and settle treatment system would cost $211,000 in capital investment and $121,300 annually (1982 dollars) and would remove only 18 kg (40 lbs) of priority pollutants annually, which is approximately 1.4 kg (3 lbs) of such pollutants per plant. The Agency believes that, given all these factors, the costs involved do not warrant selection of filtration as part of the model BAT treatment technology. EPA recognizes that some plants cotreat process wastewaters from titanium forming operations with wastewater from operations regulated under other nonferrous metals forming subcategories and point source categories whose effluent limitations guidelines are based on the addition of a filter to the lime and settle treatment system. As part of this rulemaking, EPA has considered the cost for these plants to cotreat their combined wastewater flows and achieve the applicable effluent limitations.

Uranium. The Agency is promulgating BAT on the basis of lime, settle, and filter end-of-pipe technology with in-process controls to reduce wastewater flows (Option 3), which was also the model technology basis for the proposed effluent limitations guidelines, plus iron coprecipitation to remove the pollutant molybdenum. This technology is demonstrated, technically feasible, and economically achievable. The selected BAT model technology is estimated to remove 13,800 kg/yr (30,300 lb/yr) of pollutants from current discharge, including 38 kg/yr (84 lb/yr) of priority pollutants. The capital and annual costs associated with this subcategory are not provided in order to protect information claimed confidential. These costs are included in the confidential record supporting this regulation. The Agency has determined that BAT limitations for the uranium subcategory based on flow reduction, lime, settle and filter technology are technically feasible and economically achievable.

Zinc. The Agency is promulgating BAT limitations for the zinc subcategory on the basis of lime, settle, and filter end-of-pipe treatment technology and in-process controls to reduce wastewater flow (Option 3). This same technology was the basis for the proposed effluent limitations guidelines. No comments were received on this choice of model technology. This technology is technically feasible and economically achievable. The selected BAT model technology is estimated to remove 2,525 kg/yr (5,555 lb/yr) of pollutants currently discharged, including 133 kg/yr (300 lb/yr) of priority pollutants. The capital and annual costs associated with this subcategory are not provided in order to protect information claimed confidential. These costs are included in the confidential record supporting this regulation. In addition, the application of a filter achieves an incremental removal of 50 kg/yr (110 lb/yr) of toxic pollutants.

Since proposal, EPA has obtained data and information on a process in which a copper coating is applied to zinc penny blanks. We have added a building block to the zinc forming subcategory that covers the electrocoating rinsewater generated by this process. The Agency believes this action will simplify compliance with BAT requirements for the zinc forming subcategory since all the process wastewater generated by this direct discharge zinc forming plant is covered under one regulation with the same end-of-pipe treatment requirements.

Zirconium-Hafnium. The Agency is promulgating BAT on the basis of lime and settle end-of-pipe technology with in-process controls to reduce wastewater flows (Option 2). This model technology is demonstrated, technically feasible, and economically achievable. Although the Agency proposed BAT effluent limitations based on flow reduction, lime, settle, and filter model technology, we stated in the preamble to the proposed regulation that we were also considering flow reduction, lime, and settle model technology. The Agency has decided not to include filtration as part of the model BAT treatment technology. EPA estimates the 645 kg/yr (1420 lb/yr) of priority pollutants will be removed after installation of the BAT treatment technology which is estimated to cost $567,700 in capital investment and $400,400 annually above equipment in place (1982 dollars). The addition of filters would only remove 0.2 kg/yr (0.4 lb/yr) of priority pollutants which is approximately 0.01 kg/yr (0.02 lb/yr) per plant. The incremental costs for this effluent reduction would be $117,300 in capital investment and $60,000 in annual costs (1982 dollars). The Agency believes that given all these factors, the costs involved do not warrant inclusion of filtration as part of the BAT model technology. EPA recognizes that some plants cotreat process wastewaters from zirconium-hafnium forming with operations with wastewaters from operations regulated under other nonferrous metals forming subcategories and point source categories whose effluent limitations guidelines are based on the addition of a filter to the lime and settle treatment system. As part of this rulemaking, EPA has considered the cost for these plants to cotreat their combined wastewater flows and achieve the applicable effluent limitations. As discussed below, EPA has concluded that these promulgated BAT effluent limitations are economically achievable.

Metal Powders. The Agency is promulgating BAT limitations for the metal powders subcategory on the basis of lime and settle end-of-pipe treatment technology (Option 1). Although the Agency proposed BAT limitations on the basis of lime and settle with additional in-process controls to reduce wastewater flows, the direct dischargers do not currently have any of the processes for which additional flow reduction is applicable and therefore, there is no additional pollutant removal with the application of additional flow reduction technologies to direct dischargers. EPA has decided to promulgate BAT limitations that are equal to BPT limitations for this subcategory. EPA recognizes that some plants cotreat process wastewaters from metal powders operations with wastewaters from operations regulated under other nonferrous metals forming subcategories and point source categories whose effluent limitations guidelines are based on the addition of flow reduction or a filter to the lime and

settle treatment system. As part of this rulemaking, EPA has considered the cost for these plants to cotreat their applicable effluent limitations. As discussed below, EPA has concluded that these promulgated BAT effluent limitations are economically achievable.

The pollutants specifically limited under BAT in each subcategory are tabulated above. In general, in each subcategory we have selected for regulation the two or three metal priority pollutants present at the highest concentrations in the raw waste, because in removing these two or three metals, the model lime and settle treatment system should also provide adequate removal of the other metals present at lower concentrations.

In each subcategory, the metal present at the highest concentration is the metal being subjected to the forming operations. In some subcategories, that metal is a priority pollutant (nickel in the nickel-cobalt forming subcategory, for example). In the other subcategories, that metal is a nonconventional pollutant (titanium in the titanium forming subcategory, for example). In general, EPA is not establishing effluent limitations guidelines and standards for nonconventional metal pollutants, even when they are the metal being formed (such as titanium in titanium forming), because in these cases, the Agency has concluded that regulation of just the metal priority pollutants will ensure that the nonconventional metal pollutants are removed. Further, establishing national regulations for only the metal priority pollutants allows plants greater flexibility in the treatment of wastewater streams which are covered by more than one point source category or subcategory, because the regulated pollutants controlled are more likely to be the same. However, for the nonconventional metal pollutants EPA is not regulating, the Agency has provided guidance to permit writers on the mass discharge attainable using the BAT model technology for each such pollutant. This guidance appears in Section VII, IX, and X of the Development Document.

EPA is regulating one nonconventional metal pollutant: molybdenum in the refractory metals and uranium subcategories. End-of-pipe technology in addition to lime and settle, or lime, settle, and filter treatment is necessary to ensure adequate removal of molybdenum from process wastewater. EPA has added iron coprecipitation to the model technology for the refractory metals and uranium subcategories to remove the pollutant molybdenum. Molybdenum is present in significant concentrations at refractory metals plants because it is one of the refractory metals being formed. It is also present in significant concentrations at uranium forming plants because it is used as a major alloying agent in depleted uranium alloys. EPA is also establishing limitations for the nonconventional pollutants fluoride and ammonia. Fluoride was found in significant concentrations in the magnesium, nickel-cobalt, refractory metals, titanium, uranium, and zirconium-hafnium subcategories. The model technology for removal of fluoride is lime and settle. Fluoride is precipitated from solution as a calcium salt. Therefore, lime is the alkali most commonly used to remove fluoride, whereas the precipitation of most metal pollutants can be accomplished with any alkali salt. Ammonia was found in significant concentrations at plants in the magnesium, titanium, and zirconium-hafnium subcategories. The model technology for removing ammonia is steam stripping.

Toxic organic pollutants were found in two nonferrous metals forming waste streams. N-nitrosodiphenylamine was found in a significant amount in a sample of tube reducing lubricant. In addition, methylene chloride and toluene were found in the rinsewater which followed a solvent cleaning bath composed of these compounds. The Agency is requiring zero discharge from these wastewater streams. Tube reducing lubricants are currently hauled, rather than discharged, by the majority of plants that generate this waste. Since they tend to be small in volume and highly concentrated, the Agency has concluded this is the most practical disposal alternative. These waste streams can be most economically handled by intercepting each such waste stream before mixing it with other process wastewaters and disposing of it as a solid waste. Treatment of the wastes with activated carbon after mixing either waste stream with other process wastewaters would be much more expensive.

Solvents are commonly used by nonferrous metals forming companies to clean oils from the surface of the metal; these processes are almost always dry. However, at one plant sampled after proposal, the Agency observed and sampled an organic solvent cleaning process that involves the generation of contaminated rinsewater. EPA is establishing a zero discharge allowance for this waste stream. Other plants perform the same process without generating any wastewater by using solvents which need not be followed by a water rinse. EPA has based the zero discharge requirement on a process change which should achieve the same product quality as a water rinse at very little expense. Instead of operating a solvent bath followed by a water rinse, this plant can convert the water rinse into a second solvent cleaning step.

The Agency found 1,1,1-trichloroethane in small amounts in the nickel-cobalt, refractory metals, zirconium-hafnium and metal powders subcategories. The Agency also found chlorodibromomethane, bis(2-ethylhexyl)phthalate and di-n-butyl phthalate in small amounts in zinc forming process wastewater. From the available data, the Agency believes these pollutants are unique to those sources and are not present as an integral part of the nonferrous forming process. Therefore, EPA is not regulating these pollutants. However, the permit writer should consider the possible presence of toxic organic pollutants in nonferrous metals forming wastewater and if found should control them under this regulation on the basis of best professional judgment.

Implementation of BAT by all the direct dischargers in the 10 subcategories will remove an additional 940 kg (2070 pounds) per year of total priority pollutants beyond BPT at an additional capital cost of $603,000 and additional annualized costs of $202,000 in 1982 dollars. The Agency estimates that implementation of BAT will remove a total of 230,000 kg/year (503,000 lbs/year) of pollutants at a total annualized cost of $3.9 million from current levels. No potential plant closures as a result of meeting these requirements are expected, based on our economic impact analysis. The Agency has therefore concluded that this level of BAT control is economically achievable.

NSPS: The Agency is promulgating NSPS for the nonferrous metals forming category based on the same technology basis as was proposed, except in the precious metals, titanium, and zirconium-hafnium subcategories. For these three subcategories, the technology basis is the same as the model BAT technology. Accordingly, the model technology basis for new sources is lime, settle, and filter with in-process controls to reduce wastewater flows for all subcategories except lead-tin-bismuth, precious metals, titanium, zirconium-hafnium, and metal powders. EPA is promulgating NSPS for these five subcategories on the basis of lime and settle with in-process controls to reduce wastewater flows. For each subcategory, these model technologies represent the best demonstrated

technology. The subcategories which have more stringent requirements for new sources than for existing sources are magnesium and metal powders.

In developing NSPS, the Agency considered the amount of water used per unit of production for each wastewater stream. Most of the new source regulatory flow allowances are equivalent to BAT allowances. The only exception is in the metal powders subcategory. As discussed above, the BAT requirements for existing sources in the metal powders subcategory do not include additional in-process controls above BPT requirements. However, opportunities to achieve further flow reduction of process wastewater do currently exist for some process waste streams that are not employed at existing direct discharge facilities and the Agency believes these processes could be used at new sources. Therefore, the new source standards for this subcategory are based on the application of additional flow reduction technologies on a number of process wastewater streams. New sources would not incur expenses associated with retrofitting these additional flow reduction technologies and would have the opportunity to install a treatment system which is designed to handle the reduced flow. The Agency therefore concludes that the metal powders subcategory new source standards will not pose a barrier to entry.

NSPS model technology for magnesium forming is based on flow reduction, lime, settle, and filter. The addition of a filter would increase the annual cost of wastewater pollution control for existing sources by about 10 percent. However, a new source is able to design a treatment system to handle the new source flow without the expense of retrofitting flow reduction and treatment equipment into the facility. The cost of a filter for new sources is expected to be only 0.05 percent of estimated revenues for a new source. Therefore, the Agency does not expect NSPS to pose a barrier to entry for new sources.

EPA is promulgating NSPS in the precious metals, titanium, and zirconium-hafnium subcategories based on lime, settle, and in-process controls to reduce wastewater flow (Option 2). These NSPS are equivalent to the BAT limitations for these subcategories. The Agency has decided not to include filters as part of the NSPS model technology (as had been proposed) for the same reasons discussed above for rejecting filters as part of the BAT model technology for these subcategories.

Since NSPS for these subcategories are equivalent to the BAT requirements, the Agency has concluded that there will be no barrier to entry for new sources in those subcategories. In fact, the new sources can design for efficient process water use and maximize wastewater reduction, thereby reducing the size (and in turn the cost) of pollution control equipment. Therefore, such equipment may actually be less costly to install and operate in comparison to retrofit at existing plants.

The NSPS model technology basis for the nickel-cobalt, refractory metals, uranium, and zinc subcategories is flow reduction, lime, settle, and filter, which is the same as the NSPS technology basis for the proposed regulation. The NSPS model technology basis for the lead-tin-bismuth subcategory is flow reduction, lime and settle, which is the same as the NSPS model technology basis in the proposed regulation. EPA's reasons for selecting these technology bases is explained under BAT, above. The pollutants selected for regulation are the same as have been selected for regulation at BAT plus oil and grease, TSS, and pH for all subcategories.

PSES. The Agency is promulgating PSES for the nonferrous forming category on the same technology basis as BAT for each subcategory except for the refactory metals, uranium, and zinc subcategories. In the nonferrous metals forming category, the Agency has concluded that the metal priority pollutants, ammonia, fluoride, and molybdenum pass through the POTW. A study of 40 well-operated POTW with biological treatment that are meeting secondary treatment criteria showed that regulated metals are typically removed at rates varying from 20 to 70 percent. Section XII of the Development Document compares the percent of pollutant remaining after treatment by a well-operated POTW with the percent removed by BAT level treatment for each pollutant regulated in this category. POTW with only primary treatment have even lower rates of removal. In contrast, BAT level treatment by nonferrous metals forming industrial facilities can achieve removals of these pollutants of approximately 90 percent. Thus it is evident that metals from this category do pass through POTWs. Many of the pollutants present in nonferrous metals forming waste streams, at sufficiently high concentrations, can also inhibit biodegradation in POTW operations. In addition, a high concentration of toxic pollutants in the sludge can limit POTW use of sludge management alternatives, including the beneficial use of sludges on agricultural lands.

EPA is excluding the uranium forming subcategory from PSES under the provisions of Paragraph 8(b) of the Settlement Agreement because there are no existing indirect dischargers in the uranium forming subcategory. In addition, EPA is not promulgating any categorical PSES for zinc forming. EPA proposed this exclusion because, on the basis of available information, it appeared that the economic impact of pretreatment standards based on any available technology option would be disproportionate for this subcategory. Since proposal, EPA has re-estimated compliance costs on a plant-by-plant basis for the entire category, and our conclusions about the economic impact for the indirect discharging zinc forming plants has not changed. Therefore, the Agency has not established categorical PSES for the zinc subcategory. Of course, these plants are still subject to the general pretreatment requirements.

The PSES promulgated today are equivalent to the BAT effluent limitations guidelines in all subcategories except the refractory metals subcategory. PSES for the refractory metals subcategory is promulgated based on the model end-of-pipe treatment technology of iron coprecipitation, lime, and settle with in-process controls to reduce wastewater flows (Option 2). As discussed above, BAT effluent limitations guidelines are based on Option 3. The Agency has decided not to include a filter in the model PSES technology for this subcategory because, based on the processes at existing refractory metal indirect dischargers, EPA estimates that 169,000 kg/yr (371,000 lb/yr) of pollutants, including 250 kg/yr (550 lb/yr) of toxic pollutants, will be removed after the installation of Option 2 technology at a cost of $1.54 million in capital investment and $0.6 million annually above equipment in place (1982 dollars). The addition of filtration would only remove an additional 9 kg/yr (20 lb/yr) of toxic pollutants (approximately 0.4 kg/yr (0.9 lb/yr) of toxic pollutants per plant), while the incremental cost of filters for refractory metal indirect dischargers is $97,500 in capital investment and $57,200 in annual cost (1982 dollars). These costs are significantly greater than the cost that will be incurred by existing direct dischargers. The Agency believes that, given these factors, the costs involved do not warrant selection of filtration as part of the PSES model technology. As discussed above, the Agency costed co-treatment for plants which treat process wastewater from refractory metals forming operations with wastewater from operations regulated under other nonferrous metals forming subcategories

and point source categories whose pretreatment standards are based on the addition of a filter to lime and settle treatment and concluded that these PSES are economically achievable.

PSES is promulgated on the basis of less stringent model technology than proposed in the magnesium, titanium, zirconium-hafnium, and metal powders subcategories. Under the Clean Water Act, PSES is to be generally analogous to BAT. These decisions are discussed in more detail below.

The metal powders BAT limitations are based on Option 1 (rather than Option 2 as proposed) because, as discussed above, the direct dischargers generally do not use any of the processes for which additional flow reduction is available. PSES for the metal powders subcategory is established based on Option 1 to be analogous to the BAT limitations. In addition, EPA estimates that 960 kg/yr (2,100 lb/yr) of toxic pollutants will be removed after installation of Option 1 technology at a cost of $512,000 in capital investment and $334,000 annually above equipment in place (1982 dollars). The addition of flow reduction to PSES would remove 88 kg/yr (190 lbs/yr) additional toxic pollutants which is approximately 3.3 kg/yr (7 lbs/yr) per plant. Although EPA estimates that capital investment costs for wastewater pollution control equipment will actually be less with the installation of flow reduction technology, the incremental annual costs for this removal is $101,000 (1982 dollars). For all these reasons, EPA believes that the costs involved do not warrant selection of flow reduction as part of the PSES model technology. As discussed above, the Agency estimated compliance costs for plants which cotreat process wastewater from metal powder operations with wastewater from operations regulated under other nonferrous metals forming subcategories and point source categories whose pretreatment standards are based on the addition of a filter to lime and settle treatment and concluded that these PSES are economically achievable.

The PSES for the magnesium subcategory is based on model technology of flow reduction, lime, and settle treatment (Option 2) rather than flow reduction, lime, settle, and filter (Option 3) as proposed, because as discussed above, the additional cost of filtration does not warrant its inclusion. EPA estimates that 2,100 kg/yr (4600 lb/yr) of toxic pollutants will be removed by Option 2 technology. (The capital and annual costs associated with this subcategory are not provided in order to protect information claimed confidential. These costs are included in the confidential record supporting this regulation.) This PSES is economically achievable. The addition of a filter to PSES would remove only an incremental 0.5 kg/yr (1 lb/yr) of toxic pollutants. Further, both existing indirect dischargers also form aluminum in addition to forming magnesium. Since these plants already have to comply with PSES for aluminum forming which are based on flow reduction, lime and settle treatment by promulgating PSES requirements on the same model technology basis for magnesium forming, these plants will not need to segregate process wastewaters for treatment.

The PSES for the precious metals subcategory is based on model technology of flow reduction, lime, and settle (Option 2), rather than flow reduction, lime, settle, and filter (Option 3) as proposed, because as discussed above, the additional cost of filtration does not warrant its selection. EPA estimates that application of Option 2 technology to existing precious metals forming plants will remove 150 kg/yr (330 lb/yr) of priority pollutants at a cost of $749,000 in capital investment and $324,000 annually above equipment in place (1982 dollars). The costs are economically achievable. The addition of a filter to PSES would remove only 8 kg/yr (18 lb/yr) of priority pollutants (approximately equivalent to 0.3 kg/yr (0.7 lb/yr) per plant). The incremental cost of filters is estimated to be $74,600 in capital investment and $49,200 in annual costs (1982 dollars). As discussed above, the Agency has substantially reduced the degree to which precious metals forming plants will also be regulated by other nonferrous metals forming subcategories or categories (whose pretreatment standards might be based on a different technology basis), by defining a precious metal alloy to be any alloy containing 30 percent or greater by weight of precious metal.

The PSES for the titanium subcategory is based on model technology of flow reduction, lime, and settle (Option 2), rather than flow reduction, lime, settle, and filter (Option 3) as proposed, because as discussed above, the additional cost of filtration does not warrant its selection. EPA estimates that application of Option 2 technology to existing titanium forming plants will remove 262 kg/yr (580 lb/yr) of priority pollutants at a cost of $757,000 in capital investment and $348,000 annually, above equipment in place (1982 dollars). The addition of a filter to PSES would remove only an incremental 8 kg/yr (18 lb/yr) of priority pollutants which is approximately equivalent to 0.4 kg/yr (0.9 lb/yr) per plant. The incremental costs of filters is estimated to be $54, 400 in capital investment, and $33,400 in annual costs (1982 dollars). As discussed above, the Agency costed treatment for plants which cotreat process wastewaters from titanium forming operations with wastewater from operations regulated under other nonferrous metals forming subcategories and point source categories whose pretreatment standards are based on the addition of a filter to lime and settle treatment and concluded that these PSES are economically achievable.

The PSES for the zirconium-hafnium subcategory is based on model technology of flow reduction, lime and settle (Option 2), rather than flow reduction, lime, settle, and filter (Option 3) as proposed, because as discussed above, the additional cost of filtration does not warrant its selection. EPA estimate that application of Option 2 technology to existing zirconium-hafnium forming indirect dischargers will remove 1,090 kg/yr (2400 lb/yr) of total pollutants including 1.3 kg/yr (3 lb/yr) of priority pollutants at a cost of $11,300 in capital investment and $4,000 annually, above equipment in place 1982 dollars). The addition of a filter to PSES would remove only an incremental 2 kg/yr (4.5 lb/yr) of total pollutants and 0.08 kg (0.18 lb/yr) of priority pollutants. The incremental cost of filters is estimated to be $700 in capital investment, and $300 in annual costs (1982 dollars). As discussed above, the Agency costed treatment for plants which cotreat process wastewater from zirconium-hafnium forming operations with wastewater from other nonferrous metals forming subcategories and point source categories whose pretreatment standards are based on the addition of a filter to lime and settle treatment and concluded that these PSES are economically achievable.

The Agency is promulgating PSES for the nickel-cobalt subcategory on the basis of Option 3 for the reasons discussed above under BAT. The Agency is promulgating PSES for the lead-tin-bismuth subcategory on the basis of Option 2 for the reasons discussed above under BAT. The PSES for these subcategories, which are economically achievable, are based on the same model technology as proposed.

In developing these standards, the amount of water used per unit of production was considered for each waste stream. The flow allowances established for PSES are the same as those established for BAT based on the

same flow reduction technologies. The pollutants selected for regulation are the same as those regulated at BAT.

The PSES set forth in this final rule are expressed in terms of mass per unit of production rather than concentration standards in all subcategories. Regulation on the basis of concentration is not appropriate because flow reduction is a significant part of the model pretreatment technology. Mass-based standards are necessary because flow reduction technology which is included in the model technology would not be implemented by concentration based standards.

Implementation of PSES will remove annually an estimated 24,800 kg/yr (54,600 lb/yr) of metal priority pollutants (from estimated current discharges) at a capital cost above equipment in place of $7.5 million and an annual cost of $4 million in 1982 dollars. The Agency has concluded that PSES is economically achievable.

The Agency has considered the time for compliance for PSES. Few of the indirect discharge nonferrous metals forming plants have installed and are properly operating the treatment technology for PSES. Many plants in this and other industries will be installing the treatment equipment suggested as model technologies for this regulation and this may result in delays in engineering, ordering, installing, and operating this equipment. For these reasons, the Agency has decided to establish the PSES compliance date for all facilities at three years after promulgation of this regulation.

PSNS. The Agency is promulgating PSNS for all subcategories to assure that the identified flow reduction and end-of-pipe technologies are considered in new plant designs. We are also issuing PSNS for the zinc forming and uranium forming subcategories for which BAT and NSPS, but not PSES, are established.

The technology basis for the PSNS is identical to NSPS. The flow allowances are the same as NSPS and the pollutants regulated for PSNS are the same as those for PSES. As discussed under PSES, pass through of the regulated pollutants will occur without adequate pretreatment and, therefore, pretreatment standards are required. We know of no economically feasible, demonstrated technology that removes significantly more pollutants than the technologies selected. The subcategories which have more stringent requirements for new sources than for existing sources are magnesium, refractory metals, zinc, and metal powders. We have evaluated the cost associated with PSNS for the magnesium and metal powders subcategories as discussed above, and find that these costs will not pose a barrier to entry by new sources in either of these subcategories. PSNS for the refractory metals subcategory is based on the model technology of flow reduction, lime, settle, and filter. The addition of a filter increases the annual cost of wastewater pollution control for existing sources by 15 percent. However, a new source will be able to design the treatment system to handle the new source flow without the expense of retrofitting flow reduction and treatment equipment into the facility. The cost of a filter for new sources is expected to be only 0.05 percent of estimated revenues for a new source. Therefore, the Agency does not expect PSNS to pose a barrier to entry for new sources. For the remaining seven subcategories, the limitations and standards for existing and new sources, respectively, are based on the same model technology. Therefore, we do not expect PSNS to pose a barrier to entry for new sources in these subcategories.

BCT. The Agency is not promulgating BCT effluent limitations guidelines at this time although BCT limitations were proposed. EPA will issue BCT effluent limitations guidelines after the BCT methodology has been finalized. In the interim, permit writers should establish BCT discharge allowances for the conventional pollutants on the basis of best professional judgment.

VI. Economic Considerations

A. Analysis and Reports

EPA's economic impact assessment is set forth in *Economic Impact Analysis of Effluent Limitations and Standards for the Nonferrous Metals Forming and Metal Powders Industry.* This report presents the required investment and annual compliance costs for the industry as a whole and for each subcategory covered by the regulation unless confidential. The report also assesses the probable economic impact of these compliance costs in terms of price changes, production changes, profitability changes, plant closures, employment effects, local community impacts, balance of trade effects, and industry structure changes.

EPA has also conducted an analysis of the incremental removal cost per pound-equivalent for each of the technology-based options for each subcategory. Pound-equivalents are calculated by multiplying the number of pounds of pollutant discharged by a weighting factor for that pollutant. The weighting factor is equal to the water quality criterion for a standard pollutant (copper), divided by the water quality criterion for the pollutant being evaluated. The use of pound-equivalents gives relatively more weight to removal of more toxic pollutants. Thus, for a given expenditure, the cost per pound-equivalent removed would be lower when a highly toxic pollutant is removed. This analysis is included in the record of this rulemaking, and is entitled *Cost-Effectiveness Analysis of Effluent Limitations and Standards for the Nonferrous Metals Forming and Metal Powders Industry.*

B. Costs and Economic Impacts

EPA has identified 334 plants that perform nonferrous metals forming operations. Of these 334 plants, 176 do not discharge process wastewater, 37 are direct dischargers, and 121 are indirect dischargers. Total investment cost to achieve BAT and PSES is estimated to be $14.3 million and annual cost is estimated to be $8.9 million beyond current costs of waste treatment. These costs are expressed in first quarter 1985 dollars. The annualized costs include depreciation and interest.

The costs of implementing the regulation were estimated on a plant-by-plant basis for 149 discharging plants, based on information on processes carried out in the plant, production rates, treatment-in-place, and model treatment technology. For the purposes of the economic impact analysis, the Agency estimated costs for cotreatment of nonferrous metals forming process wastewater flow. There are 71 discharging plants in the nonferrous metals forming category which also discharge process wastewater which is covered by another point source category regulation. The Agency first estimated the cost for a treatment system large enough to handle the entire process wastewater flow of each such plant. Then, the cost attributable to the treatment of nonferrous metals forming wastewater was apportioned on the basis of the fraction of the total flow generated by nonferrous forming operations. These costs for the 149 nonferrous metals forming plants were then extrapolated to estimate the compliance costs for an additional nine plants for which detailed information was not available.

The industry is subcategorized by the type of metal produced. The economic impact assessment began with a microeconomic model which projects the price and output behavior of each industry subcategory. The model was used, in conjunction with plant compliance cost estimates, to determine after-compliance price and production

levels for each industry subcategory and for each regulatory option.

A financial profile was developed for each of the plants based on average financial ratios for the industry subcategories in which the plant competes. The primary variables of interest in estimating the potential economic impacts of the regulation on individual plants were profitability, as measured by the after-compliance net present value (NPV); and the ability of individual plants to raise capital, as measured by the after-compliance fixed charge coverage ratio. The plant NPV represents the excess of the discounted value (i.e., present value) of the projected cash flows from operating the plant over the present value of the cash flows generated by liquidating the plant and investing the proceeds in an alternative investment. The fixed charge coverage ratio is defined as earnings before interest and taxes over interest payments.

Given the plant-specific compliance cost estimates, the subcategory-specific financial ratios, and other factors, the potential effect on industrial plants in terms of closures was projected. If a plant generates process wastewater which is regulated by more than one nonferrous metals forming subcategory with different model end-of-pipe treatment requirements, the Agency considered the potential economic impact onto the plant as a whole for each model technology option considered. The Agency recognizes that these plants may be able to comply with their permit requirements using a less costly treatment system than treatment system which will treat all process wastewater to meet the most stringent limitations, however, we have evaluated the economic impacts on the basis of using the more costly technology for all wastewaters.

Price increases resulting from the regulation are expected to be small, ranging from 0.1 percent for the lead-tin-bismuth forming subcategory to 1.9 percent for the uranium forming subcategory, and averaging 0.2 percent over the category. Two potential plant closures (both indirect dischargers) are projected as a result of the regulations EPA is promulgating; these plants form nickel, titanium, and zirconium products. The total production loss for these two plants would be in the range of 700 thousand pounds per year. The closure of these two nonferrous metals forming facilities would affect about 56 jobs. The Agency does not expect any disproportionate impact on any specific group of plants covered by this regulation. Community, industry structure, and balance of trade effects would be insignificant.

BPT: Thirty-seven plants are direct dischargers. For the purpose of estimating the cost of the regulation and evaluating the economic impacts, it was assumed that plants will install the least expensive treatment to meet the requirements of BPT. For many plants, the cost of in-process controls to reduce flows, plus the cost of end-of-pipe treatment for this reduced flow, is less than the cost of treating the larger BPT regulatory flow. Where this is the case, it was assumed that the lower costs would be incurred to meet the BPT limits and no incremental cost would be incurred in meeting the option employing flow reduction. Because of this assumption, the costs presented here are different than those shown in the technical sections of the preamble.

The BPT regulation is projected to cost $4.7 million in investment costs and $3.9 million in annual costs for these plants, including depreciation and interest (first quarter 1985 dollars). No plant closures or job losses are anticipated as a result of the BPT regulation. Price increases over current prices would range from less than 0.1 percent to 1.8 percent, averaging 0.16 percent over the category.

BAT: The BAT regulation will also affect the 37 direct dischargers in the nonferrous metals forming industry. Total investment costs above current treatment in-place are estimated to be $5.5 million, with annual costs including depreciation and interest of $4.3 million in first quarter 1985 dollars. The incremental costs over BPT are estimated to be $0.8 million in investment costs and $0.4 million in annual costs. There are no plant closures or job losses projected as a result of the BAT regulation. Price increases over current prices would range from 0.1 percent to 1.9 percent, averaging 0.2 percent over the category, about the same as the BPT increases. Thus, EPA has determined that the BAT regulation is economically achievable.

PSES: EPA identified 121 plants as indirect dischargers. The pollution control technology for the pretreatment standards is the same as the BAT treatment technology for all subcategories, with three exceptions. In the uranium forming subcategory, no PSES is being promulgated because there are no existing indirect dischargers. In the refractory metals subcategory, filters are not included in the PSES model technology, as they were for BAT, for the reasons stated in Section V above. In the case of zinc, the Agency is excluding the indirect dischargers from national PSES because the larger one of two indirect dischargers in this subcategory, which does not form any other metal covered by this regulation, is expected to close at each of the technology options considered. As explained in Section V above, EPA has determined that imposing any categorical standards on the zinc forming subcategory would result in a disproportionate impact on this segment of the industry. Therefore, PSES for the zinc forming subcategory is not economically achievable.

Two potential closures were identified in other subcategories. The major metal formed by each of these is titanium; in addition, one has some production in the zirconium-hafnium forming subcategory and the other has some production in the nickel-cobalt forming subcategory. In these cases, exclusions similar to those in zinc forming are not appropriate because smaller plants in these subcategories will be able to achieve the promulgated PSES with no significant economic impact. Size cutoffs adequate to exclude the plants projected as possible closures would leave many plants unregulated. This is unacceptable where costs are economically achievable for the subcategories as a whole.

With the PSES exclusion for the zinc forming subcategory, investment costs for the remaining 120 indirect dischargers are estimated to be $8.8 million, and annualized costs including depreciation and interests are expected to be $4.6 million, in first quarter 1985 dollars. Price increases in the various subcategories would range from 0.1 to 0.3 percent. In terms of unemployment, the two potential closures associated with PSES would affect approximately 56 employees. Total production loss in the titanium subcategory production would be less than one percent. Since the production and employment of these plants represent a very small part of the subcategory or category totals, the Agency has determined that PSES is economically achievable.

NSPS-PSNS: The model technologies for the effluent standards for new sources are Option 2 (flow reduction, lime, and settle) for direct and indirect dischargers in the lead-tin-bismuth, precious metals, titanium, zirconium-hafnium, and metal powders subcategories and Option 3 (flow reduction, lime, settle, and filter) for the remaining five subcategories. In some cases, the new source standards are more stringent than those for existing sources. However, new sources might incur lower costs than existing sources because they would not incur expenses

associated with retrofitting flow reduction technology and would have the opportunity to install a treatment system which is designed to handle the reduced flows. In general, the incremental costs of treatment for new sources over those for existing sources are sufficiently small that they are not expected to constitute a barrier to entry.

C. Executive Order 12291

Executive Order 12291 requires EPA and other agencies to perform regulatory impact analyses of major regulations. Major rules are those which impose a cost on the economy of $100 million a year or more or meet certain other economic impact criteria. This regulation is not a major rule because its annualized cost, as discussed above, is significantly less than $100 million and it meets none of the other criteria specified in Section 1(b) of the Executive Order. Therefore, a formal Regulatory Impact Analysis is not required.

D. Regulatory Flexibility Analysis

Public Law 96-354 requires EPA to prepare a Regulatory Flexibility Analysis for all proposed regulations that have a significant impact on a substantial number of small entities.

EPA has examined the impacts of this regulation on small business. For this purpose, small plants were defined as those forming less than 1.0 million pounds/year of nonferrous metals. According to this criterion, 55 percent of the dischargers (66 out of 119 dischargers who supplied sufficient data for this analysis) were classified as small. The economic impact analysis cited above evaluates potential impacts on small business from the standpoint of projected closures and annual compliance costs compared to revenues. The analysis concludes that this regulation will not result in a significant adverse impact on a substantial number of small businesses, and I hereby certify to this effect for the purpose of 50 U.S.C. 605(b). While this conclusion obviates the need for a formal Regulatory Flexibility Analysis, the small business analysis is included in the economic impact analysis report and supports the conclusion that the regulation is economically achievable.

E. SBA Loans

The Agency is continuing to encourage small plants to use Small Business Administration (SBA) financing as needed for pollution control equipment. The three basic programs are: (1) The Pollution Control Bond Program, (2) the Section 503 Program, and (3) the Regular Business Loan Program. Eligibility for SBA programs varies by industry. For applicants covered by this regulation, the programs require that a company be independently owned and operated and not dominant in its field and, depending on the subcategory, have a maximum workforce ranging from 500 to 1,000 employees, and maximum annual sales revenue ranging from $275,000 to $22 million.

For further information and specifics on the Pollution Control Bond Program contact: U.S. Small Business Administration, Office of Pollution Control Financing, 4040 North Fairfax Drive, Rosslyn, Virginia 22203, (703) 235-2902.

The section 503 program, as amended in July 1980, allows long-term loans to small and medium sized businesses. These loans are made by SBA-approved local development companies. These companies are authorized to issue Government-backed debentures that are bought by the Federal Financing Bank, an arm of the U.S. Treasury.

Through SBA's Regular Business Loan Program, loans are made available by commercial banks and are guaranteed by the SBA. This program has interest rates equivalent to market rates.

For additional information on the Regular Business Loan and Section 503 Programs, persons should contact their district or local SBA office. The coordinator at EPA Headquarters is Ms. Frances Desselle who may be reached at (202) 382-5373.

VII. Nonwater Quality Aspects of Pollution Control

The elimination or reduction of one form of pollution may aggravate other environmental problems. Therefore, Sections 304(b) and 306 of the Act require EPA to consider the nonwater quality environmental impacts (including energy requirements) of certain regulations. In compliance with these provisions, EPA has considered the effect of this regulation on air pollution, solid waste generation, water scarcity, and energy consumption. The various EPA offices responsible for these programs have reviewed this regulation and concur with its provisions and the assessment of anticipated effects, described below. While it is difficult to balance pollution problems against each other and against energy use, EPA believes this regulation will best serve often competing national goals.

The following are the anticipated nonwater quality environmental impacts (including energy requirements) associated with the regulation. The Administrator has determined that the impacts identified below are justified by the benefits associated with compliance with the limitations and standards.

A. Air Pollution

Imposition of BPT, BAT, NSPS, PSES, and PSNS will not create any substantial air pollution problems, because the wastewater treatment technologies required to meet these limitations and standards do not cause air pollution.

B. Solid Waste

EPA estimates that nonferrous metals forming facilities generated 3623 kkg (3985 tons) of solid wastes (wet basis) in 1981 as a result of wastewater treatment-in-place. These wastes were composed of treatment system sludges containing toxic metals, including antimony, cadmium, chromium, copper, lead, nickel, and zinc.

EPA estimates that the BPT requirements will generate an additional 1022 kkg (1124 tons) per year of solid wastes over that which is currently being generated by the nonferrous metals forming category. The BAT requirements will increase these wastes by approximately 288 kkg (317 tons) per year beyond BPT levels. In addition, PSES will increase these wastes by approximately 3886 kkg (4275 tons) per year beyond current levels. New nonferrous metals forming plants subject to PSNS or NSPS will also generate treatment system sludges. These sludges will necessarily contain additional quantities (and concentrations) of toxic metal pollutants.

If these wastes are hazardous, as defined by RCRA, they will come within the scope of RCRA's "cradle to grave" hazardous waste management program, requiring regulation from the point of generation to the point of final disposition. EPA's generator standards require generators of hazardous wastes to meet containerization, labeling, recordkeeping, and reporting requirements. In addition, if plants dispose of hazardous wastes off-site, they must prepare a manifest which tracks the movement of the wastes from the generator's premises to a permitted off-site treatment, storage, or disposal facility. See 40 CFR 262.20. The transporter regulations require transporters of hazardous wastes to comply with the manifest system to assure that the wastes are delivered to a permitted facility. See 40 CFR 263.20. Finally, RCRA regulations establish standards for hazardous waste treatment, storage, and disposal facilities allowed to receive such wastes. See 40 CFR Parts 264 and 265.

Even if these wastes are not identified as hazardous, they still must be disposed of in a manner that will not violate the open dumping prohibition in Section 4005 of RCRA. The Agency has calculated as part of the costs for wastewater treatment the cost of hauling and disposing of additional waste generated as a result of these requirements. For more details, see Section VIII of the Development Document.

Wastes generated by nonferrous metal formers are subject to regulation under Subtitle C of the Resource Conservation and Recovery Act (RCRA) if they are hazardous. However, the Agency examined solid wastes similar to those that would be generated at nonferrous metals forming plants by the suggested treatment technologies (that is, the sludges from lime and settle treatment) and believes that in most instances they will not be hazardous wastes under Section 3001 of RCRA. Only wastewater treatment sludge generated by cyanide precipitation technology is likely to be hazardous under the regulations implementing Subtitle C of RCRA; such wastes may exhibit extraction procedure (EP) toxicity. If so, these wastes must be disposed of as a hazardous waste. Wastewater treatment sludge from cyanide precipitation of a process waste stream is generated separately from lime and settle sludge and may be disposed of separately. We estimate that nonferrous metals forming plants may generate an estimated 230 kkg of potentially hazardous sludge. The total annual disposal cost for this sludge is estimated to be $77,000.

None of the other wastewater treatment sludges are specifically listed as hazardous, nor are they likely to exhibit one of the four characteristics of hazardous waste, (see 40 CFR Part 261), based on the recommended technology of lime and settle receded where necessary by hexavalent chromium reduction, chemical emulsion breaking, and ammonia stripping. By the addition of a small excess of lime during treatment, similar sludges, specifically toxic metal-bearing sludges generated by other industries such as the iron and steel industry, passed the extraction procedure (EP) toxicity test by a substantial margin and have been delisted (i.e., they are no longer specifically listed as hazardous) as a result. See, e.g., 45 FR 78544 (November 25, 1980); 46 FR 40154 (August 6, 1981); and 47 FR 52668 (November 22, 1982); and 40 CFR 261.24. See 40 CFR 261.24. Thus, the Agency believes that treatment sludges from nonferrous metals forming wastewaters will similarly not be EP toxic if the recommended technology is applied.

Although it is the Agency's view that solid wastes generated by the treatment technologies which serve as the basis for these guidelines will not be hazardous, generators of these wastes must test the waste to determine if the wastes meet any of the characteristics of hazardous waste (see 40 CFR 262.10). The Agency also may list these wastes as hazardous under 40 CFR 261.11.

The Agency is not providing any allowance for discharge of spent solvents from the solvent degreasing operations at nonferrous metals forming plants because these wastes are not wastewaters. Disposal of the spent solvent may be subject to regulation under RCRA. However, no plant is the nonferrous metals forming industry is known to currently discharge the spent solvents. Therefore, the cost of disposal of the spent solvents has not been included in estimating the incremental cost of this regulation; all plants which use solvent degreasing are already incurring those costs.

The Agency is establishing a no discharge requirement for tube-reducing spent lubricant because, based on analytical data for that wastestream at the one plant sampled, that wastestream contains treatable levels of N-nitrosodiphenylamine. Therefore, this waste stream must be disposed of as a solid waste and may be hazardous. The Agency has estimated the volume of this sludge to be 80 kkg/yr and the cost of disposal as a hazardous waste to be $20,300 per year (1982 dollars).

C. Consumptive Water Loss

Treatment and control technologies that require extensive recycling and reuse of water may require cooling mechanisms. Evaporative cooling mechanisms can cause water loss and contribute to water scarcity problems—a primary concern in arid and semi-arid regions. While this regulation assumes water reuse, the overall amount of reuse through evaporative cooling mechanisms is low and the quantity of water involved is not significant. In addition, most nonferrous metals forming plants are located east of the Mississippi where water scarcity is not a problem. We conclude that the consumptive water loss is insignificant and that the pollution reduction benefits of recycle technologies outweigh their impact on consumptive water loss.

D. Energy Requirements

EPA estimates that the achievement of proposed BPT effluent limitations will result in a net increase in electrical energy consumption of approximately 4.0 million kilowatt-hours per year. The BAT technology should not substantially increase the energy requirements over the requirements of BPT because the reduced pumping requirements, the agitation requirement for mixing wastewater, and other volume-related energy requirements associated with reducing process wastewater discharge to treatment will offset the additional pumping requirements for filtration. Therefore, the BAT limitations are assumed to require an equivalent energy consumption to that of the BPT limitations. To achieve the BPT and BAT effluent limitations, a typical direct discharger will increase total energy consumption by 110,000 kilowatt-hours per year.

The Agency estimates that PSES will result in a net increase in electrical energy consumption of approximately 6.4 million kilowatt-hours per year. To achieve PSES, a typical existing indirect discharger will increase energy consumption by 50,000 kilowatt-hours per year.

New source performance standards for direct and indirect dischargers in the nonferrous metals forming category will not significantly add to the total energy consumption of the category. This observation is based on the fact that BAT and PSES will increase energy consumption by 4.0 million and 6.4 million kilowatt-hours, respectively, and new source standards are generally equivalent to BAT and PSES.

VIII. Pollutants and Subcategories Not Regulated

The Settlement Agreement in *NRDC* v. *Ruckelshaus, supra,* contains provisions authorizing the exclusion from regulation, in certain instances, of toxic pollutants and industry subcategories. These provisions have been rewritten in a Revised Settlement Agreement which was approved by the District Court for the District of Columbia on March 9, 1979. See *NRDC* v. *Costle,* 12 ERC 1833 (D.D.C. 1979).

A. Exclusion of Pollutants

The Agency has deleted the following three pollutants from the toxic pollutant list: (49) trichlorofluoromethane and (50) dichlorofluoromethane, 46 FR 79692 (January 8, 1981); and (17) bis(chloromethyl)ether, 46 FR 10723 (February 4, 1981).

Paragraph 8(a)(iii) of the Settlement Agreement allows the Administrator to exclude from regulation toxic pollutants not detectable by Section 304(h) analytical methods or other state-of-the-art methods. The toxic pollutants not

detected and therefore excluded from regulation are listed in Appendix B to this notice.

Paragraph 8(a)(iii) also allows the Administrator to exclude from regulation toxic pollutants detected in amounts too small to be effectively reduced by technologies known to the Administrator. Appendix C to this notice lists the toxic pollutants in each subcategory which were detected in the effluent in amounts at or below the nominal limit of analytical quantification, which are too small to be effectively reduced by technologies known to the Administrator and which, therefore, are excluded from regulation.

Paragraph 8(a)(iii) also allows the Administrator to exclude from regulation toxic pollutants detectable in the effluent from only a small number of sources within the subcategory because they are uniquely related to those sources. Appendix D to this notice lists for each subcategory the toxic pollutants which were detected in the effluents of only a small number of plants, are uniquely related to those plants, and are not related to the manufacturing processes under study.

As noted above, Paragraph 8(a)(iii) also allows the Administrator to exclude from regulation toxic pollutants present in amounts too small to be effectively reduced by technologies known to the Administrator. Appendix E lists those toxic pollutants which are above the level of analytical quantification but not treatable using technologies considered applicable to the category.

Paragraph 8(a)(iii) also allows the Administrator to exclude from regulation toxic pollutants which will be effectively controlled by the technologies upon which are based other effluent limitations guidelines or pretreatment standards. Appendix F lists those toxic pollutants which will be effectively controlled by other regulated pollutants in BAT and NSPS, PSES, and PSNS, even though they are not specifically regulated.

B. Exclusion of Subcategories

Additionally, Paragraph 8(a)(iv) of the Settlement Agreement authorizes the exclusion of subcategories in which the amount and toxicity of each pollutant in the discharge do not justify developing national regulations. Certain nonferrous metals forming subcategories have no discharging plants and therefore, meet the requirement of Paragraph 8(a)(iv). Appendix G lists the subcategories which were not regulated for this reason.

IX. Public Participation and Response to Major Comments

Industry and government have participated during development of these effluent limitation guidelines and standards. Following the publication of the proposed rule on March 5, 1984 in the **Federal Register**, we provided the development document and the economic impact analysis supporting the proposed regulation to industry, government agencies, and the public on March 7, 1984. The public record supporting this regulation was available for public use on March 5, 1984. The comment period ended on May 4, 1984. A permit writers' workshop open to the public was held on the nonferrous metals forming proposal in Chicago, Illinois on April 10, 1984. On April 24, 1984 in Washington, D.C., a public hearing was held on the proposed pretreatment standards. A notice of data availability and a request for comment was published in the **Federal Register** on February 4, 1985 with the comment period ending on March 6, 1985.

Since proposal, 21 companies have submitted 41 comment letters on the proposed regulation. Comments were received from Inco Alloys International, Inc., Cabot Corporation, Teledyne Allvac, Carpenter Technology Corporation, Piper Industries, Inc., Special Metals Corporation, Englehard Industries Division, Reynolds Aluminum, General Electric Company, Brush Wellman, Inc., Amax, Inc., Dow Chemical, U.S.A., Keystone Carbon Company, Nuclear Metals, Inc., NRC, Inc., Timet, Aerojet Heavy Metals Company, Climax Molybdenum, Division of Amax, Inc., Teledyne Wah Chang, GTE, and the North Shore Sanitary District.

We considered all comments carefully and made appropriate changes in the regulation whenever data and information supported those changes. Six of the major issues raised by the comments are addressed in this section of the preamble. All comments and our detailed response to them are included in a document entitled *Response to Public Comments on Proposed Nonferrous Metals Forming and Metal Powders Effluent Limitations and Standards* which has been placed in the public record for this regulation. The following is a discussion of the Agency's responses to the principal comments.

1. BAT–PSES Model Technology

Comment: In the proposed regulation, the Agency specifically requested comments on the model technology for BAT–PSES. We received comments from two companies that dealt with this issue. A metal powder manufacturer commented in favor of the proposed technology of lime and settle with in-process controls for the metal powders subcategory and against promulgation of BAT–PSES on the basis of flow reduction, lime, settle, and filter. A nickel-cobalt former commented against the proposed BAT–PSES model technology, of flow reduction, lime, settle, and filter and in favor of promulgating BAT–PSES on the basis of flow reduction, lime, and settle for the nickel-cobalt subcategory.

Response: The Agency has reevaluated each of the technology options considered for BAT in terms of cost, economic impact, mass of pollutants removed. This reevaluation has led the Agency to promulgate BAT–PSES limitations on a different model technology than was proposed for six subcategories. The Agency is promulgating BAT–PSES based on the same model technology as was proposed for the remaining four subcategories. The reasons for selecting these technologies are explained in Section V, above.

2. Inadequate Data

Comment: Numerous comments were received on the proposed nonferrous metals forming data base. Several commenters noted that treatment effectiveness data for several nonconventional metal pollutants for which limitations and standards were proposed were inadequate or absent. Other commenters objected to the use of the combined metals data base (CMDB) to establish limitations and standards for certain toxic metal pollutants. Specifically, several nickel-cobalt forming companies commented that the nickel concentration in nickel-cobalt forming wastewater is dissimilar to the concentration of nickel in wastewaters included in the CMDB. Other commenters objected to using the CMDB at all, arguing instead that EPA should base limitations and standards on a subcategory-by-subcategory basis using data derived from waste streams in the nonferrous metals forming category only.

Response: The Agency proposed limitations and standards for several of the nonconventional metal pollutants based on an engineering estimate of the effectiveness of treatment. However, as discussed earlier, this final rule only regulates one nonconventional pollutant: molybdenum. None of the other nonconventional pollutants for which we proposed effluent limitations guidelines and standards are regulated under this final rule. The treatment

effectiveness of molybdenum is derived from data collected at a uranium forming plant. This plant treats its wastewater through iron coprecipitation, lime, and settle treatment.

EPA is promulgating limitations and standards for the priority metal pollutants based on the CMDB treatment effectiveness values. The Agency has evaluated the nonferrous metals forming data in terms of its similarity with the CMDB. Statistical methods were used to compare nonferrous metals forming raw wastewater and treated wastewater values with the raw and treated wastewater values in the CMDB. Overall, the results show that the data from the five categories that make up the CMDB and the data from the nonferrous metals forming category are statistically homogeneous. A comparison of the nonferrous metals forming data with data from each of the categories in the CMDB shows little significant difference among the categories. The few statistical differences that were observed are not substantial and are not an indication that the nonferrous metals forming plants will have difficulty in complying with the CMDB treatment effectiveness concentrations. This comparison is discussed in more detail in Section V of the preamble and Section VII of the Development Document.

Since proposal, the Agency has reevaluated the similarity of nickel-cobalt data with the CMDB. As part of this reevaluation, we have sampled two additional nickel-cobalt forming plants. The results of this revised comparison shows that the concentration of nickel-cobalt forming plants is not significantly different from the nickel value derived from the CMDB. Therefore, the Agency is basing limitations and standards for the pollutant nickel in the nickel-cobalt subcategory based on the CMDB.

3. Selection of Regulated Pollutants

Comment: The Agency received many comments regarding the pollutants selected for regulation at proposal.

(a) *Priority metals and cyanide.* Two commenters questioned the presence of some of the priority pollutants in process wastewater: a powder metal manufacturer questioned the presence of cyanide in process wastewater collected from its facility, and a titanium former argued that wastewaters pollutants.

(b) *Nonconventional metal pollutants.* Several commenters disagreed with the Agency's proposal to regulate various nonconventional metal pollutants. Commenters objected to the indicator pollutant approach; specifically, they objected to regulation of the refractory metals subcategory in which each of the metals formed (columbium, tantalum, tungsten, rhenium, molybdenum, and vanadium) was proposed to be regulated to ensure the removal of other metal pollutants. This commenter also argued that the pollutant molybdenum cannot be removed with lime and settle treatment, and therefore, is a poor indicator of treatment system performance.

One company commented that they form several different metals and are covered by three different nonferrous metals forming subcategories, as well as two other point source categories. This company argued that the regulation of one significant metal (e.g., a nonconventional metal pollutant) rather than only "environmentally significant" metals (e.g., chromium, lead, nickel and zinc) would result in final regulations that would be difficult to meet.

Response: (a) Priority metals and cyanide. The Agency is promulgating BAT-PSES requirements for the priority metal pollutants for which requirements were proposed. In post-proposal sampling, the Agency has confirmed the presence of priority metal pollutants (lead and zinc) in titanium forming wastewater. We are also promulgating limits for cyanide in the metal powders subcategory, since EPA has no reason to question the analytical results that indicate the presence of cyanide in treatable quantities. The Agency has found cyanide in other unexpected sources, and has confirmed its presence in these sources on more than one occasion.

(b) *Nonconventional metal pollutants.* The Agency is not promulgating requirements for most of the nonconventional metal pollutants for which it proposed limits, to alleviate problems that could arise from plants that cotreat wastewaters from different categories or subcategories. However, the Agency is providing guidance and information on the treatment effectiveness and mass allowances for these nonconventional metal pollutants in the technical Development Document.

The Agency is establishing limitations and standards for one nonconventional metal pollutant, molybdenum, because removal of this pollutant requires more extensive treatment than lime and settle. As explained earlier, molybdenum is removed by coprecipitation with iron and is being regulated in the refractory metals and uranium forming subcategories. The pollutant molybdenum is one of the metals formed in the refractory metals subcategory, and without specific controls for this pollutant, our data indicated that it will not be adequately removed. Uranium is frequently alloyed with molybdenum, thus, molybdenum is present at treatable concentrations in raw wastewater generated by uranium forming. Therefore, Agency is also controlling molybdenum in uranium forming.

4. Uranium

Comment: One uranium forming company commented on the proposed effluent requirements for the pollutant uranium. In addition, the Department of Energy (DOE) submitted a comment on the proposed regulation for nonferrous metals manufacturing Phase II questioning the Agency's authority to regulate the pollutant uranium.

Response: The Agency has considered DOE's comments and the fact that the Nuclear Regulatory Commission presently classifies uranium in any form, including depleted uranium, as a "source material" under the Atomic Energy Act. In light of the Supreme Court's holding in *Train* v. *Colorado Public Interest Research Group,* 426 U.S. 1 (1976) that "source," "special nuclear," and "by-product" materials are not pollutants within the meaning of the Clean Water Act, EPA has decided not to finalize effluent limitations guidelines for uranium under the Clean Water Act at this time. Since proposal, EPA has sampled a uranium forming plant and collected additional data on the raw wastewater characteristics of uranium forming waste streams and the effectiveness of lime and settle treatment for removal of the pollutant uranium. Revised treatment effectiveness concentrations for the pollutant uranium were published in the **Federal Register** notice of new data (50 FR 4872, February 4, 1985). Discharge allowances for uranium based on these data are included in Development Document as guidance.

5. Beryllium Forming

Comment: EPA received comments from one company, Brush Wellman, on the proposed regulation for beryllium forming. The commenter manufactures and forms pure beryllium and casts and forms beryllium copper alloys and other beryllium alloys at one facility. Brush objected to the number of regulations with which this facility would have to comply (it would be covered by four point source category regulations:

Nonferrous metals manufacturing, metal molding and casting (foundries), nonferrous metals forming, and copper forming), because each regulation could establish effluent limitations based on different model technologies or regulate different pollutants which would

severely limit this facility's flexibility regarding wastewater treatment.

Response: In settlement of litigation with Brush Wellman over the copper forming regulation, the Agency agreed to propose to amend the copper forming regulation to create a new subcategory that would apply to the forming of beryllium copper alloys. The proposed amendment was published in the **Federal Register** on June 24, 1985 (50 FR 26128). Brush Wellman presented data and information indicating that beryllium imparts unique properties to the beryllium copper alloy which therefore requires different processing than other copper alloys. These unique properties are also characteristic of formed pure beryllium and other formed beryllium alloys, for which EPA had proposed to regulate as part of the nonferrous metals forming category. Furthermore, most beryllium copper forming plants also form pure beryllium and other beryllium alloys. Since pure beryllium and beryllium alloys (including beryllium copper) have similar characteristics, are subject to the same type of forming processess, and tend to be formed in the same plants, EPA has decided that the forming operations should all be combined under one regulation.

Therefore, the Agency is not promulgating limits and standards for beryllium forming or any beryllium alloy forming (defined as any alloy containing 0.1 percent or greater beryllium by weight) as part of this nonferrous metals forming regulation. Instead we will issue limitations and standards for the forming of beryllium and all beryllium alloys, including beryllium copper at the same time.

6. Estimates of Compliance Costs

Comment: Several comments were received concerning the estimated compliance cost estimates for the proposed regulation. Several commenters argued that the Agency substantially underestimated the cost of compliance with the proposed regulation. One company submitted a detailed estimate of the cost required to install a treatment system for one of their nickel forming plants which was prepared for them by an engineering firm.

Response: Since proposal, the Agency has reevaluated the estimate of compliance costs for the nonferrous metals forming category on a plant-by-plant basis. These revised costs were made publicly available in the **Federal Register** notice of new data (50 FR 4872, February 4, 1985).

The Agency re-estimated costs for nonferrous metals forming plants by looking at the entire plant flow, not just the nonferrous metals forming portion of the wastewater flow. There are 71 discharging plants in the nonferrous metals forming category which also discharge process wastewater which is covered by another point source category regulation. The Agency estimated the cost for a treatment system which is adequate to handle the plant's entire process wastewater flow, and to meet each regulation that applies. Then the cost attributable to the nonferrous metals forming wastewater was apportioned on the basis of flow. If a plant generates process wastewater which is regulated by more than one nonferrous metals forming subcategory with different model end-of-pipe treatment requirements, the Agency considered the potential economic impact to the plant as a whole for each model technology option considered. The Agency recognizes that these plants may be able to comply with their permit requirements using a less costly treatment system than treatment system which will treat all process wastewater to meet the most stringent limitations, and standards; however, we have evaluated the economic impacts on the basis of using the most costly technology for all wastewaters.

The Agency has made a thorough evaluation of the cost estimate of a treatment system for the commenter's nickel forming facility. The Agency's estimate of compliance costs for this facility is substantially less than the estimate provided by this company's consultant. This consultant's treatment system design includes extensive back-up equipment in the event of a equipment failure, and a large retention pond to hold water in the event that there is a malfunction in the treatment system or the manufacturing process. In addition, the consultant designed and costed a treatment system to treat the entire wastewater flow currently discharged from this plant, including nonprocess wastewater (with the exception of sanitary water).

EPA's estimate of compliance costs for the nonferrous metals forming category is derived by using a model treatment system applied to the process wastewater flow at a rate which corresponds to the BPT or BAT-PSES regulatory flow for the plant. The cost model estimates costs for the complete model treatment system, then subtracts the cost for equipment already in place at the plant. Unlike the consultant's approach, the Agency's cost model does not include such extensive back-up equipment should there be a treatment system or process malfunction, nor is non-process wastewater, such as noncontact cooling water, included in the wastewater flow to be treated. However, an estimate of the cost for pipes and pumps needed to segregate this nonprocess water is included in the model. We did estimate costs on a total plant basis including costs to treat process wastewater from other categories when appropriate; the nonferrous metals forming costs were then estimated by apportioning the costs on the basis of flow. A detailed evaluation of the consultant's costing methodology appears in the response to comments document.

X. Best Management Practices (BMP)

Section 304(e) of the Clean Water Act gives the Administrator discretionary authority to prescribe "best management practices" (BMP). EPA is not proposing specific BMPs for the nonferrous met forming category at this time.

XI. Upset and Bypass Provisions

A recurring issue of concern has been whether industry limitations and standards should include provisions that authorize noncompliance during periods of "upset" or "bypass." An upset, sometimes called an "excursion," is unintentional noncompliance beyond the reasonable control of the permittee. It has been argued that an upset provision in EPA's effluent limitations guidelines is necessary because such upsets will inevitably occur, even if the control equipment is properly operated. Because technology-based limitations can require only what technology can achieve, many claim that liability for upsets is improper. When confronted with this issue, courts have been divided on whether an explicit upset or excursion exemption is necessary or whether upset or excursion incidents may be handled through EPA's enforcement discretion. Compare *Marathon Oil Co.* v. *EPA*, 564 F.2d 1253 (9th Cir. 1977) with *Weyerhaeuser* v. *Costle, supra* and *Corn Refiners Association, et al.* v. *Costle*, No. 78-1069 (8th Cir. April 2, 1979). See also *American Petroleum Institute* v. *EPA*, 540 F.2d 1023 (10th Cir. 1976); *CPC International, Inc.* v. *Train*, 540 F.2d 1320 (8th Cir. 1976); and *FMC Corp.* v. *Train*, 539 F.2d 973 (4th Cir. 1976).

An upset is an unintentional episode during which effluent limits are exceeded; a bypass, however, is an act of intentional noncompliance during which waste treatment facilities are circumvented in emergency situations. EPA has, in the past, included bypass provisions in NPDES permits.

EPA has determined that both upset and bypass provisions should be included in NPDES permits and has promulgated permit regulations that include upset and bypass permit provisions. See 40 CFR 122.41. The upset provision establishes an upset as an affirmative defense to prosecution for violation of technology-based effluent limitations. The bypass provision authorizes bypassing to prevent loss of life, personal injury, or severe property damage. Consequently, although permittees in the nonferrous metals forming industry will be entitled to upset and bypass provisions in NPDES permits, this regulation does not address these issues. Upset provisions are also contained in the General Pretreatment regulation, 40 CFR Parts 125 and 403.

XII. Variances and Modifications

Upon the promulgation of this final regulation, the appropriate effluent limitations must be applied in all Federal and State NPDES permits thereafter issued to nonferrous metals forming direct dischargers. In addition, upon promulgation, the pretreatment standards are directly applicable to indirect dischargers.

For the BPT effluent limitations, the only exception to the binding limitations is EPA's "fundamentally different factors" variance. See *E. I. duPont de Nemours and Co.* v. *Train*, 430 U.S. 112 (1977); *Weyerhaeuser Co.* v. *Costle, supra*. This variance recognizes factors concerning a particular discharger that are fundamentally different from the factors considered in this rulemaking. However, the economic ability of the individual operator to meet the compliance cost for BPT standards is not a consideration for granting a variance. See *National Crushed Stone Association* v. *EPA*, 449 U.S. 64 (1980). Although this variance clause was originally set forth in EPA's 1973–1976 industry regulations, it is now included in the general NPDES regulations and is cross-referenced in this regulation, as well as the other specific industry regulations. See the general NPDES regulations at 40 CFR Part 125, Subpart D.

The BAT limitations in this regulation also are subject to EPA's "fundamentally different factors" variance. In addition, BAT limitations for nonconventional pollutants are subject to modification under Sections 301(c) and 301(g) of the Act. These statutory modifications do not apply to toxic or conventional pollutants. According to Section 301(j)(1)(B), applications for these modifications must be filed within 270 days after promulgation of final effluent limitations guidelines. See 40 CFR 122.21(1)(2).

The economic modification section of the Act (Section 301(c)) gives the Administrator authority to modify BAT requirements for nonconventional pollutants for dischargers who file a permit application after July 1, 1978, upon a showing that such modified requirements will: (1) Represent the maximum use of technology within the economic capability of the owner or operator, and (2) result in reasonable further progress toward the elimination of the discharge of pollutants. The environmental modification (Section 301(g)) allows the Administrator, with the concurrence of the State, to modify BAT limitations for nonconventional pollutants from any point source upon a showing by the owner or operator of such point source satisfactory to the Administrator that:

(a) Such modified requirements will result at a minimum in compliance with BPT limitations or any more stringent limitations necessary to meet water quality standards;

(b) Such modified requirements will not result in any additional requirements on any other point or nonpoint source; and

(c) Such modification will not interfere with the attainment or maintenance of that water quality which shall assure protection of public water supplies, and the protection and propagation of a balanced population of shellfish, fish, and wildlife, and allow recreational activities, in and on the water, and such modification will not result in the discharge of pollutants in quantities which may reasonably be anticipated to pose an unacceptable risk to human health or the environment because of bioaccumulation, persistence in the environment, acute toxicity, chronic toxicity (including carcinogenicity, mutagenicity, or teratogenicity), or synergist propensities.

Section 301(j)(1)(B) of the Act requires that applications for modifications under Section 301 (c) or (g) be filed within 270 days after the promulgation of an applicable effluent limitations guideline regulation. Initial applications must be filed with the Regional Administrator and, in States with approved NPDES programs, a copy must be sent to the Director of the State program. Initial applications to comply with Section 301(j) must include the name of the permittee, the permit and outfall number, the applicable effluent limitations guideline regulation, and whether the permittee is applying for a 301(c) or 301(g) modification or both.

Indirect dischargers subject to PSES and PSNS are eligible for credits for pollutants removed by a POTW. See 40 CFR 403.7.

New sources subject to NSPS and PSNS are not eligible for any other statutory or regulatory modifications. See *E. I. duPont de Nemours & Co.* v. *Train, supra*.

Indirect dischargers subject to PSES are eligible for the "fundamentally different factors" variance. See 40 CFR 403.13. On September 20, 1983, the United States Court of Appeals for the Third Circuit held that "FDF variances for toxic pollutants are forbidden by the Act," and remanded Section 403.13 to EPA. *NAMF et al.* v. *EPA*, 719 F.2d 624 (3rd Cir. 1983). In response to this decision, EPA amended Section 403.13(b)(2) to suspend the availability of FDF variances for toxic pollutants covered by categorical pretreatment standards. See 49 FR 5131 (February 10, 1984). In addition, EPA sought review of this portion of the Third Circuit's decision. On February 27, 1985, the Supreme Court reversed the Third Court of Appeals and held that FDF variances for toxic pollutants are not prohibited by the Clean Water Act. *Chemical Manufacturers Assoc.* v. *Natural Resources Defense Council, 105.* S Ct. 1102 (1985). Accordingly, indirect dischargers covered by categorical pretreatment standards for existing sources may be eligible for an FDF variance. Any interested person should refer to 40 CFR 403.13 for the procedures and deadline for applying for this variance.

XIII. Implementation of Limitations and Standards

A. Relationship to NPDES Permits

The BPT and BAT limitations and NSPS in this regulation will be applied to individual nonferrous metals forming plants through NPDES permits issued by EPA or approved State agencies under Section 402 of the Act. As discussed in the preceding section of this preamble, these limitations must be applied in all Federal and State NPDES permits except to the extent that variances and modifications are expressly authorized. Other aspects of the interaction between these limitations and NPDES permits are discussed below.

One issue that warrants consideration is the effect of this regulation on the powers of NPDES permit-issuing authorities. EPA has developed the limitations and standards in this regulation to cover the typical facility in each subcategory of this point source category. However, the promulgation of

this regulation will not restrict the power of any permitting authority to act in any manner consistent with law or these or any other EPA regulations, guidelines, or policy. For example, even if this regulation does not control a particular pollutant, the permit issuer may still limit the pollutant on a case-by-case basis when such actions are necessary to carry out the purposes of the Act. In addition, to the extent that State water quality standards or other provisions of State or Federal law require limits on pollutants not covered by this regulation (or require more stringent limitations on covered pollutants), the permit-issuing authority must apply those limitations.

A second topic that warrants discussion is the operation of EPA's NDPES enforcement program, many aspects of which were considered in developing this regulation. The Agency emphasizes that although the Clean Water Act is a strict liability statute, the Agency may elect to use any of the enforcement response available under the CWA. *Sierra Club* v. *Train*, 557 F.2d 485 (5th Cir. 1977). EPA has exercised and intends to exercise its authority in a manner that recognizes and promotes good-faith compliance efforts.

B. Indirect Dischargers

For indirect dischargers, PSES and PSNS are implemented under National Pretreatment Program procedures outlined in 40 CFR 403. The table below may be of assistance in resolving questions about the operation of that program. A brief explanation of some of the submissions indicated on the table follows:

TABLE 2.—INDIRECT DISCHARGERS SCHEDULE FOR SUBMITTAL AND COMPLIANCE

Item	Applicable sources	Date or time period	Measured	Submitted to—
Request for category determination	Existing	60 days	From effective date of standard	Director.[1]
		or		
		60 days	From Federal Register development document availability.	
	New	Prior to commencement of discharge to POTW		
Request for fundamentally different factors variance.	Existing	180 days	From effective date of standard	Director.[1]
		Or 30 days	From final decision on category determination	
Baseline monitoring	All	180 days	From effective date of standard or final decision on category determination.	Control Authority.[2]
Report on compliance	Existing	90 days	From date for final compliance	Control Authority.[2]
	New	90 days	From commencement of discharge to POTW	
Periodic compliance reports	All	June and December		Control Authority.[2]

[1] Director=a) Chief Administrative Officer of a state water pollution control agency with an approved pretreatment program, or b) EPA Regional Water Division Director, if state does not have an approved pretreatment program.
[2] Control Authority=a) POTW if its pretreatment program has been approved, or b) Director of state water pollution control agency with an approved pretreatment program, or c) EPA Regional Administrator, if state does not have an approved pretreatment program.

A "request for category determination" is a written request, submitted by an indirect discharger or its POTW, for a determination of which categorical pretreatment standard applies to the indirect discharger. This assists the indirect discharger in knowing which PSES or PSNS limits it will be required to meet. See 40 CFR 403.6(a).

A "request for fundamentally different factors variance" is a mechanism by which a categorical pretreatment standard may be adjusted, making it more or less stringent, on a case-by-case basis. If an indirect discharger, a POTW, or any interested person believes that factors relating to a specific indirect discharger are fundamentally different from those factors considered during development of the relevant categorical pretreatment standard and that the existence of those factors justifies a different discharge limit from that specified in the categorical standard, then it may submit a request to EPA for such a variance approved. See 40 CFR 403.13.

A "baseline monitoring report" is the first report an indirect discharger must file following promulgation of an applicable standard. The baseline report includes: an identification of the indirect discharger, a description of its operations, a report on the flows of regulated streams and the results of sampling analyses to determine levels of regulated pollutants in those streams, a statement of the discharger's compliance or noncompliance with the standard, and a description of any additional steps required to achieve compliance. See 40 CFR 403.12(b).

A "report on compliance" is required of each indirect discharger within 90 days following the date for compliance with an applicable categorical pretreatment standard. The report must indicate the concentration of all regulated pollutants in the facility's regulated process waste streams; the average and maximum daily flows of the regulated streams; and a statement of whether compliance is consistently being achieved, and if not, what additional operation and maintenance or pretreatment is necessary to achieve compliance. See 40 CFR 403.12(d).

A "periodic compliance report" is a report on continuing compliance with all applicable categorical pretreatment standards. It is submitted twice per year (June and December) by indirect dischargers subject to the standards. The report must provide the concentrations of the regulated pollutants in its discharge to the POTW; the average and maximum daily flow rates of the facility; the methods used by the indirect discharger to sample and analyze the data; and a certification that these methods conform to the methods outlined in the regulations. See 40 CFR 403.12(e).

XIV. Availability of Technical Information

The basis for this regulation is detailed in four major documents. Analytical methods are discussed in "Sampling and Analysis Procedures for Screening of Industrial Effluents for Priority Pollutants." EPA's technical conclusions are detailed in the "Development Document for Effluent Guidelines, New Source Performance Standards, and Pretreatment Standards for the Nonferrous Metals Forming and Metal Powders Point Source Category." The Agency's economic analysis is presented in "Economic Impact Analysis of Effluent Limitations and Standards for the Nonferrous Metals Forming and Metal Powders Industry." A detailed response to the public comments received on the proposed regulation is presented in a report "Responses to Public Comments on the Proposed Nonferrous Metals Forming and Metal Powders Effluent Limitations Guidelines and Standards," which is a part of the public record for this regulation. Copies

of the technical and economic documents may be obtained from the National Technical Information Service, Springfield, Virginia 22161, (703) 487–4600. Additional information concerning the economic impact analysis may be obtained from Mr. Joseph Yance, Economic Analysis Staff (WH–586), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460 or by calling (202) 382–5379. Technical information may be obtained from Ms. Janet Goodwin, Industrial Technology Division (WH–552), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460 or by calling (202) 382–7126.

This regulation was submitted to the Office of Management and Budget for review as required by Executive Order 12291. This rule does not contain any information collection requirements. There are information collection requirements associated with the general pretreatment requirements and permit requirements. These information collection requirements have been cleared through OMB.

XV. List of Subjects

40 CFR Part 468

Copper forming, Waste treatment and disposal, Water pollution control.

40 CFR Part 471

Nonferrous metals forming, Water pollution control, Water treatment and disposal.

Dated: July 19, 1985.

Lee M. Thomas,

Administrator.

XVI. Appendices

A—Abbreviations, Acronyms, and Other Terms Used in This Notice

Act—The Clean Water Act.

Agency—The U.S. Environmental Protection Agency.

BAT—The best available technology economically achievable under Section 304(b)(2)(B) of the Act.

BCT—The best conventional pollutant control technology under Section 304(b)(4) of the Act.

BMP—Best management practices under Section 304(e) of the Act.

BPT—The best practicable control technology currently available under Section 304(b)(1) of the Act.

Clean Water Act—The Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 1251 *et seq.*), as amended by the Clean Water Act of 1977 (Pub. L. 95–217).

Direct Discharger—A facility which discharges or may discharge pollutants into waters of the United States.

Indirect Discharger—A facility which discharges or may discharge pollutants into a publicly owned treatment works.

NPDES Permit—A National Pollutant Discharge Elimination System permit issued under Section 402 of the Act.

NSPS—New source performance standards under Section 306 of the Act.

POTW—Publicly owned treatment works.

PSES—Pretreatment standards for existing sources of indirect discharges under Section 307(b) of the Act.

PSNS—Pretreatment standards for new sources of indirect dischargers under Sections 307 (b) and (c) of the Act.

RCRA—Resource Conservation and Recovery Act of 1976 (Pub. L. 94–580), as amended (42 U.S.C. 6901 *et seq.*).

B—Toxic Pollutants Not Detected in Nonferrous Metals Forming Wastewater

Lead-Tin-Bismuth Forming Subcategory (Subpart A)

001	acenaphthene
002	acrolein
003	acrylonitrile
005	benzidine
007	chlorobenzene
008	1,2,4-trichlorobenzene
009	hexachlorobenzene
010	1,2-dichloroethane
012	hexachloroethane
013	1,1-dichloroethane
014	1,1,2-trichloroethane
016	chloroethane
017	deleted
018	bis(2-chloroethyl)ether
019	2-chloroethyl vinyl ether
020	2-chloronaphthalene
021	2,4,6-trichlorophenol
024	2-chlorophenol
025	1,2-dichlorobenzene
026	1,3-dichlorobenzene
027	1,4-dichlorobenzene
028	3,3'-dichlorobenzidine
029	1,1-dichloroethylene
030	1,2-*trans*-dichloroethylene
031	2,4-dichlorophenol
032	1,2-dichloropropane
033	1,2-dichloropropylene
034	2,4-dimethylphenol
035	2,4-dinitrotoluene
036	2,6-dinitrotoluene
037	1,2-diphenylhydrazine
039	fluoranthene
040	4-chlorophenyl phenyl ether
041	4-bromophenyl phenyl ether
042	bis(2-chloroisopropyl)ether
043	bis(2-chloroethoxy)methane
044	methylene chloride
045	methyl chloride
046	methyl bromide
047	bromoform
048	dichlorobromomethane
049	deleted
050	deleted
051	chlorodibromomethane
052	hexachlorobutadiene
053	hexachlorocyclopentadiene
054	isophorone
055	naphthalene
056	nitrobenzene
057	2-nitrophenol
058	4-nitrophenol
059	2,4-dinitrophenol
060	4,6-dinitro-o-cresol
061	N-nitrosodimethylamine
062	N-nitrosodiphenylamine
063	N-nitrosodi-n-propylamine
064	pentachlorophenol
067	butyl benzyl phthalate
068	d-n-butyl phthalate
069	di-n-octyl phthalate
070	diethylphthalate
071	dimethylphthalate
072	benzo(a)anthracene
073	benzo(a)pyrene
074	3,4-benzofluoranthene
075	benzo(k)fluoranthene
076	chrysene
077	acenaphthylene
078	anthracene
079	benzo(ghi)perylene
080	fluorene
082	dibenzo(a,h)anthracene
083	indeno(1,2,3-cd)pyrene
084	pyrene
085	tetrachloroethylene
086	toluene
087	trichloroethylene
088	vinyl chloride
089	aldrin
090	dieldrin
091	chlordane
092	4,4'-DDT
093	4,4'-DDE
094	4,4'-DDD
095	alpha-endosulfan
096	beta-endosulfan
097	endosulfan sulfate
098	endrin
100	heptachlor
101	heptachlor epoxide
102	alpha-BHC
103	beta-BHC
105	delta-BHC
106	PCB-1242
107	PCB-1254
108	PCB-1221
109	PCB-1232
110	PCB-1248
111	PCB-1260
112	PCB-1016
113	toxaphene
116	asbestos
125	selenium
126	silver
127	thallium
129	2,3,7,8-tetrachlorodilbenzo-p-dioxin (TCDD)

Magnesium Forming Subcategory (Subpart B)

001	acenaphthene
002	acrolein
003	acrylonitrile
004	benzene
005	benzidine
006	carbon tetrachloride
007	chlorobenzene
008	1,2,4-trichlorobenzene
009	hexachlorobenzene
010	1,2-dichloroethane
012	hexachloroethane
013	1,1-dichloroethane
014	1,1,2-trichloroethane
015	1,1,2,2-tetrachloroethane
016	chloroethane

017 deleted
018 bis(2-chloroethyl)ether
019 2-chloroethyl vinyl ether
020 2-chloronaphthalene
021 2,4,6-trichlorophenol
022 parachlorometacresol
023 chloroform
024 2-chlorophenol
025 1,2-dichlorobenzene
026 1,3-dichlorobenzene
027 1,4-dichlorobenzene
028 3,3'-dichlorobenzidine
029 1,1-dichloroethylene
030 1,2-*trans*-dichloroethylene
031 2,4-dichlorophenol
032 1,2-dichloropropane
033 1,2-dichloropropylene
034 2,4-dimethylphenol
035 2,4-dinitrotoluene
036 2,6-dinitrotoluene
037 1,2-diphenylhydrazine
038 ethylbenzene
039 fluoranthene
040 4-chlorophenyl phenyl ether
041 4-bromophenyl phenyl ether
042 bis(2-chloroisopropyl)ether
043 bis(2-chloroethoxy)methane
045 methyl chloride
046 methyl bromide
047 bromoform
048 dichlorobromomethane
049 deleted
050 deleted
051 chlorodibromomethane
052 hexachlorobutadiene
053 hexachlorocyclopentadiene
054 isophorone
055 naphthalene
056 nitrobenzene
058 4-nitrophenol
059 2,4-dinitrophenol
060 4,6-dinitro-o-cresol
061 N-nitrosodimethylamine
062 N-nitrosodiphenylamine
063 N-nitrosodi-n-propylamine
064 pentachlorophenol
066 bis(2-ethylhexyl)phthalate
067 butyl benzyl phthalate
068 d-n-butyl phthalate
069 di-n-octyl phthalate
070 diethylphthalate
071 dimethylphthalate
072 benzo(a)anthracene
073 benzo(a)pyrene
074 3,4-benzofluoranthene
075 benzo(k)fluoranthene
076 chrysene
077 acenaphthylene
078 anthracene
079 benzo(ghi)perylene
080 fluorene
081 phenanthrene
082 dibenzo(a,h)anthracene
083 indeno(1,2,3-cd)pyrene
084 pyrene
085 tetrachloroethylene
086 toluene
087 trichloroethylene
088 vinyl chloride
089 aldrin
090 dieldrin
091 chlordane
092 4,4'-DDT
093 4,4'-DDE
094 4,4'-DDD
095 alpha-endosulfan
096 beta-endosulfan
097 endosulfan sulfate
098 endrin
100 heptachlor
101 heptachlor epoxide
102 alpha-BHC
103 beta-BHC
105 delta-BHC
106 PCB-1242
107 PCB-1254
108 PCB-1221
109 PCB-1232
110 PCB-1248
111 PCB-1260
112 PCB-1016
113 toxaphene
115 arsenic
116 asbestos
118 cadmium
120 copper
124 nickel
125 selenium
127 thallium
129 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)

Nickel-Cobalt Forming Subcategory (Subpart C)

002 acrolein
003 acrylonitrile
006 carbon tetrachloride
007 chlorobenzene
008 1,2,4-trichlorobenzene
009 hexachlorobenzene
010 1,2-dichloroethane
014 1,1,2-trichloroethane
015 1,1,2,2-tetrachloroethane
016 chloroethane
017 deleted
018 bis(2-chloroethyl)ether
019 2-chloroethyl vinyl ether
020 2-chloronaphthalene
021 2,4,6-trichlorophenol
024 2-chlorophenol
025 1,2-dichlorobenzene
026 1,3-dichlorobenzene
027 1,4-dichlorobenzene
030 1,2-*trans*-dichloroethylene
031 2,4-dichlorophenol
032 1,2-dichloropropane
033 1,2-dichloropropylene
035 2,4-dinitrotoluene
038 ethylbenzene
040 4-chlorophenyl phenyl ether
041 4-bromophenyl phenyl ether
042 bis(2-chloroisopropyl)ether
045 methyl chloride
046 methyl bromide
047 bromoform
048 dichlorobromomethane
049 deleted
050 deleted
051 chlorodibromomethane
052 hexachlorobutadiene
053 hexachlorocyclopentadiene
054 isophorone
056 nitrobenzene
059 2,4-dinitrophenol
074 3,4-benzofluoranthene
079 benzo(ghi)perylene
082 dibenzo(a,h)anthracene
085 tetrachloroethylene
087 trichloroethylene
088 vinyl chloride
089 aldrin
090 dieldrin
091 chlordane
092 4,4'-DDT
093 4,4'-DDE
094 4,4'-DDD
095 alpha-endosulfan
096 beta-endosulfan
097 endosulfan sulfate
098 endrin
100 heptachlor
101 heptachlor epoxide
102 alpha-BHC
103 beta-BHC
105 delta-BHC
106 PCB-1242
107 PCB-1254
108 PCB-1221
109 PCB-1232
110 PCB-1248
111 PCB-1260
112 PCB-1016
113 toxaphene
116 asbestos
129 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)

Precious Metals Forming Subcategory (Subpart D)

001 acenaphthene
002 acrolein
003 acrylonitrile
005 benzidine
006 carbon tetrachloride
007 chlorobenzene
008 1,2,4-trichlorobenzene
009 hexachlorobenzene
010 1,2-dichloroethane
012 hexachloroethane
013 1,1-dichloroethane
014 1,1,2-trichloroethane
015 1,1,2,2-tetrachloroethane
017 deleted
018 bis(2-chloroethyl)ether
019 2-chloroethyl vinyl ether
020 2-chloronaphthalene
021 2,4,6-trichlorophenol
022 parachlorometacresol
023 chloroform
024 2-chlorophenol
025 1,2-dichlorobenzene
026 1,3-dichlorobenzene
027 1,4-dichlorobenzene
028 3,3'-dichlorobenzidine
029 1,1-dichloroethylene
030 1,2-*trans*-dichloroethylene
031 2,4-dichlorophenol
032 1,2-dichloropropane
033 1,2-dichloropropylene
034 2,4-dimethylphenol
035 2,4-dinitrotoluene
036 2,6-dinitrotoluene
037 1,2-diphenylhydrazine
038 ethylbenzene
039 fluoranthene
040 4-chlorophenyl phenyl ether
041 4-bromophenyl phenyl ether
042 bis(2-chloroisopropyl)ether
043 bis(2-chloroethoxy)methane
046 methyl bromide
047 bromoform
048 dichlorobromomethane
049 deleted
050 deleted
051 chlorodibromomethane
052 hexachlorobutadiene
053 hexachlorocyclopentadiene

054 isophorone
055 naphthalene
056 nitrobenzene
057 2-nitrophenol
058 4-nitrophenol
059 2,4-dinitrophenol
060 4,6-dinitro-o-cresol
061 N-nitrosodimethylamine
062 N-nitrosodiphenylamine
063 N-nitrosodi-n-propylamine
064 pentachlorophenol
065 phenol
066 bis(2-ethylhexyl)phthalate
067 butyl benzyl phthalate
068 d-n-butyl phthalate
069 di-n-octyl phthalate
070 diethlyphthalate
071 dimethylphthalate
072 benzo(a)anthracene
073 benzo(a)pyrene
074 3,4-benzofluoranthene
075 benzo(k)fluoranthene
076 chrysene
077 acenaphthylene
078 anthracene
079 benzo(ghi)perylene
080 fluorene
081 phenanthrene
082 dibenzo(a,h)anthracene
083 indeno(1,2,3-cd)pyrene
084 pyrene
085 tetrachloroethylene
088 vinyl chloride
089 aldrin
090 dieldrin
091 chlordane
092 4,4'-DDT
093 4,4'-DDE
094 4,4'-DDD
095 alpha-endosulfan
096 beta-endosulfan
097 endosulfan sulfate
098 endrin
100 heptachlor
101 heptachlor epoxide
102 alpha-BHC
103 beta-BHC
105 delta-BHC
106 PCB-1242
107 PCB-1254
108 PCB-1221
109 PCB-1232
110 PCB-1248
111 PCB-1260
112 PCB-1016
113 toxaphene
116 asbestos
117 beryllium
125 selenium
129 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)

Refractory Metals Forming Subcategory (Subpart E)

001 acenaphthene
002 acrolein
003 acrylonitrile
004 benzene
005 benzidine
006 carbontetrachloride
007 chlorobenzene
008 1,2,4-trichlorobenzene
009 hexachlorobenzene
010 1,2-dichloroethane
012 hexachloroethane
014 1,1,2-trichloroethane
016 chloroethane
017 deleted
018 bis(2-chloroethyl)ether
019 2-chloroethyl vinyl ether
020 2-chloronaphthalene
021 2,4,6-trichlorophenol
022 parachlorometacresol
025 1,2-dichlorobenzene
026 1,3-dichlorobenzene
027 1,4-dichlorobenzene
028 3,3'-dichlorobenzidine
030 1,2-*trans*-dichloroethylene
031 2,4-dichlorophenol
032 1,2-dichloropropane
033 1,2-dichloropropylene
036 2,6-dinitrotoluene
037 1,2-diphenylhydrazine
038 ethylbenzene
040 4-chlorophenyl phenyl ether
041 4-bromophenyl phenyl ether
042 bis(2-chloroisopropyl)ether
043 bis(2-chloroethoxy)methane
045 methyl chloride
046 methyl bromide
047 bromoform
048 dichlorobromomethane
049 deleted
050 deleted
051 chlorodibromomethane
052 hexachlorobutadiene
053 hexachlorocyclopentadiene
054 isophorone
058 4-nitrophenol
059 2,4-dinitrophenol
061 N-nitrosodimethylamine
064 pentachlorophenol
071 dimethylphthalate
073 benzo(a)pyrene
074 3,4-benzofluoranthene
075 benzo(k)fluoranthene
079 benzo(ghi)perylene
082 dibenzo(a,h)anthracene
083 indeno(1,2,3-cd)pyrene
087 trichloroethylene
088 vinyl chloride
089 aldrin
090 dieldrin
091 chlordane
092 4,4'-DDT
093 4,4'-DDE
094 4,4'-DDD
095 alpha-endosulfan
096 beta-endosulfan
097 endosulfan sulfate
098 endrin
100 heptachlor
101 heptachlor epoxide
102 alpha-BHC
103 beta-BHC
105 delta-BHC
106 PCB-1242
107 PCB-1254
108 PCB-1221
109 PCB-1232
110 PCB-1248
111 PCB-1260
112 PCB-1016
113 toxaphene
116 asbestos
129 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)

Titanium Forming Subcategory (Subpart F)

001 acenaphthene
002 acrolein
003 acrylonitrile
004 benzene
005 benzidine
007 chlorobenzene
008 1,2,4-trichlorobenzene
009 hexachlorobenzene
010 1,2-dichloroethane
011 1,1,1-trichloroethane
012 hexachloroethane
013 1,1-dichloroethane
014 1,1,2-trichloroethane
015 1,1,2,2-tetrachloroethane
016 chloroethane
017 deleted
018 bis(2-chloroethyl)ether
019 2-chloroethyl vinyl ether
020 2-chloronaphthalene
021 2,4,6-trichlorophenol
022 parachlorometacresol
023 chloroform
024 2-chlorophenol
025 1,2-dichlorobenzene
026 1,3-dichlorobenzene
027 1,4-dichlorobenzene
028 3,3'-dichlorobenzidine
029 1,1-dichloroethylene
030 1,2-*trans*-dichloroethylene
031 2,4-dichlorophenol
032 1,2-dichloropropane
033 1,2-dichloropropylene
034 2,4-dimethylphenol
035 2,4-dinitrotoluene
036 2,6-dinitrotoluene
037 1,2-diphenylhydrazine
038 ethylbenzene
039 fluoranthene
040 4-chlorophenyl phenyl ether
041 4-bromophenyl phenyl ether
042 bis(2-chloroisopropyl)ether
043 bis(2-chloroethoxy)methane
045 methyl chloride
046 methyl bromide
047 bromoform
048 dichlorobromomethane
049 deleted
050 deleted
051 chlorodibromomethane
052 hexachlorobutadiene
053 hexachlorocyclopentadiene
054 isophorone
055 naphthalene
056 nitrobenzene
057 2-nitrophenol
058 4-nitrophenol
059 2,4-dinitrophenol
060 4,6-dinitro-o-cresol
061 N-nitrosodimethylamine
063 N-nitrosodi-n-propylamine
064 pentachlorophenol
065 phenol
066 bis(2-ethylhexyl)phthalate
067 butyl benzyl phthalate
068 d-n-butyl phthalate
069 di-n-octyl phthalate
070 diethylphthalate
071 dimethylphthalate
072 benzo(a)anthracene
073 benzo(a)pyrene
074 3,4-benzofluoranthene
075 benzo(k)fluoranthene
076 chrysene
077 acenaphthylene
078 anthracene
079 benzo(ghi)perylene
080 fluorene
081 phenanthrene

082 dibenzo(a,h)anthracene
083 indeno(1,2,3-cd)pyrene
084 pyrene
085 tetrachloroethylene
086 toluene
087 trichloroethylene
088 vinyl chloride
089 aldrin
090 dieldrin
091 chlordane
092 4,4'-DDT
093 4,4'-DDE
094 4,4'-DDD
095 alpha-endosulfan
096 beta-endosulfan
097 endosulfan sulfate
098 endrin
100 heptachlor
101 heptachlor epoxide
102 alpha-BHC
103 beta-BHC
105 delta-BHC
106 PCB-1242
107 PCB-1254
108 PCB-1221
109 PCB-1232
110 PCB-1248
111 PCB-1260
112 PCB-1016
113 toxaphene
116 asbestos
129 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)

Uranium Forming Subcategory (Subpart G)

001 acenaphthene
002 acrolein
003 acrylonitrile
004 benzene
005 benzidine
006 carbon tetrachloride
007 chlorobenzene
008 1,2,4-trichlorobenzene
009 hexachlorobenzene
010 1,2-dichloroethane
011 1,1,1-trichloroethane
012 hexachloroethane
013 1,1-dichloroethane
014 1,1,2-trichloroethane
015 1,1,2,2-tetrachloroethane
016 chloroethane
017 deleted
018 bis(2-chloroethyl)ether
019 2-chloroethyl vinyl ether
020 2-chloronaphthalene
021 2,4,6-trichlorophenol
023 chloroform
024 2-chlorophenol
025 1,2-dichlorobenzene
026 1,3-dichlorobenzene
027 1,4-dichlorobenzene
028 3,3'-dichlorobenzidine
029 1,1-dichloroethylene
030 1,2-*trans*-dichloroethylene
031 2,4-dichlorophenol
032 1,2-dichloropropane
033 1,2-dichloropropylene
034 2,4-dimethylphenol
035 2,4-dinitrotoluene
036 2,6-dinitrotoluene
037 1,2-diphenylhydrazine
038 ethylbenzene
039 fluoranthene
040 4-chlorophenyl phenyl ether
041 4-bromophenyl phenyl ether
042 bis(2-chloroisopropyl)ether
043 bis(2-chloroethoxy)methane
044 methylene chloride
045 methyl chloride
046 methyl bromide
047 bromoform
048 dichlorobromomethane
049 deleted
050 deleted
051 chlorodibromomethane
052 hexachlorobutadiene
053 hexachlorocyclopentadiene
054 isophorone
055 naphthalene
056 nitrobenzene
057 2-nitrophenol
058 4-nitrophenol
059 2,4-dinitrophenol
060 4,6-dinitro-o-cresol
061 N-nitrosodimethylamine
062 N-nitrosodiphenylamine
063 N-nitrosodi-n-propylamine
064 pentachlorophenol
065 phenol
067 butyl benzyl phthalate
068 d-n-butyl phthalate
069 di-n-octyl phthalate
070 diethylphthalate
071 dimethylphthalate
072 benzo(a)anthracene
073 benzo(a)pyrene
074 3,4-benzofluoranthene
075 benzo(k)fluoranthene
076 chrysene
077 acenaphthylene
078 anthracene
079 benzo(ghi)perylene
080 fluorene
082 dibenzo(a,h)anthracene
083 indeno(1,2,3-cd)pyrene
084 pyrene
085 tetrachloroethylene
086 toluene
087 trichloroethylene
088 vinyl chloride
089 aldrin
090 dieldrin
091 chlordane
092 4,4'-DDT
093 4,4'-DDE
094 4,4'-DDD
095 alpha-endosulfan
096 beta-endosulfan
097 endosulfan sulfate
098 endrin
100 heptachlor
101 heptachlor epoxide
102 alpha-BHC
103 beta-BHC
105 delta-BHC
106 PCB-1242
107 PCB-1254
108 PCB-1221
109 PCB-1232
110 PCB-1248
111 PCB-1260
112 PCB-1016
113 toxaphene
116 asbestos
129 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)

Zinc Forming Subcategory (Subpart H)

002 acrolein
005 benzidine
006 carbon tetrachloride
009 hexachlorobenzene
011 1,1,1-trichloroethane
012 hexachloroethane
016 chloroethane
017 deleted
019 2-chloroethyl vinyl ether
020 2-chloronaphthalene
021 2,4,6-trichlorophenol
022 parachlorometacresol
024 2-chlorophenol
025 1,2-dichlorobenzene
026 1,3-dichlorobenzene
027 1,4-dichlorobenzene
028 3,3'-dichlorobenzene
031 2,4-dichlorophenol
035 2,4-dinitrotoluene
039 fluoranthene
040 4-chlorophenyl phenyl ether
041 4-bromophenyl phenyl ether
042 bis(2-chloroisopropyl)ether
045 methyl chloride
049 deleted
050 deleted
052 hexachlorobutadiene
053 hexachlorocyclopentadiene
054 isophorone
056 nitrobenzene
057 2-nitrophenol
058 4-nitrophenol
059 2,4-dinitrophenol
060 4,6-dinitro-o-cresol
061 N-nitrosodimethylamine
062 N-nitrosodiphenylamine
063 N-nitrosodi-n-propylamine
064 pentachlorophenol
065 phenol
069 di-n-octyl phthalate
071 dimethylphthalate
073 benzo(a)pyrene
074 3,4-benzofluoranthene
075 benzo(k)fluoranthene
077 acenapthaylene
079 benzo(ghi)perylene
080 fluorene
082 dibenzo(a,h)anthracene
084 pyrene
088 vinyl chloride
089 aldrin
090 dieldrin
091 chlordane
092 4,4'-DDT
093 4,4'-DDE
094 4,4'-DDD
095 alpha-endosulfan
096 beta-endosulfan
097 endosulfan sulfate
098 endrin
100 heptachlor
101 hepthachor epoxide
102 alpha-BHC
103 beta-BHC
105 delta-BHC
106 PCB-1242
107 PCB-1254
108 PCB-1221
109 PCB-1232
110 PCB-1248
111 PCB-1260
112 PCB-1016
113 toxaphene
114 antimony
115 arsenic
116 asbestos
117 beryllium
118 cadmium
120 copper

122 lead
123 mercury
125 selenium
126 silver
127 thallium
129 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)

Zirconium-Hafnium Forming Subcategory (Subpart I)

001 acenaphthene
003 acrylonitrile
005 benzidine
006 carbon tetrachloride
007 chlorobenzene
008 1,2,4-trichlorobenzene
009 hexachlorobenzene
010 1,2-dichloroethane
012 hexachloroethane
014 1,1,2-trichloroethane
015 1,1,2,2-tetrachloroethane
016 chloroethane
017 deleted
018 bis(2-chloroethyl)ether
019 2-chloroethyl vinyl ether
020 2-chloronaphthalene
021 2,4,6-trichlorophenol
024 2-chlorophenol
025 1,2-dichlorobenzene
026 1,3-dichlorobenzene
027 1,4-dichlorobenzene
028 3,3'-dichlorobenzidine
029 1,1-dichloroethylene
030 1,2-*trans*-dichloroethylene
031 2,4-dichlorophenol
032 1,2-dichloropropane
033 1,2-dichloropropylene
034 2,4-dimethylphenol
035 2,4-dinitrotoluene
036 2,6-dinitrotoluene
037 1,2-diphenylhydrazine
039 fluoranthene
040 4-chlorophenyl phenyl ether
041 4-bromophenyl phenyl ether
042 bis(2-chloroisopropyl)ether
043 bis(2-chloroethoxy)methane
045 methyl chloride
046 methyl bromide
047 bromoform
048 dichlorobromomethane
049 deleted
050 deleted
051 chlorodibromomethane
052 hexachlorobutadiene
053 hexachlorocyclopentadiene
054 isophorone
055 naphthalene
056 nitrobenzene
058 4-nitrophenol
059 2,4-dinitrophenol
060 4,6-dinitro-o-cresol
061 N-nitrosodimethylamine
063 N-nitrosodi-n-propylamine
064 pentachlorophenol
065 phenol
067 butyl benzyl phthalate
071 dimethylphthalate
072 benzo(a)anthracene
073 benzo(a)pyrene
074 3,4-benzofluoranthene
075 benzo(k)fluoranthene
076 chrysene
077 acenaphthylene
079 benzo(ghi)perylene
080 fluorene
082 dibenzo(a,h)anthracene
083 indeno(1,2,3-cd)pyrene
084 pyrene
088 vinyl chloride
089 aldrin
090 dieldrin
091 chlordane
092 4,4'-DDT
093 4,4'-DDE
094 4,4'-DDD
095 alpha-endosulfan
096 beta-endosulfan
097 endosulfan sulfate
098 endrin
099 endrin aldehyde
100 heptachlor
101 heptachlor epoxide
102 alpha-BHC
103 beta-BHC
104 gamma-BHC
105 delta-BHC
106 PCB-1242
107 PCB-1254
108 PCB-1221
109 PCB-1232
110 PCB-1248
111 PCB-1260
112 PCB-1016
113 toxaphene
116 asbestos
129 2,3,7,8-tetrachlordibenzo-p-dioxin (TCDD)

Metal Powders (Subpart J)

001 acenaphthene
002 acrolein
003 acrylonitrile
005 benzidine
007 chlorobenzene
008 1,2,4-trichlorobenzene
009 hexachlorobenzene
010 1,2-dichloroethane
012 hexachloroethane
013 1,1-dichloroethane
014 1,1,2-trichloroethane
015 1,1,2,2-tetrachloroethane
016 chloroethane
017 deleted
018 bis(2-chloroethyl)ether
019 2-chloroethyl vinyl ether
020 2-chloronaphthalene
021 2,4,6-trichlorophenol
022 parachlorometacresol
023 chloroform
024 2-chlorophenol
025 1,2-dichlorobenzene
026 1,3-dichlorobenzene
027 1,4-dichlorobenzene
028 3,3'-dichlorobenzidine
029 1,1-dichloroethylene
030 1,2-*trans*-dichloroethylene
031 2,4-dichlorophenol
032 1,2-dichloropropane
033 1,2-dichloropropylene
034 2,4-dimethylphenol
035 2,4-dinitrotoluene
036 2,6-dinitrotoluene
037 1,2-diphenylhydrazine
038 ethylbenzene
039 fluoranthene
040 4-chlorophenyl phenyl ether
041 4-bromophenyl phenyl ether
042 bis(2-chloroisopropyl)ether
043 bis(2-chloroethoxy)methane
045 methyl chloride
046 methyl bromide
047 bromoform
048 dichlorobromomethane
049 deleted
050 deleted
051 chlorodibromomethane
052 hexachlorobutadiene
053 hexachlorocyclopentadiene
054 isophorone
055 naphthalene
056 nitrobenzene
057 2-nitrophenol
058 4-nitrophenol
059 2,4-dinitrophenol
060 4,6-dinitro-o-cresol
061 N-nitrosodimethylamine
062 N-nitrosodiphenylamine
063 N-nitrosodi-n-propylamine
064 pentachlorophenol
065 phenol
066 bis(2-ethylhexyl)phthalate
067 butyl benzyl phthalate
068 di-n-butyl phthalate
069 di-n-octyl phthalate
070 diethylphthalate
071 dimethylphthalate
072 benzo(a)anthracene
073 benzo(a)pyrene
074 3,4-benzofluoranthene
075 benzo(k)fluoranthene
076 chrysene
077 acenaphthylene
078 anthracene
079 benzo(ghi)perylene
080 fluorene
081 phenanthrene
082 dibenzo(a,h)anthracene
083 indeno(1,2,3-cd)pyrene
084 pyrene
085 tetrachloroethylene
087 trichloroethylene
088 vinyl chloride
089 aldrin
090 dieldrin
091 chlordane
092 4,4'-DDT
093 4,4'-DDE
094 4,4'-DDD
095 alpha-endosulfan
096 beta-endosulfan
097 endosulfan sulfate
098 endrin
100 heptachlor
101 heptachlor expoxide
102 alpha-BHC
103 beta-BHC
105 delta-BHC
106 PCB-1242
107 PCB-1254
108 PCB-1221
109 PCB-1232
110 PCB-1248
111 PCB-1260
112 PCB-1016
113 toxaphene
116 asbestos
117 beryllium
118 cadmium
123 mercury
125 selenium
126 silver
129 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)

C—Toxic Pollutants Detected Below the Analytical Quantification Limit

Lead-Tin-Bismuth Forming (Subpart A)

004 benzene

Refractory Metals Forming (Subpart E)

013 1,1-dichloroethane
015 1,1,2,2-tetrachloroethane
024 2-chlorophenol
029 1,1-dichloroethylene
084 pyrene
104 gamma-BHC

Zinc Forming (Subpart H)

001 acenaphthene
008 1,2,4-trichlorobenzene
010 1,2-dichloroethane
037 1,2-diphenylhydrazine
046 methyl bromide

Zirconium-Hafnium (Subpart I)

004 benzene
007 chlorobenzene
013 1,1-dichloroethane
057 2-nitrophenol
068 di-n-butyl phthalate
070 diethyl phthalate
078 anthracene
081 phenanthrene
085 tetrachloroethylene
087 trichloroethylene

D—Toxic Pollutants Detected in the Effluent From Only a Small Number of Sources

Lead-Tin-Bismuth Forming (Subpart A)

065 phenol
066 bis(2-ethylhexyl)phthalate
081 phenanthrene
119 chromium
120 copper
121 cyanide
128 zinc

Magnesium Forming (Subpart B)

117 beryllium
121 cyanide
122 lead

Nickel-Cobalt Forming (Subpart C)

001 acenaphthene
005 benzidene
011 1,1,1-trichloroethane
013 1,1-dichloroethane
022 parachlorometacresol
028 3,3'-dichlorobenzidine
034 2,4-dimethylphenol
036 2,6-dinitrotoluene
039 fluoranthene
044 methylene chloride
055 naphthalene
057 2-nitrophenol
058 4-nitrophenol
060 4,6-dinitro-o-cresol
063 N-nitrosodi-n-propylamine
064 pentachlorophenol
065 phenol
066 bis(2-ethylhexyl)phthalate
068 di-n-butyl phthalate
073 benzo(a)pyrene
080 fluorene
081 phenanthrene
084 pyrene
114 antimony
115 arsenic
121 cyanide
125 selenium
126 silver

Precious Metals Forming (Subpart D)

004 benzene
011 1,1,1-trichloroethane
044 methylene chloride
045 methyl chloride
086 toluene
087 trichloroethylene

Refractory Metals Forming (Subpart E)

011 1,1,1-trichloroethane
035 2,4-dinitrotoluene
039 fluoranthene
044 methylene chloride
055 naphthalene
057 2-nitrophenol
060 4,6-dinitro-o-cresol
062 N-nitrosodiphenylamine
063 N-nitrosodi-n-propylamine
065 phenol
066 bis(2-ethylhexyl)phthalate
067 butyl benzyl phthalate
068 di-n-butyl phthalate
069 di-n-octyl phthalate
070 diethyl phthalate
072 benzo(a)anthracene
076 chrysene
077 acenaphthylene
078 anthracene
080 fluorene
081 phenanthrene
085 tetrachloroethylene
086 toluene
118 cadmium
121 cyanide

Titanium Forming (Subpart F)

115 arsenic
118 cadmium
125 selenium

Uranium Forming (Subpart G)

022 parachlorometacresol
066 bis(2-ethylhexyl)phthalate
081 phenanthrene
117 beryllium
121 cyanide

Zinc Forming (Subpart H)

051 chlorodibromomethane
066 bis(2-ethylhexyl)phthalate
068 d-n-butyl phthalate

Zirconium-Hafnium Forming (Subpart I)

011 1,1,1-trichloroethane
022 parachlorometacresol
038 ethylbenzene
066 bis(2-ethylhexyl)phthalate
069 di-n-octyl phthalate
114 antimony
115 arsenic
118 cadmium
127 thallium

Metal Powders (Subpart J)

011 1,1,1-trichloroethane

E—Toxic Pollutants Detected in Amounts Too Small To Be Effectively Treated

Lead-Tin-Bismuth Forming (Subpart A)

006 carbon tetrachloride
011 1,1,1-trichloroethane
015 1,1,2,2-tetrachloroethane
022 parachlorometacresol
023 chloroform
038 ethylbenzene
115 arsenic
117 beryllium
118 cadmium
123 mercury
124 nickel

Magnesium Forming (Subpart B)

011 1,1,1-trichloroethane
044 methylene chloride
057 nitrophenol
065 phenol
114 antimony
123 mercury
126 silver

Nickel-Cobalt Forming (Subpart C)

004 benzene
012 hexachloroethane
023 chloroform
029 1,1-dichloroethylene
037 1,2-diphenyl hydrazine
043 bis(2-chloroethoxy)methane
061 N-nitrosodimethylamine
067 butyl benzyl phthalate
069 di-n-octyl phthalate
070 diethyl phthalate
071 dimethyl phthalate
072 benzo(a)anthracene
077 acenaphthylene
078 anthracene
083 indeno(1,2,3-cd)pyrene
086 toluene
117 beryllium
123 mercury
127 thallium

Precious Metals Forming (Subpart D)

016 chloroethane
114 antimony
115 arsenic
123 mercury
127 thallium

Refractory Metals Forming (Subpart E)

023 chloroform
034 2,4-dimethylphenol
056 nitrobenzene
114 antimony
115 arsenic
117 beryllium
123 mercury
125 selenium
127 thallium

Titanium Forming (Subpart F)

006 carbon tetrachloride
044 methylene chloride
114 antimony
117 beryllium
123 mercury
126 silver
127 thallium

Uranium Forming (Subpart G)

114 antimony
115 arsenic
123 mercury
125 selenium
126 silver
127 thallium

Zinc Forming (Subpart H)

003 acrylonitrile
004 benzene
007 chlorobenzene
013 1,1-dichloroethane
015 1,1,2,2-tetrachloroethane
018 bis(2-chloroethyl)ether
023 chloroform
029 1,1-dichloroethylene
030 1,2-*trans*-dichloroethylene
032 1,2-dichloropropane
033 1,2-dichloropropylene
034 2,4-dimethyl phenol
036 2,6-dinitrotoluene
038 ethylbenzene
043 bis(2-chloroethoxy)methane
044 methylene chloride
047 bromoform
048 dichlorobromomethane
055 naphthalene
067 butyl benzyl phthalate
072 chrysene
078 anthracene
081 phenanthrene
085 tetrachloroethylene
086 toluene
087 trichloroethylene

Zirconium-Hafnium Forming (Subpart I)

002 acrolein
023 chloroform
117 beryllium
123 mercury
125 selenium
126 silver

Metal Powders (Subpart J)

004 benzene
006 carbon tetrachloride
044 methylene chloride
086 toluene
114 antimony
115 arsenic
127 thallium

F—Toxic Pollutants Effectively Controlled by BAT, NSPS, PSES and PSNS Even Though They Are Not Specifically Regulated

Nickel-Cobalt Forming (Subpart C)

118 cadmium
120 copper
122 lead
128 zinc
062 N-nitrosodiphenylamine

Precious Metals Forming (Subpart D)

119 chromium
124 nickel
128 zinc

Refractory Metals Forming (Subpart E)

119 chromium
122 lead
126 silver
128 zinc

Titanium Forming (Subpart F)

062 N-nitrosodiphenylamine
119 chromium
120 copper
124 nickel

Uranium Forming (Subpart G)

128 zinc

Zinc Forming

124 nickel

Zirconium-Hafnium Forming (Subpart I)

044 methylene chloride
062 N-nitrosodiphenylamine
086 toluene
120 copper
122 lead
128 zinc

Metal Powders (Subpart J)

119 chromium
124 nickel
128 zinc

G—Subcategories Excluded

Paragraph 8(a)(iv) of the Settlement Agreement authorizes the Administrator to exclude from regulation subcategories in which the amount and toxicity of each pollutant in the discharge does not justify developing national regulations. Paragraph 8(b) of the Settlement Agreement authorizes the Administrator to exclude from pretreatment standards a subcategory if (i) 95 percent or more of all point sources in the subcategory introduce into POTWs only pollutants which are susceptible to treatment by the POTW and which do not interfere with, do not pass through, or are not otherwise incompatible with such treatment works; or (ii) the toxicity and amount of the incompatible pollutants introduced by such point sources into POTWs is so insignificant that developing a pretreatment regulation is not justified.

1. The following subcategories are excluded because there are no dischargers from the subcategory (Paragraph 8(a)(iv)):

Cadmium forming
Chromium forming
Gallium forming
Germanium forming
Indium forming
Lithium forming
Manganese forming
Neodymium forming
Praseodymium forming

2. The following subcategory is excluded from further national PSES regulation development under Paragraph 8(b) of the Settlement Agreement because there are no existing indirect dischargers in the subcategory:

Uranium forming

A new Part 471 is added to 40 CFR to read as follows:

PART 471—NONFERROUS METALS FORMING AND METAL POWDERS POINT SOURCE CATEGORY

General Provisions

Sec.
471.01 Applicability.
471.02 General definitions.
471.03 Compliance date for PSES.

Subpart A—Lead-Tin-Bismuth Forming Subcategory

471.10 Applicability; description of the lead-tin-bismuth forming subcategory.
471.11 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
471.12 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
471.13 New source performance standards (NSPS).
471.14 Pretreatment standards for existing sources (PSES).
471.15 Pretreatment standards for new sources (PSNS).
471.16 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT) [Reserved].

Subpart B—Magnesium Forming Subcategory

471.20 Applicability; description of the magnesium forming subcategory.
471.21 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
471.22 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
471.23 New source performance standards (NSPS).
471.24 Pretreatment standards for existing sources (PSES).
471.25 Pretreatment standards for new sources (PSNS).
471.26 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT) [Reserved].

Subpart C—Nickel-Cobalt Forming Subcategory

471.30 Applicability; description of the nickel-cobalt forming subcategory.
471.31 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Subpart D–Precious Metals Forming Subcategory

Subpart E—Refractory Metals Forming Subcategory

Subpart F—Titanium Forming Subcategory

Subpart G—Uranium Forming Subcategory

Subpart H—Zinc Forming Subcategory

Subpart I—Zirconium-Hafnium Forming Subcategory

Subpart J—Metal Powders Subcategory

Authority: Secs. 301, 304(b), (c), (e), and (g), 306(b) and (c), 307, 308, and 501 of the Clean Water Act (the Federal Water Pollution Control Act Amendments of 1972 as amended by the Clean Water Act of 1977) (the "Act"); 33 U.S.C. 1311, 1314(b), (c), (e), and (g), 1316(b) and (c), and 1361; 86 Stat. 816, Pub. L. 92–500; 91 Stat. 1567, Pub. L. 95–217.

General Provisions

§ 471.01 Applicability.

(a) This part applies to discharges of pollutants to waters of the United States and introduction of pollutants into a publicly owned treatment works from the forming of nonferrous metals (including nonferrous metal alloys), except beryllium, copper, and aluminum and their alloys. Aluminum alloys are defined as any alloy in which aluminum is the major constituent in percent by weight. Copper alloys are defined as any alloy in which copper is the major constituent in percent by weight except when copper is alloyed with precious metals. Any copper-precious metal alloy containing 30 percent or greater precious

metal is considered a precious metal alloy for the purposes of this part. Beryllium alloys are any alloy in which beryllium is present at 0.1 percent or greater. This part applies to:

(1) Forming operations, including rolling (both hot and cold), extruding, forging, drawing, swaging, cladding, and tube reducing, and

(2) Ancillary operations performed as an integral part of the forming of these metals, including casting for subsequent forming, heat treatment, surface treatment, alkaline cleaning, solvent degreasing, product testing, surface coating, sawing, grinding, tumbling, burnishing, and wet air pollution control.

(b) This part also applies to discharges of pollutants to waters of the United States and introduction of pollutants into a publicly owned treatment works from mechanical metal powder production operations, forming of parts from metal powders, and associated ancillary operations (listed in paragraph (a)(2) of this section) of:

(1) Iron, copper, and aluminum, and their alloys; and

(2) The nonferrous metals and their alloys described in paragraph (a) of this section. This part does not regulate the production of metal powders by chemical means such as precipitation. The production of metal powder as the final step in refining metal is regulated under the Nonferrous Metals Manufacturing Point Source Category regulation, 40 CFR Part 421.

(c) Surface treatment includes any chemical or electrochemical treatment applied to the surface of the metal. For the purposes of this regulation, surface treatment of metals is considered to be an integral part of the forming of metals whenever it is performed at the same plant site at which the metals are formed. Such surface treatment operations are not regulated under the Electroplating or Metal Finishing Point Source Category regulations, 40 CFR Part 413 or 433, respectively.

(d) Casting is covered by this part when it is performed as an integral part of the metal forming process and takes place at the same plant site at which metals are formed. Such casting will not be regulated under the provisions of Metal Molding and Casting Point Source Category regulations, 40 CFR Part 464.

(e) This part does not apply to the forming of the metals cadmium, chromium, gallium, germanium, indium, lithium, manganese, neodymium, or praseodymium.

§ 471.02 General definitions.

In addition to the definitions set forth in 40 CFR Part 401, the following definitions apply to this part:

(a) "Nonferrous metal" is any pure metal other than iron or any metal alloy for which a metal other than iron is its major constituent in percent by weight.

(b) "Forming" is a set of manufacturing operations in which metals and alloys are made into semifinished products by hot or cold working.

(c) "Alkaline cleaning" uses a solution (bath), usually detergent, to remove lard, oil, and other such compounds from a metal surface. Alkaline cleaning is usually followed by a water rinse. The rinse may consist of single or multiple stage rinsing. For the purposes of this part, an alkaline cleaning operation is defined as a bath followed by a rinse, regardless of the number of rinse stages. Each alkaline cleaning bath and rinse combination is entitled to a discharge allowance.

(d) "Atomization" is the process in which a stream of water or gas impinges upon a molten metal stream, breaking it into droplets which solidify as powder particles.

(e) "Burnishing" is a surface finishing process in which minute surface irregularities are displaced rather than removed.

(f) "Casting" is pouring molten metal into a mold to produce an object of desired shape.

(g) "Cladding" or "metal cladding" is the art of producing a composite metal containing two or more layers that have been metallurgically bonded together by roll bonding (co-rolling), solder application (or brazing), or explosion bonding.

(h) "Contact cooling water" is any wastewater which contacts the metal workpiece or the raw materials used in forming metals for the purpose of removing heat from the metal.

(i) "Continuous casting" is the production of sheet, rod, or other long shapes by solidifying the metal while it is being poured through an open-ended mold.

(j) "Degreasing" is the removal of oils and greases from the surface of the metal workpiece. This process can be accomplished with detergents as in alkaline cleaning or by the use of solvents.

(k) "Direct chill casting" is the pouring of molten nonferrous metal into a water-cooled mold. Contact cooling water is sprayed onto the metal as it is dropped into the mold, and the metal ingot falls into a water bath at the end of the casting process.

(l) "Drawing" is the process of pulling a metal through a die or succession of dies to reduce the metal's diameter or alter its cross-sectional shape.

(m) "Dye penetrant testing" is a nondestructive method for finding discontinuities that are open to the surface of the metal. A dye is applied to the surface of metal and the excess is rinsed off. Dye that penetrates surface discontinuities will not be rinsed away thus marking these discontinuities.

(n) "Emulsions" are stable dispersions of two immiscible liquids. In the Nonferrous Metals Forming and Metal Powders Point Source category, this is usually an oil and water mixture.

(o) "Electrocoating" is the electrodeposition of a metallic or nonmetallic coating onto the surface of a workpiece.

(p) "Extrusion" is the application of pressure to a billet of metal, forcing the metal to flow through a die orifice.

(q) "Forging" is deforming metal, usually hot, with compressive force into desired shapes, with or without dies. Where dies are used, the metal is forced to take the shape of the die.

(r) "Grinding" is the process of removing stock from a workpiece by the use of a tool consisting of abrasive grains held by a rigid or semi-rigid grinder. Grinding includes surface finishing, sanding, and slicing.

(s) "Heat treatment" is the application of heat of specified temperature and duration to change the physical properties of the metal.

(t) "Hot pressing" is forming a powder metallurgy compact at a temperature high enough to effect concurrent sintering.

(u) "Hydrotesting" is the testing of piping or tubing by filling with water and pressurizing to test for integrity.

(v) "Impregnation" is the process of filling pores of a formed powder part, usually with a liquid such as a lubricant, or mixing particles of a nonmetallic substance in a matrix of metal powder.

(w) "In-process control technology" is the conservation of chemicals and water throughout the production operations to reduce the amount of wastewater to be discharged.

(x) "Metal powder production" operations are mechanical process operations which convert metal to a finely divided form.

(y) "Milling" is the mechanical treatment of a nonferrous metal to produce powder, or to coat one component of a powder mixture with another.

(z) "Neat oil" is a pure oil with no or few impurities added. In nonferrous

metals forming, its use is mostly as a lubricant.

(aa) "Powder forming" includes forming and compressing powder into a fully dense finished shape, and is usually done within closed dies.

(bb) "Precious metals" include gold, platinum, palladium, and silver and their alloys. Any alloy containing 30 or greater percent by weight of precious metals is considered a precious metal alloy.

(cc) "Product testing" includes operations such as dye penetrant testing, hydrotesting, and ultrasonic testing.

(dd) "Refractory metals" includes the metals of columbium, tantalum, molybdenum, rhenium, tungsten and vanadium and their alloys.

(ee) "Rolling" is the reduction in thickness or diameter of a workpiece by passing it between lubricated steel rollers.

(ff) "Roll bonding" is the process by which a permanent bond is created between two metals by rolling under high pressure in a bonding mill (co-rolling).

(gg) "Sawing" is cutting a workpiece with a band, blade, or circular disc having teeth.

(hh) "Shot casting" is the production of shot by pouring molten metal in finely divided streams to form spherical particles.

(ii) "Stationary casting" is the pouring of molten metal into molds and allowing the metal to cool.

(jj) "Surface treatment" is a chemical or electrochemical treatment applied to the surface of a metal. Such treatments include pickling, etching, conversion coating, phosphating, and chromating. Surface treatment baths are usually followed by a water rinse. The rinse may consist of single or multiple stage rinsing. For the purposes of this part, a surface treatment operation is defined as a bath followed by a rinse, regardless of the number of stages. Each surface treatment bath, rinse combination is entitled to discharge allowance.

(kk) "Swaging" is a process in which a solid point is formed at the end of a tube, rod, or bar by the repeated blows of one or more pairs of opposing dies.

(ll) "Tube reducing" is an operation which reduces the diameter and wall thickness of tubing with a mandrel and a pair of rolls with tapered grooves.

(mm) "Tumbling" or "barrel finishing" is an operation in which castings, forgings, or parts pressed from metal powder are rotated in a barrel with ceramic or metal slugs or abrasives to remove scale, fins, or burrs. It may be done dry or with an aqueous solution.

(nn) "Ultrasonic testing" is a nondestructive test which applies sound, at a frequency above about 20 HJz, to metal, which has been immersed in liquid (usually water) to locate inhomogeneities or structural discontinuities.

(oo) "Wet air pollution control scrubbers" are air pollution control devices used to remove particulates and fumes from air by entraining the pollutants in a water spray.

(pp) "Grab sample" is a single sample which is collected at a time and place most representative of total discharge.

(qq) "Composite sample" is a sample composed of no less than eight grab samples taken over the compositing period.

(rr) A "flow proportional composite sample" is composed of grab samples collected continuously or discretely in proportion to the total flow at time of collection or to the total flow since collection of the previous grab sample. The grab volume or frequency of grab collection may be varied in proportion to flow.

(ss) The term "control authority" is defined as the POTW if it has an approved pretreatment program; in the absence of such a program, the NPDES State if it has an approved pretreatment program or EPA if the State does not have an approved program.

(tt) "Continuous operations" means that the industrial user introduces regulated wastewaters to the POTW throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.

(uu) "Intermittent operations" means the industrial users does not have a continuous operation.

(vv) The term "off-kg (off-lb)" means the mass of metal or metal alloy removed from a forming operation at the end of a process cycle for transfer to a different machine or process.

§ 471.03 Compliance date for PSES.

The compliance date for PSES under this regulation is August 23, 1988.

Subpart A—Lead-Tin-Bismuth Forming Subcategory

§ 471.10 Applicability; description of the lead-tin-bismuth forming subcategory.

This subpart applies to discharges of pollutants to waters of the United States, and introductions of pollutants into publicly owned treatment works from the process operations of the lead-tin-bismuth forming subcategory.

§ 471.11 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations for the process operations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

(a) *Rolling spent emulsions.*

SUBPART A—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth rolled with emulsions	
Antimony	0.068	0.030
Lead	0.010	0.005
Oil and grease	0.468	0.231
TSS	0.960	0.457
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(b) *Rolling spent soap solutions.*

SUBPART A—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pound) of lead-tin-bismuth rolled with soap solutions	
Antimony	0.125	0.055
Lead	0.019	0.009
Oil and grease	0.860	0.520
TSS	1.80	0.840
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(c) *Drawing spent neat oils—Subpart A—BPT.* There shall be no discharge of process wastewater pollutants.

(d) *Drawing spent emulsions.*

SUBPART A—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth drawn with emulsions	
Antimony	0.076	0.034
Lead	0.011	0.005
Oil and grease	0.526	0.316
TSS	1.08	0.513
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(e) *Drawing spent soap solutions.*

SUBPART A—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth drawn with soap solutions	
Antimony	0.022	0.010
Lead	0.003	0.002
Oil and grease	0.149	0.090
TSS	0.306	0.146
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(f) *Extrusion press and solution heat treatment contact cooling water.*

SUBPART A—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds of lead-tin-bismuth heat treated	
Antimony	4.14	1.850
Lead	0.605	0.288
Oil and grease	28.80	17.30
TSS	59.10	28.10
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(g) *Extrusion press hydraulic fluid leakage.*

SUBPART A—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth extruded	
Antimony	0.158	0.071
Lead	0.023	0.011
Oil and grease	1.10	0.660
TSS	2.26	1.07
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(h) *Continuous strip casting contact cooling water.*

SUBPART A—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth cast by the continuous strip method	
Antimony	0.003	0.001
Lead	0.0014	0.0002
Oil and grease	0.020	0.012
TSS	0.041	0.020
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(i) *Semi-continuous ingot casting contact cooling water.*

SUBPART A—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth ingot cast by the sem-continuous method	
Antimony	0.085	0.038
Lead	0.013	0.006
Oil and grease	0.588	0.353
TSS	1.21	0.574
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(j) *Shot casting contact cooling water.*

SUBPART A—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth shot cast	
Antimony	0.017	0.048
Lead	0.016	0.008
Oil and grease	0.746	0.448
TSS	1.53	0.728
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(k) *Shot-forming wet air pollution control scrubber blowdown.*

SUBPART A—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth shot formed	
Antimony	1.69	0.753
Lead	0.247	0.118
Oil and grease	11.8	7.06
TSS	24.1	11.5
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(l) *Alkaline cleaning spent baths.*

SUBPART A—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth alkaline cleaned	
Antimony	0.345	0.154
Lead	0.051	0.024
Oil and grease	2.40	1.44
TSS	4.92	2.34
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(m) *Alkaline cleaning rinse.*

SUBPART A—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth alkaline cleaned	
Antimony	6.78	3.02
Lead	0.991	0.472
Oil and grease	47.2	28.4
TSS	96.8	46.0
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(n) *Swaging spent emulsions.*

SUBPART A—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth swaged with emulsion	
Antimony	0.005	0.002
Lead	0.0007	0.0004
Oil and grease	0.036	0.022
TSS	0.073	0.034
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(o) *Degreasing spent solvents—Subpart A—BPT.* There shall be no discharge of process wastewater pollutants.

§ 471.12 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(a) *Rolling spent emulsions.*

SUBPART A—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth rolled with emulsion	
Antimony	0.067	0.030
Lead	0.010	0.005

(b) *Rolling spent soap solutions.*

SUBPART A—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth rolled with soap solutions	
Antimony	0.120	0.055
Lead	0.018	0.009

(c) *Drawing spent neat oils—Subpart A—BAT.* There shall be no discharge of process wastewater pollutants.

(d) *Drawing spent emulsions.*

SUBPART A—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth drawn with emulsions	
Antimony	0.080	0.034
Lead	0.011	0.005

(e) *Drawing spent soap solutions.*

SUBPART A—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth drawn with soap solutions	
Antimony	0.022	0.010
Lead	0.003	0.002

(f) *Extrusion press and solution heat treatment contact colling water.*

SUBPART A—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth heat treated	
Antimony	0.414	0.185
Lead	0.061	0.030

(g) *Extrusion press hydraulic fluid leakage.*

SUBPART A—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth extruded	
Antimony	0.158	0.071
Lead	0.023	0.011

(h) *Continuous strip casting contact cooling water.*

SUBPART A—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth cast by the continuous strip method	
Antimony	0.003	0.001
Lead	0.0004	0.0002

(i) *Semi-continuous ingot casting contact cooling water.*

SUBPART A—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth cast by the continuous strip method	
Antimony	0.009	0.004
Lead	0.001	0.0006

(j) *Shot casting contact cooling water.*

SUBPART A—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth shot cast	
Antimony	0.107	0.048
Lead	0.016	0.008

(k) *Shot-forming wet air pollution control scrubber blowdown.*

SUBPART A—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth shot formed	
Antimony	0.169	0.076
Lead	0.025	0.102

(l) *Alkaline cleaning spent baths.*

SUBPART A—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth alkaline cleaned	
Antimony	0.345	0.154
Lead	0.051	0.024

(m) *Alkaline cleaning rinse.*

SUBPART A—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth alkaline cleaned	
Antimony	0.678	0.302
Lead	0.099	0.047

(n) *Swaging spent emulsions.*

SUBPART A—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth swaged with emulsion	
Antimony	0.005	0.002
Lead	0.0008	0.0004

(o) *Degreasing spent solvents—Subpart A—BAT.* There shall be no discharge of process wastewater pollutants.

§ 471.13 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards. The mass of pollutants in the lead-tin-bismuth forming operations' process wastewater shall not exceed the following values:

(a) *Rolling spent emulsions.*

SUBPART A—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth rolled with emulsions	
Antimony	0.067	0.030
Lead	0.010	0.005
Oil and grease	0.468	0.281
TSS	0.960	0.457
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(b) *Rolling spent soap solutions.*

SUBPART A—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth rolled with soap solutions	
Antimony	0.120	0.055
Lead	0.018	0.009
Oil and grease	0.860	0.520
TSS	1.80	0.840
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(c) *Drawing spent neat oils—Subpart A—NSPS.* There shall be no discharge of process wastewater pollutants.

(d) *Drawing spent emulsions.*

SUBPART A—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth drawn with emulsions	
Antimony	0.076	0.034
Lead	0.011	0.005
Oil and grease	0.526	0.316
TSS	1.087	0.513
pH		[1]

[1] Within the range of 7.5 to 10.0 at all times.

(e) *Drawing spent soap solutions.*

SUBPART A—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth drawn with soap solutions	
Antimony	0.022	0.010
Lead	0.003	0.002
Oil and grease	0.149	0.090
TSS	0.306	0.148
pH		[1]

[1] Within the range of 7.5 to 10.0 at all times.

(f) *Extrusion press and solution heat treatment contact cooling water.*

SUBPART A—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth heat treated	
Antimony	0.414	0.185
Lead	0.061	0.030
Oil and grease	2.80	1.72
TSS	5.91	2.81
pH		[1]

[1] Within the range of 7.5 to 10.0 at all times.

(g) *Extrusion press hydraulic fluid leakage.*

SUBPART A—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth extruded	
Antimony	0.158	0.071
Lead	0.023	0.011
Oil and grease	1.10	0.660
TSS	2.26	1.07
pH		[1]

[1] Within the range of 7.5 to 10.0 at all times.

(h) *Continuous strip casting contact cooling water.*

SUBPART A—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth cast by the continuous strip method	
Antimony	0.003	0.001
Lead	0.0004	0.0002
Oil and grease	0.020	0.012
TSS	0.041	0.020
pH		[1]

[1] Within the range of 7.5 to 10.0 at all times.

(i) *Semi-continuous ingot casting contact cooling water.*

SUBPART A—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth ingot cast by the semi-continuous method	
Antimony	0.009	0.038
Lead	0.013	0.0006
Oil and grease	0.059	0.036
TSS	0.121	0.058
pH		[1]

[1] Within the range of 7.5 to 10.0 at all times.

(j) *Shot casting contact cooling water.*

SUBPART A—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth shot cast	
Antimony	0.107	0.048
Lead	0.016	0.008
Oil and grease	0.746	0.448
TSS	1.53	0.728
pH		[1]

[1] Within the range of 7.5 to 10.0 at all times.

(k) *Shot-forming wet air pollution control scrubber blowdown.*

SUBPART A—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth shot formed	
Antimony	0.109	0.076
Lead	0.025	0.012
Oil and grease	1.18	0.706
TSS	2.41	1.15
pH		[1]

[1] Within the range of 7.5 to 10.0 at all times.

(l) *Alkaline cleaning spent baths.*

SUBPART A—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth alkaline cleaned	
Antimony	0.345	0.154
Lead	0.051	0.024
Oil and grease	2.40	1.44
TSS	4.92	2.34
pH		[1]

[1] Within the range of 7.5 to 10.0 at all times.

(m) *Alkaline cleaning rinse.*

SUBPART A—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth alkaline cleaned	
Antimony	0.678	0.302
Lead	0.099	0.047
Oil and grease	4.72	2.84
TSS	9.66	4.60
pH		[1]

[1] Within the range of 7.5 to 10.0 at all times.

(n) *Swaging spent emulsions.*

SUBPART A—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth swaged with emulsion	
Antimony	0.005	0.002
Lead	0.0008	0.0004
Oil and grease	0.036	0.022
TSS	0.073	0.035
pH		[1]

[1] Within the range of 7.5 to 10.0 at all times.

(o) *Degreasing spent solvents—Subpart A—NSPS.* There shall be no discharge of process wastewater pollutants.

§ 471.14 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and by August 23, 1988, achieve the pretreatment standards for existing sources (PSES). The mass of wastewater pollutants in lead-tin-bismuth forming process wastewater introduced into a POTW shall not exceed the following values:

(a) *Rolling spent emulsions.*

SUBPART A—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth rolled with emulsions	
Antimony	0.067	0.030
Lead	0.010	0.005

(b) *Rolling spent soap solutions.*

SUBPART A—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth rolled with soap solutions	
Antimony	0.120	0.055
Lead	0.018	0.009

(c) *Drawing spent neat oils—Subpart A—PSES.* There shall be no discharge of process wastewater pollutants.

(d) *Drawing spent emulsions.*

SUBPART A—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth drawn with emulsions	
Antimony	0.076	0.034
Lead	0.011	0.005

(e) *Drawing spent soaps solutions.*

SUBPART A—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth drawn with soap olutions	
Antimony	0.022	0.010
Lead	0.003	0.002

(f) *Extrusion press and solution heat treatment contact cooling water.*

SUBPART A—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth heat treated	
Antimony	0.414	0.185
Lead	0.061	0.029

(g) *Extrusion press hydraulic fluid leakage.*

SUBPART A—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth extruded	
Antimony	0.158	0.071
Lead	0.023	0.011

(h) *Continuous strip casting contact cooling water.*

SUBPART A—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth cast by the continuous strip method	
Antimony	0.003	0.001
Lead	0.0004	0.00

(i) *Semi-continuous ingot casting contact cooling water.*

SUBPART A—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth cast by the semi-continuous strip method	
Antimony	0.009	0.004
Lead	0.001	0.0006

(j) *Shot casting contact cooling water.*

SUBPART A—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth shot cast	
Antimony	0.107	0.048
Lead	0.016	0.008

(k) *Shot-forming wet air pollution control scrubber blowdown.*

SUBPART A—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth shot formed	
Antimony	0.169	0.076
Lead	0.025	0.012

(l) *Alkaline Cleaning Spent Baths.*

SUBPART A—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth alkaline cleaned	
Antimony	0.345	0.154
Lead	0.051	0.024

(m) *Alkaline cleaning rinse.*

SUBPART A—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth alkaline cleaned	
Antimony	0.678	0.302
Lead	0.099	0.047

(n) *Swaging spent emulsions.*

SUBPART A—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth swaged with emulsion	
Antimony	0.005	0.002
Lead	0.0008	0.0004

(o) *Degreasing spent solvents—Subpart A—PSES.* There shall be no discharge of process wastewater pollutants.

§ 471.15 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new sources subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources. The mass of wastewater pollutants in lead-tin-bismuth forming process wastewater introduced into a POTW shall not exceed the following values:

(a) *Rolling spent emulsions.*

SUBPART A—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth rolled with emulsions	
Antimony	0.067	0.030
Lead	0.010	0.005

(b) *Rolling spent soap solutions.*

SUBPART A—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth rolled with soap solutions	
Antimony	0.120	0.055
Lead	0.018	0.009

(c) *Drawing spent neat oils—Subpart A—PSNS.* There shall be no discharge of process wastewater pollutants.

(d) *Drawing spent emulsions.*

SUBPART A—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth drawn with emulsions	
Antimony	0.076	0.034
Lead	0.011	0.005

(e) *Drawing spent soap solutions.*

SUBPART A—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth drawn with soap solutions	
Antimony	0.022	0.010
Lead	0.003	0.002

(f) *Extrusion press and solution heat treatment contact cooling water.*

SUBPART A—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth heat treated	
Antimony	0.414	0.185
Lead	0.061	0.029

(g) *Extrusion press hydraulic fluid leakage.*

SUBPART A—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth extruded	
Antimony	0.159	0.071
Lead	0.023	0.011

(h) *Continuous strip casting contact cooling water.*

SUBPART A—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth cast by the continuous strip method	
Antimony	0.003	0.001
Lead	0.0004	0.0002

(i) *Semi-continuous ingot casting contact cooling water.*

SUBPART A—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth ingot cast by the semi-continuous method	
Antimony	0.009	0.004
Lead	0.013	0.006

(j) *Shot casting contact cooling water.*

SUBPART A—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth shot cast	
Antimony	0.107	0.048
Lead	0.016	0.008

(k) *Shot forming wet air pollution control scrubber blowdown.*

SUBPART A—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth shot formed	
Antimony	0.109	0.076
Lead	0.025	0.012

(l) *Alkaline cleaning spent baths.*

SUBPART A—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth alkaline cleaned	
Antimony	0.345	0.154
Lead	0.051	0.024

(m) *Alkaline cleaning rinse.*

SUBPART A—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth alkaline cleaned	
Antimony	0.678	0.302
Lead	0.099	0.047

(n) *Swaging spent emulsions.*

SUBPART A—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of lead-tin-bismuth swaged with emulsion	
Antimony	0.005	0.003
Lead	0.0008	0.0004

(o) *Degreasing spent solvents—Subpart A—PSNS.* There shall be no discharge of process wastewater pollutants.

§ 471.16 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT) [Reserved].

Subpart B—Magnesium Forming Subcategory

§ 471.20 Applicability; description of the magnesium forming subcategory.

This subpart applies to discharges of pollutants to waters of the United States, and introductions of pollutants into publicly owned treatment works from the process operations of the magnesium forming subcategory.

§ 471.21 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations for the process operations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

(a) *Rolling spent emulsions.*

SUBPART B—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium rolled with emulsions	
Chromium	0.033	0.014
Zinc	0.109	0.046
Ammonia	9.95	4.37
Fluoride	4.440	1.97
Oil and grease	1.49	0.895
TSS	3.06	1.46
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(b) *Forging spent lubricants*—Subpart *B—BPT.* There shall be no discharge of process wastewater pollutants.

(c) *Forging contact cooling water.*

SUBPART B—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of forged magnesium cooled with water	
Chromium	1.27	0.520
Zinc	4.22	1.77
Ammonia	385	170
Fluoride	172	76.3
Oil and grease	57.8	34.7
TSS	119	56.4
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(d) *Forging equipment cleaning wastewater.*

SUBPART B—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium forged	
Chromium	0.018	0.007
Zinc	0.059	0.025
Ammonia	5.32	2.34
Fluoride	2.38	1.06
Oil and grease	0.798	0.479
TSS	1.64	0.778
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(e) *Direct chill casting contact cooling water.*

SUBPART B—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium cast with direct chill methods	
Chromium	1.74	0.711
Zinc	5.77	2.41
Ammonia	527	232
Fluoride	235	105
Oil and grease	79.0	47.4
TSS	162	77.1

SUBPART B—BPT—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(f) *Surface treatment spent baths.*

SUBPART B—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium surface treated	
Chromium	0.205	0.084
Zinc	0.681	0.285
Ammonia	62.1	27.3
Fluoride	27.8	12.3
Oil and grease	9.32	5.59
TSS	19.1	9.09
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(g) *Surface treatment rinse.*

SUBPART B—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium surface treated	
Chromium	8.32	3.4
Zinc	27.6	11.5
Ammonia	2520	1110
Fluoride	1130	499
Oil and grease	378	227
TSS	775	369
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(h) *Sawing or grinding spent emulsions.*

SUBPART B—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium sawed or ground	
Chromium	0.009	0.004
Zinc	0.029	0.012
Ammonia	2.60	1.15
Fluoride	1.16	0.515
Oil and grease	0.390	0.234
TSS	0.800	0.381
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(i) *Degreasing spent solvents—Subpart B—BPT.* There shall be no discharge of process wastewater pollutants.

(j) *Wet air pollution control scrubber blowdown.*

SUBPART B—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium sanded and repaired or forged	
Chromium	0.273	0.112
Zinc	0.904	0.378
Ammonia	82.5	36.3
Fluoride	36.9	16.4
Oil and grease	12.4	7.43
TSS	25.4	12.1
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

§ 471.22 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(a) *Rolling spent emulsions.*

SUBPART B—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium rolled with emulsions	
Chromium	0.033	0.014
Zinc	0.109	0.046
Ammonia	9.95	4.37
Fluoride	4.44	1.97

(b) *Forging spent lubricants*—Subpart B—BAT. There shall be no discharge of process wastewater pollutants.

(c) *Forging contact cooling water.*

SUBPART B—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of forged magnesium cooled with water	
Chromium	0.127	0.052
Zinc	0.422	0.177
Ammonia	38.5	17.0
Fluoride	17.2	7.63

(d) *Forging equipment cleaning wastewater.*

SUBPART B—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium forged	
Chromium	0.002	0.0007
Zinc	0.006	0.003
Ammonia	0.532	0.234
Fluoride	0.238	0.106

(e) *Direct chill casting contact cooling water.*

SUBPART B—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium cast with direct chill methods	
Chromium	1.74	0.711
Zinc	5.77	2.41
Ammonia	527	232
Fluoride	235	105

(f) *Surface treatment spent baths.*

SUBPART B—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium surface treated	
Chromium	0.205	0.084
Zinc	0.681	0.285
Ammonia	62.1	27.3
Fluoride	27.8	12.3

(g) *Surface treatment rinse.*

SUBPART B—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium surface treated	
Chromium	0.832	0.340
Zinc	2.76	1.16
Ammonia	252	111
Fluoride	113	49.9

(h) *Sawing or grinding spent emulsions.*

SUBPART B—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium sawed or ground	
Chromium	0.009	0.004
Zinc	0.029	0.012
Ammonia	2.60	1.15
Fluoride	1.16	0.515

(i) *Degreasing spent solvents—Subpart B—BAT.* There shall be no discharge of process wastewater pollutants.

(j) *Wet air pollution control scrubber blowdown.*

SUBPART B—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium sanded and repaired or forged	
Chromium	0.273	0.112
Zinc	0.904	0.378
Ammonia	82.5	36.3
Fluoride	38.9	16.4

§ 471.23 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards. The mass of pollutants in the magnesium forming process wastewater shall not exceed the following values:

(a) *Rolling spent emulsions.*

SUBPART B—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off/kg (pounds per million off-pounds) of magnesium rolled with emulsions	
Chromium	0.028	0.011
Zinc	0.076	0.032
Ammonia	9.95	4.37
Fluoride	4.44	1.97
Oil and grease	0.748	0.748
TSS	1.12	0.895
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(b) *Forging spent lubricants—Subpart B—NSPS.* There shall be no discharge of process wastewater pollutants.

(c) *Forging contact cooling water.*

SUBPART B—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off/kg (pounds per million off-pounds) of forged magnesium cooled with water	
Chromium	0.117	0.044
Zinc	0.295	0.122
Ammonia	38.5	17.0
Fluoride	17.2	7.63
Oil and grease	2.89	2.89
TSS	4.34	3.47
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(d) *Forging equipment cleaning wastewater.*

SUBPART B—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off/kg (pounds per million off-pounds) of magnesium forged	
Chromium	0.002	0.0006
Zinc	0.004	0.002
Ammonia	0.532	0.234
Fluoride	0.238	0.106
Oil and grease	0.040	0.040
TSS	0.060	0.048
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(e) *Direct chill casting contact cooling water.*

SUBPART B—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium cast with direct chill methods	
Chromium	1.46	0.593
Zinc	4.03	1.66
Ammonia	527	232
Fluoride	235	105
Oil and grease	39.5	39.5
TSS	59.3	47.4
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(f) *Surface treatment spent baths.*

SUBPART B—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium surface treated	
Chromium	0.173	0.070
Zinc	0.476	0.196
Ammonia	62.1	27.3
Fluoride	27.8	12.3
Oil and grease	4.66	4.66
TSS	6.99	5.60
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times

(g) *Surface treatment rinse.*

SUBPART B—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pound pers million off-pounds) of magnesium surface treated	
Chromium	0.700	0.284
Zinc	1.93	0.794
Ammonia	252	111
Fluoride	113	49
Oil and grease	18.9	18.9
TSS	28.4	22.7
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times

(h) *Sawing or grinding spent emulsions.*

SUBPART B—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium sawed or ground	
Chromium	0.007	0.003
Zinc	0.020	0.008
Ammonia	2.60	1.15
Fluoride	1.16	0.575
Oil and grease	0.195	0.195
TSS	0.293	0.234
pH	(1)	(1)

(1) Within the range of 7.5 to 10.0 at all times.

(i) *Degreasing spent Solvents—Subpart B—NSPS.* There shall be no discharge of process wastewater pollutants.

(j) *Wet air pollution control scrubber blowdown.*

SUBPART B—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium sanded and repaired or forged	
Chromium	0.229	0.093
Zinc	0.632	0.260
Ammonia	82.5	36.3
Fluoride	36.9	16.4
Oil and grease	6.19	6.19
TSS	9.29	7.43
pH	(1)	(1)

(1) Within the range of 7.5 to 10.0 at all times.

§ 471.24 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and by August 23, 1988 achieve the following pretreatment standards for existing sources (PSES). The mass of wastewater pollutants in magnesium forming process wastewater introduced into a POTW shall not exceed the following values:

(a) *Rolling spent emulsions.*

SUBPART B—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off pounds) of magnesium rolled with emulsions	
Chromium	0.033	0.014
Zinc	0.109	0.046
Ammonia	9.95	4.37
Fluoride	4.44	1.97

(b) *Forging spent lubricants—Subpart B—PSE.* There shall be no discharge of process wastewater pollutants.

(c) *Forging contact cooling water.*

SUBPART B—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium cooled with water	
Chromium	0.127	0.052
Zinc	0.422	0.177
Ammonia	38.5	17.0
Fluoride	17.2	7.63

(d) *Forging equipment cleaning wastewater.*

SUBPART B—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium forged	
Chromium	0.002	0.0007
Zinc	0.006	0.003
Ammonia	0.532	0.234
Fluoride	0.238	0.106

(e) *Direct chill casting contact cooling water.*

SUBPART B—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium cast with direct chill methods	
Chromium	1.74	0.711
Zinc	5.77	2.41
Ammonia	527	232
Fluoride	235	105

(f) *Surface treatment spent baths.*

SUBPART B—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium surface treated	
Chromium	0.205	0.084
Zinc	0.681	0.285
Ammonia	62.1	27.3
Fluoride	27.8	12.3

(g) *Surface treatment rinse.*

SUBPART B—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium surface treated	
Chromium	0.832	0.340
Zinc	2.76	1.16

SUBPART B—PSES—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Ammonia	252	111
Fluoride	113	49.9

(h) *Sawing or grinding spent emulsions.*

SUBPART B—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium sawed or ground	
Chromium	0.009	0.004
Zinc	0.029	0.102
Ammonia	2.60	1.15
Fluoride	1.16	0.515

(i) *Degreasing Spent Solvents—Subpart B—PSES.* There shall be no discharge of process wastewater pollutants.

(j) *Wet air pollution control scrubber blowdown.*

SUBPART B—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium sanded and repaired or forged	
Chromium	0.273	0.112
Zinc	0.904	0.378
Ammonia	8.25	36.3
Fluoride	36.9	16.4

§ 471.25 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS). The mass of wastewater pollutants in magnesium forming process wastewater introduced into a POTW shall not exceed the following values:

(a) *Rolling spent emulsions.*

SUBPART B—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium forged	
Chromium	0.028	0.011
Zinc	0.076	0.032
Ammonia	9.95	4.37
Fluoride	4.44	1.97

(b) *Forging spent lubricants—Subpart B—PSNS.* There shall be no discharge of process wastewater pollutants.

(c) *Forging contact cooling water.*

SUBPART B—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of forged magnesium cooled with water	
Chromium	0.107	0.044
Zinc	0.295	0.122
Ammonia	38.5	17.0
Fluoride	17.2	7.63

(d) *Forging equipment cleaning wastewater.*

SUBPART B—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium forged	
Chromium	0.002	0.0006
Zinc	0.004	0.002
Ammonia	0.532	0.234
Fluoride	0.238	0.106

(e) *Direct chill casting contact cooling water.*

SUBPART B—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium cast with direct chill methods	
Chromium	1.46	0.583
Zinc	4.03	1.66
Ammonia	527	232
Fluoride	235	105

(f) *Surface treatment spent baths.*

SUBPART B—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium surface treated	
Chromium	0.173	0.070
Zinc	0.476	0.196
Ammonia	62.1	27.3
Fluoride	27.8	12.3

(g) *Surface treatment rinse.*

SUBPART B—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium surface treated	
Chromium	0.700	0.284
Zinc	1.93	0.794
Ammonia	252	111
Fluoride	113	49.9

(h) *Sawing or grinding spent emulsions.*

SUBPART B—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium sawed or ground	
Chromium	0.007	0.003
Zinc	0.020	0.008
Ammonia	2.60	1.15
Fluoride	1.16	0.515

(i) *Degreasing spent solvents—Subpart B—PSNS.* There shall be no discharge of process wastewater pollutants.

(j) *Wet air pollution control scrubber blowdown.*

SUBPART B—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of magnesium sanded and repaired or forged	
Chromium	0.229	0.093
Zinc	0.632	0.260
Ammonia	82.5	36.3
Fluoride	36.9	16.4

§ 471.26 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT) [Reserved].

Subpart C—Nickel-Cobalt Forming Subcategory

§ 471.30 Applicability; description of the nickel-cobalt forming subcategory.

This subpart applies to discharges of pollutants to waters of the United States, and introductions of pollutants into publicly owned treatment works from the process operations of the nickel-cobalt forming subcategory.

§ 471.31 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30–125.32, any existing point source subject to this subpart must achieve the following effluent limitations for the process operations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

(a) *Rolling spent neat oils—Subpart C—BPT.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt rolled with emulsions	
Chromium	0.075	0.031
Nickel	0.327	0.216
Fluoride	10.1	4.49
Oil and grease	3.4	2.04
TSS	6.97	3.32
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(c) *Rolling contact cooling water.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt rolled with water	
Chromium	1.66	0.679
Nickel	7.24	4.79
Fluoride	22.5	99.6
Oil and grease	75.4	45.3
TSS	155	73.5
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(d) *Tube reducing spent lubricant—Subpart C—BPT.* There shall be no discharge of process wastewater pollutants.

(e) *Drawing spent neat oils—Subpart C—BPT.* There shall be no discharge of process wastewater pollutants

(f) *Drawing spent emulsions.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt drawn with emulsions	
Chromium	0.042	0.017
Nickel	0.183	0.121
Fluoride	5.68	2.52

SUBPART C—BPT—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Oil and grease	1.91	1.15
TSS	3.91	1.86
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(g) *Extrusion spent lubricants—Subpart C—BPT.* There shall be no discharge of process wastewater pollutants.

(h) *Extrusion press or solution heat treatment contact cooling water.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt heat treated	
Chromium	0.037	0.015
Nickel	0.160	0.106
Fluoride	4.95	2.20
Oil and grease	1.67	0.999
TSS	3.41	1.63
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(i) *Extrusion press hydraulic fluid leakage.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt extruded	
Chromium	0.102	0.042
Nickel	0.446	0.295
Fluoride	13.8	6.13
Oil and grease	4.64	2.79
TSS	9.51	4.53
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(j) *Forging equipment cleaning wastewater.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt forged	
Chromium	0.018	0.007
Nickel	0.077	0.051
Fluoride	2.38	1.06
Oil and grease	0.800	0.480
TSS	1.640	0.780
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(k) *Forging contact cooling water.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of forged nickel-cobalt cooled with water	
Chromium	108	44.1
Nickel	471	311
Fluoride	14,600	6,470
Oil and grease	4,900	2,940
TSS	10,100	4,780
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(l) *Forging press hydraulic fluid leakage.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt forged	
Chromium	0.083	0.034
Nickel	0.359	0.238
Fluoride	11.2	4.94
Oil and grease	3.74	2.25
TSS	7.67	3.65
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(m) *Forging spent lubricants—Subpart C—BPT.* There shall be no discharge of process wastewater pollutants.

(n) *Stationary casting contact cooling water.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt cast with stationary casting methods	
Chromium	5.33	2.18
Nickel	23.3	15.4
Fluoride	720	320
Oil and grease	242	145
TSS	496	236
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(o) *Vacuum melting steam condensate—Subpart C—BPT.* There shall be no allowance for the discharge of process wastewater pollutants.

(p) *Metal powder production atomization wastewater.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt metal powder atomized	
Chromium	1.16	0.472
Nickel	5.03	3.33

SUBPART C—BPT—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Fluoride	156	69.2
Oil and grease	52.4	31.5
TSS	108	51.1
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(q) *Annealing and solution heat treatment contact cooling water—Subpart C—BPT.* There shall be no allowance for the discharge of process wastewater pollutants.

(r) *Wet air pollution control scrubber blowdown.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt formed	
Chromium	0.357	0.146
Nickel	1.56	1.03
Fluoride	48.2	21.4
Oil and grease	16.2	9.72
TSS	33.2	15.8
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(s) *Surface treatment spent baths.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt surface treated	
Chromium	0.412	0.169
Nickel	1.80	1.19
Fluoride	55.7	24.7
Oil and grease	18.7	11.2
TSS	38.4	18.3
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(t) *Surface treatment rinse.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt surface treated	
Chromium	10.4	4.25
Nickel	45.3	30.0
Fluoride	1410	623
Oil and grease	472	283
TSS	968	460
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(u) *Alkaline cleaning spent baths.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt alkaline cleaned	
Chromium	0.105	0.006
Nickel	0.065	0.043
Fluoride	2.02	0.895
Oil and grease	0.678	0.407
TSS	1.39	0.661
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(v) *Alkaline cleaning rinse.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt alkaline cleaned	
Chromium	1.03	0.420
Nickel	4.48	2.96
Fluoride	139	61.5
Oil and grease	46.6	26.0
TSS	95.6	45.5
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(w) *Molten salt rinse.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt treated with molten salt	
Chromium	0.550	0.225
Nickel	2.40	1.59
Fluoride	74.4	33.0
Oil and grease	25.0	15.0
TSS	51.3	24.5
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(x) *Ammonia rinse.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt treated with ammonia solution	
Chromium	0.007	0.003
Nickel	0.029	0.019
Fluoride	0.681	0.391
Oil and grease	0.296	0.178
TSS	0.607	0.289
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(y) *Sawing or grinding spent emulsions.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt sawed or ground with emulsions	
Chromium	0.018	0.007
Nickel	75.8	50.1
Fluoride	2,350	1,040
Oil and grease	788	472
TSS	1,620.4	769
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(z) *Sawing or grinding rinse.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground nickel-cobalt rinsed	
Chromium	0.787	0.326
Nickel	3.48	2.30
Fluoride	108	47.8
Oil and grease	36.2	21.7
TSS	74.2	35.3
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(aa) *Steam Cleaning Condensate.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt steam cleaned	
Chromium	0.013	0.006
Nickel	0.058	0.039
Fluoride	1.79	0.795
Oil and grease	0.802	0.361
TSS	1.24	0.587
pH		(1)

[1] Within the range of 7.5 to 10.0 at all times.

(bb) *Hydrostatic tube testing and ultrasonic testing wastewater—Subpart C—BPT.* There shall be no allowance for the discharge of process wastewater pollutants.

(cc) *Degreasing spent solvents—Subpart C—BPT.* There shall be no discharge of process wastewater pollutants.

(dd) *Dye penetrant testing wastewater.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt tested with dye penetrant method	
Chromium	0.094	0.039
Nickel	0.409	0.271

SUBPART C—BPT—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Fluoride	12.7	5.63
Oil and grease	4.26	2.56
TSS	8.74	4.16
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(ee) *Electrocoating rinse.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt electrocoated	
Chromium	1.48	0.607
Nickel	6.47	4.28
Fluoride	201	89.0
Oil and grease	67.4	40.5
TSS	138	65.7
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(ff) *Miscellaneous wastewater sources.*

SUBPART C—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt formed	
Chromium	0.108	0.044
Nickel	0.473	0.313
Fluoride	14.7	6.50
Oil and grease	4.92	2.95
TSS	10.1	4.80
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

§ 471.32 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30–125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(a) *Rolling spent neat oils—Subpart C—BAT.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt rolled with emulsions	
Chromium	0.063	0.026

SUBPART C—BAT—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Nickel	0.094	0.063
Fluoride	10.1	4.49

(c) *Rolling contact cooling water.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt rolled with water	
Chromium	0.028	0.011
Nickel	0.042	0.028
Fluoride	4.49	1.99

(d) *Tube reducing spent lubricants—Subpart C—BAT.* There shall be no discharge of process wastewater pollutants.

(e) *Drawing spent neat oils—Subpart C—BAT.* There shall be no discharge of process wastewater pollutants.

(f) *Drawing spent emulsions.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt drawn with emulsions	
Chromium	0.036	0.015
Nickel	0.053	0.036
Fluoride	5.68	2.52

(g) *Extrusion spent lubricants—Subpart C—BAT.* There shall be no discharge of process wastewater pollutants.

(h) *Extrusion press or solution heat treatment contact cooling water.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of extruded nickel-cobalt heat treated	
Chromium	0.031	0.013
Nickel	0.046	0.031
Fluoride	4.95	2.20

(i) *Extrusion press hydraulic fluid leakage.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt extruded	
Chromium	0.086	0.034
Nickel	0.128	0.086
Fluoride	13.8	6.13

(j) *Forging equipment cleaning wastewater.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt forged	
Chromium	0.002	0.0006
Nickel	0.002	0.002
Fluoride	0.238	0.106

(k) *Forging contact cooling water.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of forged nickel-cobalt cooled with water	
Chromium	0.009	0.004
Nickel	0.014	0.009
Fluoride	1.46	0.647

(l) *Forging press hydraulic fluid leakage.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt forged	
Chromium	0.069	0.028
Nickel	.103	0.069
Fluoride	11.2	4.94

(m) *Forging spent lubricants—Subpart C—BAT.* There shall be no discharge of process wastewater pollutants.

(n) *Stationary casting contact cooling water.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt cast with stationary casting methods	
Chromium	0.448	0.182
Nickel	.666	.448

SUBPART C—BAT—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Fluoride	72.0	32.0

(o) *Vacuum melting steam condensate—Subpart C—BAT.* There shall be no allowance for the discharge of wastewater pollutants.

(p) *Metal powder production atomization wastewater.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt metal powder atomized	
Chromium	0.970	0.393
Nickel	1.44	.970
Fluoride	156	69.2

(q) *Annealing and solution heat treatment contact cooling water—Subpart C—BAT.* There shall be no allowance for the discharge of wastewater pollutants.

(r) *Wet air pollution control scrubber blowdown.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt formed	
Chromium	0.300	0.122
Nickel	.446	.300
Fluoride	48.2	2.20

(s) *Surface treatment spent baths.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt surface treated	
Chromium	0.346	0.141
Nickel	.514	.346
Fluoride	55.7	24.7

(t) *Surface treatment rinse.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt surface treated	
Chromium	0.873	0.354
Nickel	1.30	873

SUBPART C—BAT—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Fluoride	141	62.3

(u) *Alkaline cleaning spent baths.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt alkaline cleaned	
Chromium	0.013	0.005
Nickel	0.019	0.103
Fluoride	2.02	0.895

(v) *Alkaline cleaning rinse.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt alkaline cleaned	
Chromium	0.036	0.035
Nickel	0.128	0.086
Fluoride	13.9	6.15

(w) *Molten salt rinse.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt treated with molten salt	
Chromium	0.047	0.019
Nickel	0.069	0.047
Fluoride	7.44	3.30

(x) *Ammonia rinse.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt treated with ammonia solution	
Chromium	0.006	0.002
Nickel	0.019	0.008
Fluoride	0.881	0.391

(y) *Sawing or grinding spent emulsions.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt sawed or ground with emulsions	
Chromium	0.015	0.006
Nickel	0.022	0.015
Fluoride	2.35	1.04

(z) *Sawing or grinding rinse.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground nickel-cobalt rinsed	
Chromium	0.067	0.027
Nickel	0.100	0.067
Fluoride	10.8	4.78

(aa) *Steam cleaning condensate.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt steam cleaned	
Chromium	0.011	0.005
Nickel	0.017	0.011
Fluoride	1.79	0.795

(bb) *Hydrostatic tube testing and ultrasonic testing wastewater—Subpart C—BAT.* There shall be no allowance for the discharge of process wastewater pollutants.

(cc) *Degreasing spent solvents—Subpart C—BAT.* There shall be no discharge of process wastewater pollutants.

(dd) *Dye penetrant testing wastewater.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt tested with dye penetrant method	
Chromium	0.094	0.039
Nickel	0.409	0.271
Fluoride	12.7	5.63

(ee) *Electrocoating rinse.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt electrocoated	
Chromium	1.25	0.506
Nickel	1.86	1.25
Fluoride	201	89.0

(ff) *Miscellaneous wastewater sources.*

SUBPART C—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt formed	
Chromium	0.091	0.037
Nickel	0.136	0.091
Fluoride	14.7	6.50

§ 471.33 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS). The mass of pollutants in the nickel-cobalt forming process wastewater shall not exceed the following values:

(a) *Rolling spent neat oils—Subpart C—NSPS.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt rolled with emulsions	
Chromium	0.063	0.026
Nickel	0.094	0.063
Fluoride	10.1	4.49
Oil and grease	1.70	1.70
TSS	2.55	2.04
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(c) *Rolling contact cooling water.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt rolled with water	
Chromium	0.028	0.012
Nickel	0.042	0.028
Fluoride	4.49	1.99
Oil and grease	0.754	0.754
TSS	1.13	0.905
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(d) *Tube reducing spent lubricant—Subpart C—NSPS.* There shall be no discharge of process wastewater pollutants.

(e) *Drawing spent neat oils—Subpart C—NSPS.* There shall be no discharge of process wastewater pollutants.

(f) *Drawing spent emulsions.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt drawn with emulsions	
Chromium	0.036	0.015
Nickel	0.053	0.036
Fluoride	5.68	2.52
Oil and grease	0.954	0.954
TSS	1.43	1.15
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(g) *Extrusion spent lubricants—Subpart C—NSPS.* There shall be no discharge of process wastewater pollutants.

(h) *Extrusion press or solution heat treatment contact cooling water.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of extruded nickel-cobalt heat treated	
Chromium	0.031	0.013
Nickel	0.046	0.031
Fluoride	4.95	2.20
Oil and grease	0.832	0.832
TSS	1.25	0.999
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(i) *Extrusion press hydraulic fluid leakage.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt extruded	
Chromium	0.086	0.035
Nickel	0.128	0.086
Fluoride	13.8	6.13
Oil and grease	2.32	2.32
TSS	3.48	2.79
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(j) *Forging equipment cleaning wastewater.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt forged	
Chromium	0.002	0.00006
Nickel	0.002	0.002
Fluoride	0.238	0.108
Oil and grease	0.040	0.040
TSS	0.060	0.048
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(k) *Forging contact cooling water.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of forged nickel-cobalt cooled with water	
Chromium	0.009	0.004
Nickel	0.014	0.009
Fluoride	1.46	0.647
Oil and grease	0.245	0.245
TSS	0.368	0.294
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(l) *Forging press hydraulic fluid leakage.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt forged	
Chromium	0.069	0.028
Nickel	0.103	0.069
Fluoride	11.2	4.94
Oil and grease	1.87	1.87
TSS	2.81	2.25
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(m) *Forging spent lubricants—Subpart C—NSPS.* There shall be no discharge of process wastewater pollutants.

(n) *Stationary casting contact cooling water.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt cast with stationary casting methods	
Chromium	0.448	0.182
Nickel	0.668	0.448
Fluoride	72.0	32.0
Oil and grease	12.1	12.1
TSS	18.2	14.5
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(o) *Vacuum melting steam condensate—Subpart C—NSPS.* There shall be no allowance for the discharge of process wastewater pollutants.

(p) *Metal powder production atomization wastewater.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt metal powder atomized	
Chromium	0.970	0.393
Nickel	1.44	0.970
Fluoride	156	69.2
Oil and grease	26.2	26.2
TSS	39.3	31.5
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(q) *Annealing and solution heat treatment contact cooling water—Subpart C—NSPS.* There shall be no allowance for the discharge of process wastewater pollutants.

(r) *Wet air pollution control scrubber blowdown.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt formed	
Chromium	0.300	0.122
Nickel	0.450	0.300
Fluoride	48.2	21.4
Oil and grease	8.1	8.1
TSS	12.2	9.72
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(s) *Surface treatment spent baths.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt surface treated	
Chromium	0.346	0.141
Nickel	0.515	0.346
Fluoride	55.7	24.7
Oil and grease	9.35	9.35
TSS	14.1	11.2
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(t) *Surface treatment rinse.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt surface treated	
Chromium	0.874	0.354
Nickel	1.30	0.873
Fluoride	141	82.3

SUBPART C—NSPS—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Oil and grease	23.6	23.6
TSS	35.4	28.3
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(u) *Alkaline cleaning spent baths.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt alkaline cleaned	
Chromium	0.013	0.005
Nickel	0.019	0.013
Fluoride	2.02	0.895
Oil and grease	0.339	0.339
TSS	0.509	0.407
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(v) *Alkaline cleaning rinse.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt alkaline cleaned	
Chromium	0.086	0.035
Nickel	.128	.086
Fluoride	13.9	6.15
Oil and grease	2.33	2.33
TSS	3.50	2.80
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(w) *Molten salt rinse.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt treated with molten salt	
Chromium	0.047	0.019
Nickel	.069	.047
Fluoride	7.44	3.30
Oil and grease	1.25	1.25
TSS	1.88	1.50
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(x) *Ammonia rinse.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt treated with ammonia solution	
Chromium	0.006	0.002
Nickel	.008	.006

SUBPART C—NSPS—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Fluoride	.881	.391
Oil and grease	.148	.148
TSS	222	178
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(y) *Sawing or grinding spent emulsions.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt sawed or ground	
Chromium	0.015	0.006
Nickel	.002	.015
Fluoride	2.35	1.04
Oil and grease	.394	.394
TSS	591	473
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(z) *Sawing or grinding rinse.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground nickel-cobalt rinsed	
Chromium	0.067	0.027
Nickel	0.100	0.067
Fluoride	10.8	4.78
Oil and grease	1.81	1.81
TSS	2.72	217
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(aa) *Steam cleaning condensate.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt steam cleaned	
Chromium	0.011	0.005
Nickel	0.017	0.011
Fluoride	1.79	0.795
Oil and grease	0.301	0.301
TSS	0.452	0.361
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(bb) *Hydrostatic tube testing and ultrasonic testing wastewater—Subpart C—NSPS.* There shall be no discharge of process wastewater pollutants.

(cc) *Degreasing spent solvents.—Subpart C—NSPS.* There shall be no discharge of process wastewater pollutants.

(dd) *Dye penetrant testing wastewater.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt tested with dye penetrant method	
Chromium	0.079	0.032
Nickel	0.117	0.079
Fluoride	12.7	5.63
Oil and grease	2.13	2.13
TSS	3.20	2.56
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(ee) *Electrocoating rinse.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt electrocoated	
Chromium	1.25	0.506
Nickel	1.86	1.25
Fluoride	201	89.0
Oil and grease	33.7	33.7
TSS	50.6	40.5
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(ff) *Miscellaneous wastewater sources.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt formed	
Chromium	0.091	0.037
Nickel	0.136	0.091
Fluoride	14.7	6.50
Oil and grease	2.46	2.46
TSS	3.69	2.95
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

§ 471.34 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and by August 23, 1988 achieve the following pretreatment standards for existing sources (PSES). The mass of wastewater pollutants in nickel-cobalt forming wastewater introduced into a POTW shall not exceed the following values:

(a) *Rolling spent neat oils—Subpart C—PSES.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt rolled with emulsions	
Chromium	0.063	0.026
Nickel	0.094	0.063
Fluoride	10.1	4.49

(c) *Rolling contact cooling water.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt rolled with water	
Chromium	0.028	0.011
Nickel	0.042	0.028
Fluoride	4.49	1.99

(d) *Tube reducing spent lubricants—Subpart C—PSES.* There shall be no discharge of process wastewater pollutants.

(e) *Drawing spent neat oils—Subpart C—PSES.* There shall be no discharge of process wastewater pollutants.

(f) *Drawing spent emulsions.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt drawn with emulsions	
Chromium	0.036	0.014
Nickel	0.053	0.036
Fluoride	5.68	2.52

(g) *Extrusion spent lubricants—Subpart C—PSES.* There shall be no discharge of process wastewater pollutants.

(h) *Extrusion press or solution heat treatment contact cooling water.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of extruded nickel-cobalt heat treated	
Chromium	0.031	0.013
Nickel	0.046	0.031
Fluoride	4.95	2.20

(i) *Extrusion press hydraulic fluid leakage.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt extruded	
Chromium	0.086	0.034
Nickel	0.128	0.086
Fluoride	13.8	6.13

(j) *Forging equipment cleaning wastewater.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt forged	
Chromium	0.002	0.0006
Nickel	0 002	0.002
Fluoride	0.238	0.106

(k) *Forging contact cooling water.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of forged nickel-cobalt cooled with water	
Chromium	0.009	0.004
Nickel	0.014	0.009
Fluoride	1.46	0.647

(l) *Forging press hydraulic fluid leakage.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt forged	
Chromium	0.069	0.028
Nickel	0.103	0.069
Fluoride	11.2	4.94

(m) *Forging spent lubricants—Subpart C—PSES.* There shall be no discharge of process wastewater pollutants.

(n) *Stationary casting contact cooling water.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt cast with stationary methods	
Chromium	0.448	0.182
Nickel	0.666	0.448

SUBPART C—PSES—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Fluoride	72.0	32.0

(o) *Vacuum melting steam condensate—Subpart C—PSES.* There shall be no allowance for the discharge of wastewater pollutants.

(p) *Metal powder production atomization wastewater.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt metal powder atomized	
Chromium	0.870	0.393
Nickel	1.44	0.970
Fluoride	156	69.2

(q) *Annealing and solution heat treatment contact cooling water—Subpart C—PSES.* There shall be no allowance for the discharge of wastewater pollutants.

(r) *Wet air pollution control scrubber blowdown.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt formed	
Chromium	0.300	0.122
Nickel	0.446	0.300
Fluoride	48.2	2.20

(s) *Surface treatment spent baths.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt surface treated	
Chromium	0.346	0.141
Nickel	0.514	0.348
Fluoride	55.7	24.7

(t) *Surface treatment rinse.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt surface treated	
Chromium	0.873	0.354
Nickel	1.30	0.873

SUBPART C—PSES—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Fluoride	1.41	62.3

(u) *Alkaline cleaning spent baths.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt alkaline cleaned	
Chromium	0.013	0.005
Nickel	0.019	0.013
Fluoride	2.02	0.895

(v) *Alkaline cleaning rinse.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt alkaline cleaned	
Chromium	0.086	0.035
Nickel	0.128	0.086
Fluoride	13.9	6.15

(w) *Molten salt rinse.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt treated with molten salt	
Chromium	0.047	0.019
Nickel	0.069	0.047
Fluoride	7.44	3.30

(x) *Ammonia rinse.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt treated with ammonia solution	
Chromium	0.006	0.002
Nickel	0.019	0.008
Fluoride	0.881	0.391

(y) *Sawing or grinding spent emulsions.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt sawed or ground with emulsions	
Chromium	0.015	0.006
Nickel	0.022	0.015
Fluoride	2.35	1.04

(z) *Sawing or grinding rinse.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground nickel-cobalt rinsed	
Chromium	0.067	0.027
Nickel	0.100	0.067
Fluoride	10.8	4.78

(aa) *Steam cleaning condensate.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt steam cleaned	
Chromium	0.011	0.005
Nickel	0.017	0.011
Fluoride	1.79	0.795

(bb) *Hydrostatic Tube Testing and Ultrasonic Testing Wastewater—Subpart C—PSES.* There shall be no allowance for the discharge of process wastewater pollutants.

(cc) *Degreasing Spent Solvents—Subpart C—PSES.* There shall be no discharge of process wastewater pollutants.

(dd) *Dye Penetrant Testing Wastewater.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt tested with dye penetrant method	
Chromium	0.094	0.039
Nickel	0.409	0.271
Fluoride	12.7	5.63

(ee) *Electrocoating rinse.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt electrocoated	
Chromium	1.25	0.506
Nickel	1.86	1.25
Fluoride	201	89.0

(ff) *Miscellaneous wastewater sources.*

SUBPART C—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt formed	
Chromium	0.091	0.037
Nickel	0.138	0.091
Fluoride	14.7	6.50

§ 471.35 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources. The mass of wastewater pollutants in nickel-cobalt forming process wastewater introduced into a POTW shall not exceed the following values:

(a) *Rolling spent neat oils—Subpart C—PSNS.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt rolled with emulsions	
Chromium	0.063	0.026
Nickel	0.094	0.063
Fluoride	10.1	4.49

(c) *Rolling contact cooling water.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt rolled with water	
Chromium	0.028	0.012
Nickel	0.042	0.028
Fluoride	4.49	1.99

(d) *Tube reducing spent lubricant—Subpart C—PSNS.* There shall be no discharge of process wastewater pollutants.

(e) *Drawing spent neat oils—Subpart C—PSNS.* There shall be no discharge of process wastewater pollutants.

(f) *Drawing spent emulsions.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt drawn with emulsions	
Chromium	0.036	0.015
Nickel	0.053	0.036
Fluoride	5.68	2.52

(g) *Extrusion spent lubricants—Subpart C—PSNS.* There shall be no discharge of process wastewater pollutants.

(h) *Extrusion press or solution heat treatment contact cooling water.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of extruded nickel-cobalt heat treated	
Chromium	0.031	0.013
Nickel	0.046	0.031
Fluoride	4.95	2.20

(i) *Extrusion press hydraulic fluid leakage.*

SUBPART C—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt extruded	
Chromium	0.086	0.034
Nickel	0.128	0.086
Fluoride	13.8	6.13

(j) *Forging equipment cleaning wastewater.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt forged	
Chromium	0.002	0.0006
Nickel	0.002	0.002
Fluoride	0.238	0.106

(k) *Forging contact cooling water.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of forged nickel-cobalt cooled with water	
Chromium	0.009	0.004
Nickel	0.014	0.009
Fluoride	1.46	0.647

(l) *Forging press hydraulic fluid leakage.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt forged	
Chromium	0.069	0.028
Nickel	0.103	0.069
Fluoride	11.2	4.94

(m) *Forging spent lubricants—Subpart C—PSNS.* There shall be no discharge of process wastewater pollutants.

(n) *Stationary casting contact cooling water.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt cast with stationary methods	
Chromium	0.448	0.182
Nickel	0.668	0.448
Fluoride	72.0	32.0

(o) *Vacuum melting steam condensate—Subpart C—PSNS.* There shall be no allowance for the discharge of process wastewater pollutants.

(p) *Metal powder production atomization wastewater.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt metal powder atomized	
Chromium	0.970	0.393
Nickel	1.44	0.970
Fluoride	156	69.2

(q) *Annealing and Solution Heat Treatment Contact Cooling Water—Subpart C—PSNS.* There shall be no allowance for the discharge of process wastewater pollutant.

(r) *Wet Air Pollution Control Scrubber Blowdown.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt formed	
Chromium	0.300	0.122
Nickel	0.450	0.300
Fluoride	48.2	21.4

(s) *Surface treatment spent baths.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt surface treated	
Chromium	0.346	0.141
Nickel	0.515	0.346
Fluoride	55.7	24.7

(t) *Surface treatment rinse.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt surface treated	
Chromium	0.874	0.354
Nickel	1.30	0.873
Fluoride	141	62.3

(u) *Alkaline cleaning spent baths.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt alkaline cleaned	
Chromium	0.013	0.005
Nickel	0.019	0.013
Fluoride	2.02	0.895

(v) *Alkaline cleaning rinse.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt alkaline cleaned	
Chromium	0.086	0.035
Nickel	0.128	0.086
Fluoride	13.9	6.15

(w) *Molten salt rinse.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt treated with molten salt	
Chromium	0.047	0.019
Nickel	0.069	0.047
Fluoride	7.44	3.30

(x) *Ammonia rinse.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt treated with ammonia solution	
Chromium	0.006	0.002
Nickel	0.008	0.006
Fluoride	0.881	0.391

(y) *Sawing or grinding spent emulsions.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt sawed or ground with emulsions	
Chromium	0.015	0.006
Nickel	0.022	0.015
Fluoride	2.35	1.04

(z) *Sawing or grinding rinse.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground nickel-cobalt rinsed	
Chromium	0.067	0.027
Nickel	0.100	0.067
Fluoride	10.8	4.78

(aa) *Steam cleaning condensate.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt steam cleaned	
Chromium	0.011	0.005
Nickel	0.017	0.011
Fluoride	1.79	0.795

(bb) *Hydrostatic tube testing and ultrasonic testing wastewater—Subpart C—PSNS.* There shall be no allowance discharge of process wastewater pollutants.

(cc) *Degreasing spent solvents—Subpart C—PSNS.* There shall be no discharge of process wastewater pollutants.

(dd) *Dye penetrant testing wastewater.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt tested with dye penetrant method	
Chromium	0.094	0.039
Nickel	0.409	0.271
Fluoride	12.7	5.63

(ee) *Electrocoating rinse.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt electrocoated	
Chromium	1.25	0.506
Nickel	1.86	0.125
Fluoride	201	89.0

(ff) *Miscellaneous wastewater sources.*

SUBPART C—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of nickel-cobalt formed	
Chromium	0.091	0.037
Nickel	0.136	0.091
Fluoride	14.7	6.50

§ 471.36 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT) [Reserved].

Subpart D—Precious Metals Forming Subcategory

§ 471.40 Applicability; description of the precious metals forming subcategory.

This subpart applies to discharges of pollutants to waters of the United States, and introductions of pollutants into publicly owned treatment works from the process operations of the precious metals forming subcategory.

§ 471.41 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30–125.32, any existing point source subject to this subpart must achieve the following effluent limitations for the process operations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

(a) *Rolling spent neat oils—Subpart D—BPT.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART D—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals rolled with emulsions	
Chromium	0.026	0.012
Copper	0.147	0.077
Cyanide	0.023	0.010
Silver	0.032	0.013
Oil and grease	1.54	0.925
TSS	3.16	1.51
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(c) *Drawing spent neat oils—Subpart D—BPT.* There shall be no discharge of process wastewater pollutants.

(d) *Drawing spent emulsions.*

SUBPART D—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals drawn with emulsions	
Cadmium	0.016	0.007
Copper	0.091	0.048
Cyanide	0.014	0.006
Silver	0.020	0.008
Oil and grease	0.950	0.570
TSS	1.95	0.926
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(e) *Drawing spent soap solutions.*

SUBPART D—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals drawn with soap solutions	
Cadmium	0.001	0.0005
Copper	0.006	0.003
Cyanide	0.0009	0.0004
Silver	0.001	0.0006
Oil and grease	0.063	0.038
TSS	0.128	0.061

SUBPART D—BPT—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(f) *Metal powder production wet atomization wastewater.*

SUBPART D—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals powder wet atomized	
Cadmium	2.27	1.00
Copper	12.7	6.70
Cyanide	1.94	0.802
Silver	2.70	1.14
Oil and grease	134	80.2
TSS	274	130
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(g) *Heat treatment contact cooling water.*

SUBPART D—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of extruded precious metals heat treated	
Cadmium	1.42	0.626
Copper	7.98	4.17
Cyanide	1.21	0.501
Silver	1.71	0.709
Oil and grease	83.4	50.1
TSS	171	81.3
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(h) *Semi-continuous or continuous casting contact cooling water.*

SUBPART D—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals cast by the semi-continuous or continuous method	
Cadmium	3.50	1.55
Copper	19.6	10.3
Cyanide	2.99	1.24
Silver	4.23	1.75
Oil and grease	206	124
TSS	423	209
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(i) *Stationary casting contact cooling water—Subpart D—BPT.* There shall be no discharge of process wastewater pollutants.

(j) *Direct chill casting contact cooling water.*

SUBPART D—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals cast by the direct chill method	
Cadmium	3.67	1.62
Copper	20.5	10.8
Cyanide	3.13	1.30
Silver	4.43	1.84
Oil and grease	216	130
TSS	443	211
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(k) *Shot casting contact cooling water.*

SUBPART D—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals shot cast	
Cadmium	1.25	0.551
Copper	6.98	3.67
Cyanide	1.07	0.441
Silver	1.51	0.624
Oil and grease	73.4	44.1
TSS	151	71.6
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(l) *Wet air pollution control scrubber blowdown—Subpart D—BPT.* There shall be no discharge of process wastewater pollutants.

(m) *Pressure bonding contact cooling water.*

SUBPART D—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals and base metal pressure bonded	
Cadmium	0.029	0.013
Copper	0.159	0.084
Cyanide	0.024	0.010
Silver	0.034	0.014
Oil and grease	1.67	1.00
TSS	3.43	1.63
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(n) *Surface treatment spent baths.*

SUBPART D—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals surface treated	
Cadmium	0.033	0.015
Copper	0.183	0.097
Cyanide	0.028	0.012
Silver	0.040	0.017
Oil and grease	1.93	1.16
TSS	3.95	1.88

SUBPART D—BPT—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(o) *Surface treatment rinse.*

SUBPART D—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals surface treated	
Cadmium	0.970	0.430
Copper	5.4	2.80
Cyanide	0.820	0.340
Silver	1.20	0.480
Oil and grease	57.0	34.0
TSS	120	55.0
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(p) *Alkaline cleaning spent baths.*

SUBPART D—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals alkaline cleaned	
Cadmium	0.021	0.009
Copper	0.114	0.060
Cyanide	0.018	0.007
Silver	0.025	0.010
Oil and grease	1.20	0.720
TSS	2.46	1.170
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(q) *Alkaline cleaning rinse.*

SUBPART D—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals alkaline cleaned	
Cadmium	3.81	1.68
Copper	21.3	11.2
Cyanide	3.25	1.35
Silver	4.59	1.91
Oil and grease	224	13.5
TSS	459	219
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(r) *Alkaline cleaning prebonding wastewater.*

SUBPART D—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals and base metal cleaned prior to bonding	
Cadmium	3.95	1.74
Copper	22.1	11.6
Cyanide	3.37	1.39
Silver	4.76	1.97
Oil and grease	232	139
TSS	476	226
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(s) *Tumbling or burnishing wastewater.*

SUBPART D—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals tumbled or burnished	
Cadmium	4.12	1.82
Copper	23.0	12.1
Cyanide	3.51	1.45
Silver	4.96	2.06
Oil and grease	242	145
TSS	496	236
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(t) *Sawing or grinding spent neat oils—Subpart D—BPT.* There shall be no discharge of process wastewater pollutants.

(u) *Sawing or grinding spent emulsions.*

SUBPART D—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals sawed or ground with emulsions	
Cadmium	0.032	0.014
Copper	0.178	0.094
Cyanide	0.027	0.011
Silver	0.039	0.016
Oil and grease	1.87	1.12
TSS	3.83	1.82
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(v) *Degreasing spent solvents—Subpart D—BPT.* There shall be no discharge of process wastewater pollutants.

§ 471.42 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(a) *Rolling spent neat oils—Subpart D—BAT.* There shall be no discharge of wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART D—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals rolled with emulsions	
Cadmium	0.026	0.012
Copper	0.147	0.077
Cyanide	0.023	0.010
Silver	0.032	0

(c) *Drawing spent neat oils—Subpart D—BAT.* There shall be no discharge of process wastewater pollutants.

(d) *Drawing spent emulsions.*

SUBPART D—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals drawn with emulsions	
Cadmium	0.016	0.007
Copper	0.091	0.048
Cyanide	0.014	0.006
Silver	0.020	0.008

(e) *Drawing spent soap solutions.*

SUBPART D—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals drawn with soap solutions	
Cadmium	0.001	0.0005
Copper	0.006	0.003
Cyanide	0.0009	0.0004
Silver	0.002	0.0006

(f) *Metal powder production wet atomization wastewater.*

SUBPART D—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals powder wet atomized	
Cadmium	2.27	1.00
Copper	12.7	5.68
Cyanide	1.94	0.802
Silver	2.74	1.14

(g) *Heat treatment contact cooling water.*

SUBPART D—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals heat treated	
Cadmium	0.142	0.063
Copper	0.793	0.417
Cyanide	0.121	0.050
Silver	0.171	0.071
Gold		

(h) *Semi-continuous and continuous casting contact cooling water.*

SUBPART D—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals cast by the semi-continuous or continuous method	
Cadmium	0.350	0.155
Copper	1.96	1.03
Cyanide	0.299	0.124
Silver	0.423	0.175

(i) *Stationary casting contact cooling water—Subpart D—BAT.* There shall be no discharge of process wastewater pollutants.

(j) *Direct chill casting contact cooling water.*

Subpart D—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals cast by the direct chill method	
Cadmium	0.3676	0.162
Copper	2.05	1.08
Cyanide	0.313	0.130
Silver	0.443	0.184

(k) *Shot casting contact cooling water.*

SUBPART D—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals shot cast	
Cadmium	0.125	0.055
Copper	0.698	0.367
Cyanide	0.107	0.044
Silver	0.151	0.063

(l) *Wet air pollution control scrubber blowdown—Subpart D—BAT.* There

shall be no discharge of process wastewater pollutants.

(m) *Pressure bonding contact cooling water.*

SUBPART D—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metal and base metal pressure bonded	
Cadmium	0.0297	0.013
Copper	0.159	0.084
Cyanide	0.0247	0.010
Silver	0.0342	0.014

(n) *Surface treatment spent baths.*

SUBPART D—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals surface treated	
Cadmium	0.033	0.015
Copper	0.183	0.097
Cyanide	0.028	0.012
Silver	0.040	0.017

(o) *Surface treatment rinse.*

SUBPART D—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals surface treated	
Cadmium	0.210	0.093
Copper	1.17	0.616
Cyanide	0.179	0.074
Silver	0.253	0.105

(p) *Alkaline cleaning spent baths.*

SUBPART D—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals alkaline cleaned	
Cadmium	0.021	0.009
Copper	0.114	0.060
Cyanide	0.018	0.007
Silver	0.025	0.010

(q) *Alkaline cleaning rinse.*

SUBPART D—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals alkaline cleaned	
Cadmium	0.381	0.168
Copper	2.13	1.12
Cyanide	0.325	0.135
Silver	0.459	0.191

(r) *Alkaline cleaning prebonding wastewater.*

SUBPART D—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metal and base metal cleaned prior to bonding	
Cadmium	0.400	0.174
Copper	2.210	1.16
Cyanide	0.337	0.139
Silver	0.476	0.197

(s) *Tumbling or burnishing wastewater.*

SUBPART D—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals tumbled or burnished	
Cadmium	0.412	0.182
Copper	2.300	1.21
Cyanide	0.351	0.145
Silver	0.496	0.206

(t) *Sawing or grinding spent neat oils—Subpart D—BAT.* There shall be no discharge of process wastewater pollutants.

(u) *Sawing or grinding spent emulsions.*

SUBPART D—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals sawed or ground with emulsions	
Cadmium	0.0327	0.014
Copper	0.178	0.094
Cyanide	0.0277	0.011
Silver	0.0381	0.016

(v) *Degreasing spent solvents—Subpart D—BAT.* There shall be no discharge of process wastewater pollutants.

§ 471.43 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS):

(a) *Rolling Spent Neat Oils—Subpart D—NSPS.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART D—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals rolled with emulsions	
Cadmium	0.026	0.012
Copper	0.147	0.077
Cyanide	0.023	0.010
Silver	0.032	0.013
Oil and grease	1.54	0.925
TSS	3.16	1.51
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(c) *Drawing spent neat oils—Subpart D—NSPS.* There shall be no discharge of process wastewater pollutants.

(d) *Drawing spent emulsions.*

SUBPART D—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals drawn with emulsions	
Cadmium	0.017	0.007
Copper	0.091	0.048
Cyanide	0.014	0.006
Silver	0.020	0.008
Oil and grease	0.950	0.570
TSS	1.95	0.927
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(e) *Drawing spent soap solutions.*

SUBPART D—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals drawn with soap solutions	
Cadmium	0.001	0.0005
Copper	0.006	0.003
Cyanide	0.009	0.0004
Silver	0.002	0.006
Oil and grease	0.063	0.038
TSS	0.128	0.061
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(f) *Metal powder production atomization wastewater.*

SUBPART D—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals powder wet atomized	
Cadmium	2.27	1.00
Copper	12.7	6.68
Cyanide	1.94	0.802
Silver	2.74	1.14
Oil and grease	134	80.2
TSS	274	131
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(g) *Heat treatment contact cooling water.*

SUBPART D—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals heat treated	
Cadmium	0.142	0.063
Copper	0.793	0.417
Cyanide	0.121	0.050
Silver	0.171	0.071
Oil and grease	8.34	5.01
TSS	17.1	8.13
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(h) *Semi-continuous and continuous casting contact cooling water.*

SUBPART D—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals cast by the semi-continuous or continuous method	
Cadmium	0.350	0.155
Copper	1.96	1.03
Cyanide	0.299	0.124
Silver	0.423	0.175
Oil and grease	20.6	12.4
TSS	42.3	20.1
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(i) *Stationary casting contact cooling water—Subpart D—NSPS.* There shall be no discharge of process wastewater pollutants.

(j) *Direct chill casting contact cooling water.*

SUBPART D—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals cast by the direct chill method	
Cadmium	0.367	0.162
Copper	2.05	1.08

SUBPART D—NSPS—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Cyanide	0.313	0.130
Silver	0.443	0.184
Oil and grease	21.6	13.0
TSS	443	21.1
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(k) *Shot casting contact cooling water.*

SUBPART D—NSPS

Poliutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals shot cast	
Cadmium	0.125	0.055
Copper	0.698	0.387
Cyanide	0.107	0.044
Silver	0.151	0.063
Oil and grease	7.34	4.41
TSS	15.1	7.16
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(l) *Wet air pollution control scrubber blowdown—Subpart D—NSPS.* There shall be no discharge of process wastewater pollutants.

(m) *Pressure bonding contact cooling water.*

SUBPART D—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals and base metal pressure bonded	
Cadmium	0.029	0.013
Copper	0.159	0.084
Cyanide	0.024	0.010
Silver	0.034	0.014
Oil and grease	1.67	1.00
TSS	3.43	1.63
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(n) *Surface treatment spent baths.*

SUBPART D—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals surface treated	
Cadmium	0.033	0.015
Copper	0.183	0.097
Cyanide	0.026	0.012
Silver	0.040	0.017
Oil and grease	1.93	1.16
TSS	3.95	1.88
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(o) *Surface treatment rinse.*

SUBPART D—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals surface treated	
Cadmium	0.210	0.093
Copper	1.17	0.616
Cyanide	0.179	0.074
Silver	0.253	0.105
Oil and grease	12.3	7.39
TSS	25.3	12.0
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(p) *Alkaline cleaning spent baths.*

SUBPART D—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals alkaline cleaned	
Cadmium	0.021	0.009
Copper	0.114	0.060
Cyanide	0.018	0.007
Silver	0.025	0.010
Oil and grease	1.20	0.720
TSS	2.46	1.17
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(q) *Alkaline cleaning rinse.*

SUBPART D—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals alkaline cleaned	
Cadmium	0.381	0.168
Copper	2.13	1.112
Cyanide	0.325	0.135
Silver	0.459	0.191
Oil and grease	22.4	13.5
TSS	45.9	21.9
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(r) *Alkaline cleaning pre-bonding wastewater.*

SUBPART D—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals and base metal cleaned prior to bonding	
Cadmium	0.400	0.174
Copper	2.21	1.16
Cyanide	0.337	0.139
Silver	0.476	0.197
Oil and grease	23.2	13.9
TSS	47.6	22.6
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(s) *Tumbling or burnishing wastewater.*

SUBPART D—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals tumbled or burnished	
Cadmium	0.412	0.182
Copper	2.30	1.21
Cyanide	0.351	0.145
Silver	0.496	0.206
Oil and grease	24.2	14.5
TSS	49.6	23.6
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(t) *Sawing or grinding spent neat oils—Subpart D—NSPS.* There shall be no discharge of process wastewater pollutants.

(u) *Sawing or grinding spent emulsions.*

SUBPART D—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals sawed or ground with emulsions	
Cadmium	0.032	0.014
Copper	0.178	0.094
Cyanide	0.027	0.011
Silver	0.038	0.016
Oil and grease	1.87	1.12
TSS	2.83	1.82
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(v) *Degreasing spent solvents—Subpart D—NSPS.* There shall be no discharge of process wastewater pollutants.

§ 471.44 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and by August 23, 1985 achieve the following pretreatment standards for existing sources (PSES). The mass of wastewater pollutants in precious metals forming process wastewater introduced into a POTW shall not exceed the following values:

(a) *Rolling spent neat oils—Subpart D—PSES.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART D—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals rolled with emulsions	
Cadmium	0.026	0.012
Copper	0.147	0.077
Cyanide	0.023	0.010
Silver	0.032	0.013

(c) *Drawing spent neat oils—Subpart D—PSES.* There shall be no discharge of process wastewater pollutants.

(d) *Drawing spent emulsions.*

SUBPART D—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals drawn with emulsions	
Cadmium	0.016	0.007
Copper	0.091	0.0048
Cyanide	0.014	0.006
Silver	0.020	0.008

(e) *Drawing spent soap solutions.*

SUBPART D—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals drawn with soap solutions	
Cadmium	0.001	0.0005
Copper	0.006	0.003
Cyanide	0.0009	0.0004
Silver	0.002	0.0006

(f) *Metal powder production atomization wastewater.*

SUBPART D—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals powder wet atomized	
Cadmium	2.27	1.00
Copper	12.7	6.68
Cyanide	1.94	0.802
Silver	2.74	1.14

(g) *Heat treatment contact cooling water.*

SUBPART D—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals heat treated	
Cadmium	0.142	0.063
Copper	0.793	0.417
Cyanide	0.121	0.050
Silver	0.171	0.071

(h) *Semi-continuous and continuous casting contact cooling water.*

SUBPART D—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals cast by the semi-continuous or continuous method	
Cadmium	0.350	0.155
Copper	1.96	1.03
Cyanide	0.299	0.124
Silver	0.423	0.175

(i) *Stationary casting contact cooling water—Subpart D—PSES.* There shall be no discharge of process wastewater pollutants.

(j) *Direct chill casting contact cooling water.*

SUBPART D—PSES

Pollutant or pollutant property	Maximum for any one day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals cast by the direct chill method	
Cadmium	0.367	0.162
Copper	2.05	1.08
Cyanide	0.313	0.130
Silver	0.443	0.184

(k) *Shot casting contact cooling water.*

SUBPART D—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals shot cast	
Cadmium	0.125	0.055
Copper	0.698	0.367
Cyanide	0.107	0.044
Silver	0.151	0.063

(l) *Wet air pollution control scrubber blowdown—Subpart D—PSES.* There shall be no discharge of process wastewater pollutants.

(m) *Pressure bonding contact cooling water.*

SUBPART D—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metal and base metal pressure bonded	
Cadmium	0.029	0.013
Copper	0.159	0.084
Cyanide	0.024	0.010
Silver	0.034	0.014

(n) *Surface treatment spent baths.*

SUBPART D—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals surface treated	
Cadmium	0.033	0.015
Copper	0.183	0.097
Cyanide	0.028	0.012
Silver	0.040	0.017

(o) *Surface treatment rinse.*

SUBPART D—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals surface treated	
Cadmium	0.210	0.093
Copper	1.17	0.618
Cyanide	0.179	0.074
Silver	0.253	0.105

(p) *Alkaline cleaning spent baths.*

SUBPART D—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals alkaline cleaned	
Cadmium	0.021	0.009
Copper	0.114	0.060
Cyanide	0.018	0.007
Silver	0.025	0.010

(q) *Alkaline cleaning rinse.*

SUBPART D—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals alkaline cleaned	
Cadmium	0.381	0.168
Copper	2.13	1.12
Cyanide	0.325	0.135

SUBPART D—PSES—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Silver	0.459	0.191

(r) *Alkaline cleaning prebonding wastewater.*

SUBPART D—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals and base metal cleaned prior to bonding	
Cadmium	0.400	0.174
Copper	2.210	1.16
Cyanide	0.337	0.139
Silver	0.476	0.197

(s) *Tumbling or burnishing wastewater.*

SUBPART D—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals tumbled or burnished	
Cadmium	0.412	0.182
Copper	2.300	1.21
Cyanide	0.351	0.145
Silver	0.496	0.206

(t) *Sawing or grinding spent neat oils—Subpart D—PSES.* There shall be no discharge of process wastewater pollutants.

(u) *Sawing or grinding spent emulsions.*

SUBPART D—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals sawed or ground with emulsions	
Cadmium	0.032	0.014
Copper	0.178	0.094
Cyanide	0.027	0.011
Silver	0.038	0.016

(v) *Degreasing spent solvents—Subpart D—PSNS.* There shall be no discharge of process wastewater pollutants.

§ 471.45 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS). The mass of wastewater pollutants in precious metals forming wastewater introduced into a POTW shall not exceed the following values:

(a) *Rolling spent neat oils—Subpart D—PSNS.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART D—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals rolled with emulsions	
Cadmium	0.026	0.012
Copper	0.147	0.077
Cyanide	0.023	0.010
Silver	0.032	0.013

(c) *Drawing spent neat oils—Subpart D—PSNS.* There shall be no discharge of process wastewater pollutants.

(d) *Drawing spent emulsions.*

SUBPART D—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals drawn with emulsions	
Cadmium	0.016	0.007
Copper	0.091	0.048
Cyanide	0.014	0.006
Silver	0.020	0.008

(e) *Drawing spent soap solutions.*

SUBPART D—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals drawn with soap solutions	
Cadmium	0.001	0.0005
Copper	0.006	0.003
Cyanide	0.0009	0.0004
Silver	0.002	0.0006

(f) *Metal powder production wet atomization wastewater.*

SUBPART D—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals powder wet atomized	
Cadmium	2.27	1.00

SUBPART D—PSNS—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Copper	12.7	6.68
Cyanide	1.94	0.802
Silver	2.74	1.14

(g) *Heat treatment contact cooling water.*

SUBPART D—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of extended precious metals heat treated	
Cadmium	0.142	0.063
Copper	0.793	0.417
Cyanide	0.121	0.050
Silver	0.171	0.071

(h) *Semi-continuous and continuous casting contact cooling water.*

SUBPART D—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals cast by the semi-continuous or continuous method	
Cadmium	0.350	0.155
Copper	1.96	0.629
Cyanide	0.299	0.124
Silver	0.423	0.175

(i) *Stationary casting contact cooling water—Subpart D—PSNS.* There shall be no discharge of process wastewater pollutants.

(j) *Direct chill casting contact cooling water.*

SUBPART D—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals cast by the direct chill method	
Cadmium	0.367	0.162
Copper	2.05	1.08
Cyanide	0.313	0.130
Silver	0.443	0.184

(k) *Shot casting contact cooling water.*

SUBPART D—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals shot cast	
Cadmium	0.125	0.055
Copper	0.698	0.367
Cyanide	0.107	0.044
Silver	0.151	0.0631

(l) *Wet air pollution control scrubber blowdown—Subpart D—PSNS.* There shall be no discharge of process wastewater pollutants.

(m) *Pressure bonding contact cooling water.*

SUBPART D—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals and base metal pressure bonded	
Cadmium	0.029	0.013
Copper	0.159	0.084
Cyanide	0.024	0.010
Silver	0.034	0.014

(n) *Surface treatment spent baths.*

SUBPART D—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals surface treated	
Cadmium	0.033	0.015
Copper	0.183	0.097
Cyanide	0.028	0.012
Silver	0.040	0.017

(o) *Surface treatment rinse.*

SUBPART D—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals surface treated	
Cadmium	0.210	0.093
Copper	1.17	0.616
Cyanide	0.179	0.074
Silver	0.253	0.105

(p) *Alkaline cleaning spent baths.*

SUBPART D—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals alkaline cleaned	
Cadmium	0.021	0.009
Copper	0.114	0.060
Cyanide	0.011	0.007
Silver	0.025	0.010

(q) *Alkaline cleaning rinse.*

SUBPART D—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals alkaline cleaned	
Cadmium	0.381	0.168
Copper	2.13	1.12
Cyanide	0.325	0.135
Silver	0.459	0.191

(r) *Alkaline cleaning pre-bonding wastewater.*

SUBPART D—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals and base metal cleaned prior to bonding	
Cadmium	0.400	0.174
Copper	2.21	1.16
Cyanide	0.337	0.139
Silver	0.476	0.197

(s) *Tumbling or burnishing wastewater.*

SUBPART D—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals tumbled or burnished	
Cadmium	0.412	0.182
Copper	2.30	1.21
Cyanide	0.351	0.145
Silver	0.496	0.206

(t) *Sawing or grinding spent neat oils—Subpart D—PSNS.* There shall be no discharge of process wastewater pollutants.

(u) *Sawing or grinding spent emulsions.*

SUBPART D—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of precious metals sawed or ground with emulsions	
Cadmium	0.032	0.014
Copper	0.178	0.094
Cyanide	0.027	0.011
Silver	0.038	0.016

(v) *Degreasing spent solvents—Supart D—PSNS.* There shall be no discharge of process wastewater pollutants.

§ 471.46 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT) [Reserved].

Subpart E—Refractory Metals Forming Subcategory

§ 471.50 Applicability; description of the refractory metals forming subcategory.

This subpart applies to discharges of pollutants to waters of the United States, and introductions of pollutants into publicly owned treatment works from the process operations of the refractory metals forming subcategory.

§ 471.51 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30–125.32, any existing point source subject to this subpart must achieve the following effluent limitations for the process operations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

(a) *Rolling spent neat oils and graphite based lubricants—Subpart E—BPT.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART E—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals rolled with emulsions	
Copper	0.815	0.429
Nickel	0.824	0.545
Fluoride	25.5	11.3
Molybdenum	2.84	1.47
Oil and grease	8.58	5.15
TSS	17.6	8.37
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(c) *Drawing spent lubricants—Subpart E—BPT.* There shall be no discharge of process wastewater pollutants.

(d) *Extrusion spent lubricants—Subpart E—BPT.* There shall be no discharge of process wastewater pollutants.

(e) *Extrusion press hydraulic fluid leakage.*

SUBPART E—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals extruded	
Copper	2.26	1.19
Nickel	2.29	1.51
Fluoride	70.8	31.4
Molybdenum	7.87	4.07
Oil and grease	23.8	14.3
TSS	48.8	23.2
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(f) *Forging spent lubricants—Subpart E—BPT.* There shall be no discharge of process wastewater pollutants.

(g) *Forging contact cooling water.*

SUBPART E—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of forged refractory metals cooled with water	
Copper	0.614	0.323
Nickel	0.620	0.410
Fluoride	19.2	8.53
Molybdenum	2.14	1.11
Oil and grease	6.46	3.88
TSS	13.3	6.30
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(h) *Equipment cleaning wastewater.*

SUBPART E—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals formed	
Copper	0.790	0.420
Nickel	0.800	0.530
Fluoride	25.0	11.0
Molybdenum	0.850	0.380
Oil and grease	8.30	5.00
TSS	17.0	8.10
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(i) *Metal powder production wastewater.*

SUBPART E—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals powder produced	
Copper	0.534	0.281
Nickel	0.540	0.357
Fluoride	16.70	7.42
Molybdenum	8.99	4.65
Oil and grease	5.62	3.37
TSS	11.5	5.48
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(j) *Metal powder production floor wash wastewater—Subpart E—BPT.* There shall be no discharge of process wastewater pollutants.

(k) *Metal powder pressing spent lubricants—Subpart E—BPT.* There shall be no discharge of process wastewater pollutants.

(l) *Surface treatment spent baths.*

SUBPART E—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals surface treated	
Copper	0.739	0.389
Nickel	0.747	0.494
Fluoride	23.2	10.3
Molybdenum	2.57	1.33
Oil and grease	7.78	4.68
TSS	16.0	7.59
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(m) *Surface treatment rinse.*

SUBPART E—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals surface treated	
Copper	230	121
Nickel	232	154
Fluoride	7,200	3,200
Molybdenum	800	414
Oil and grease	2,420	1,450
TSS	4,960	2,360
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(n) *Alkaline cleaning spent baths.*

SUBPART E—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals alkaline cleaned	
Copper	0.635	0.334

SUBPART E—BPT—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Nickel	0.641	0.424
Fluoride	19.9	8.82
Molybdenum	2.21	1.14
Oil and grease	6.68	4.01
TSS	13.7	6.51
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(o) *Alkaline cleaning rinse.*

SUBPART E—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals alkaline cleaned	
Copper	1,550	816
Nickel	1,570	1,040
Fluoride	48,600	21,600
Molybdenum	5,400	2,790
Oil and grease	16,300	9,790
TSS	33,500	15,900
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(p) *Molten salt rinse.*

SUBPART E—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals treated with molten salt	
Copper	12.1	6.33
Nickel	12.2	8.04
Fluoride	377	167
Molybdenum	41.9	2.17
Oil and grease	127	76.0
TSS	260	124
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(q) *Tumbling or burnishing wastewater.*

SUBPART E—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals tumbled or burnished	
Copper	23.8	12.5
Nickel	24.0	15.9
Fluoride	744	330
Molybdenum	82.7	42.8
Oil and grease	25.0	150
TSS	513	244
pH	(1)	(1)

Within the range of 7.5 to 10.0 at all times.

(r) *Sawing or grinding spent neat oils—Subpart E—BPT.* There shall be no discharge of process wastewater pollutants.

(s) *Sawing or grinding spent emulsions.*

SUBPART E—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals sawed or ground with emulsions	
Copper	0.565	0.297
Nickel	0.570	0.377
Fluoride	17.7	7.84
Molybdenum	1.97	1.02
Oil and grease	5.94	3.57
TSS	12.2	5.79
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(t) *Sawing or grinding contact cooling water.*

SUBPART E—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals sawed or ground with contact cooling water	
Copper	46.2	24.3
Nickel	46.7	30.9
Fluoride	1450	642
Molybdenum	161	83.1
Oil and grease	486	292
TSS	997	474
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(u) *Sawing or grinding rinse.*

SUBPART E—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground refractory metals rinsed	
Copper	0.257	0.135
Nickel	0.259	0.172
Fluoride	8.03	3.57
Molybdenum	0.893	0.462
Oil and grease	2.70	1.62
TSS	5.54	2.63
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(v) *Wet air pollution control scrubber blowdown.*

SUBPART E—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals sawed or ground, surface coated or surface treated	
Copper	1.50	0.787
Nickel	1.51	1.00
Fluoride	46.8	20.8
Molybdenum	5.20	2.69
Oil and grease	15.8	9.45
TSS	32.3	15.4

SUBPART E—BPT—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(w) *Miscellaneous wastewater sources.*

SUBPART E—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals formed	
Copper	0.656	0.345
Nickel	0.663	0.438
Fluoride	20.6	9.11
Molybdenum	2.28	1.18
Oil and grease	6.9	4.14
TSS	14.2	6.73
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(x) *Dye penetrant testing wastewater.*

SUBPART E—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals tested	
Copper	0.150	0.078
Nickel	0.150	0.099
Fluoride	4.60	2.00
Molybdenum	0.160	0.071
Oil and grease	1.60	0.930
TSS	3.20	1.50
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(y) *Degreasing spent solvents—Subpart E—BPT.* There shall be no discharge of process wastewater pollutants.

§ 471.52 Effluent limitations representating the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(a) *Rolling spent neat oils and graphite based lubricants—Subpart E—BAT.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART E-BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals rolled with emulsions	
Copper	0.549	0.262
Nickel	0.236	0.157
Fluoride	25.5	11.3
Molybdenum	2.16	0.957

(c) *Drawing spent lubricants—Subpart E—BAT.* There shall be no discharge of process wastewater pollutants.

(d) *Extrusion spent lubricants—Subpart E—BAT.* There shall be no discharge of process wastewater pollutants.

(e) *Extrusion press hydraulic fluid leakage.*

SUBPART E—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals extruded	
Copper	1.5	0.730
Nickel	0.650	0.440
Fluoride	71.000	31.0
Molybdenum	0.820	0.360

(f) *Forging spent lubricants—Subpart E—BAT.* There shall be no discharge of process wastewater pollutants.

(g) *Forging contact cooling water.*

SUBPART E—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of forged refractory metals cooled with water	
Copper	0.041	0.020
Nickel	0.018	0.012
Fluoride	1.92	0.853
Molybdenum	0.163	0.072

(h) *Equipment cleaning wastewater.*

SUBPART E—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals formed	
Copper	0.174	0.083
Nickel	0.075	0.051
Fluoride	8.09	3.59
Molybdenum	0.684	0.303

(i) *Metal powder production wastewater.*

SUBPART E—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals powder produced	
Copper	0.360	0.172
Nickel	0.155	0.104
Fluoride	16.7	7.42
Molybdenum	1.42	0.627

(j) *Metal powder production floor wash wastewater—Subpart E—BAT.* There shall be no discharge of process wastewater pollutants.

(k) *Metal powder pressing spent lubricants—Subpart E—BAT.* There shall be no discharge of process wastewater pollutants.

(l) *Surface treatment spent baths.*

SUBPART E—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals surface treated	
Copper	0.498	0.237
Nickel	0.214	0.144
Fluoride	23.2	10.3
Molybdenum	1.96	0.368

(m) *Surface treatment rinse.*

SUBPART E—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals surface treated	
Copper	15.5	7.38
Nickel	6.66	4.48
Fluoride	720	320
Molybdenum	60.9	27.0

(n) *Alkaline cleaning spent baths.*

SUBPART E—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals alkaline cleaned	
Copper	0.428	0.204
Nickel	0.184	0.124
Fluoride	19.9	8.82
Molybdenum	1.68	0.745

(o) *Alkaline cleaning rinse.*

SUBPART E—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals alkaline cleaned	
Copper	10.5	4.98
Nickel	4.49	3.02
Fluoride	486	216
Molybdenum	41.1	18.2

(p) *Molten salt rinse.*

SUBPART E—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals treated with molten salt	
Copper	0.810	0.386
Nickel	0.348	0.234
Fluoride	37.7	16.7
Molybdenum	1.41	3.19

(q) *Tumbling or burnishing wastewater.*

SUBPART E—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals tumbled or burnished	
Copper	1.60	0.763
Nickel	0.688	0.463
Fluoride	74.4	33.0
Molybdenum	6.29	2.79

(r) *Sawing or grinding spent neat oils—Subpart E—BAT.* There shall be no discharge of process wastewater pollutants.

(s) *Sawing or grinding spent emulsions.*

SUBPART E—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals sawed or ground with emulsions	
Copper	0.380	0.181
Nickel	0.164	0.110
Fluoride	17.7	7.84
Molybdenum	1.50	0.663

(t) *Sawing or grinding contact cooling water.*

SUBPART E—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals sawed or ground with contact cooling water	
Copper	3.11	1.48
Nickel	1.34	0.899
Fluoride	145.0	64.2
Molybdenum	12.2	5.42

(u) *Sawing or grinding rinse.*

SUBPART E—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground refractory metals rinsed	
Copper	0.018	0.009
Nickel	0.008	0.005
Fluoride	0.803	0.350
Molybdenum	0.068	0.030

(v) *Wet air pollution control scrubber blowdown.*

SUBPART E—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals sawed, surface coated or surface treated	
Copper	1.01	0.480
Nickel	0.433	0.291
Fluoride	46.8	20.8
Molybdenum	3.96	1.76

(w) *Miscellaneous wastewater sources.*

SUBPART E—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals formed	
Copper	0.656	0.345
Nickel	0.663	0.438
Fluoride	20.6	9.11
Molybdenum	2.28	1.18

(x) *Dye penetrant testing wastewater.*

SUBPART E—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals product tested	
Copper	0.010	0.005
Nickel	0.005	0.003
Fluoride	0.460	0.200
Molybdenum	0.039	0.018

(y) *Degreasing spent solvents—Subpart E—BAT.* There shall be no discharge of process wastewater pollutants.

§ 471.53 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS):

(a) *Rolling spent neat oils and graphite based lubricants—Subpart E—NSPS.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART E—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals rolled with emulsions	
Copper	0.549	0.262
Nickel	0.236	0.159
Fluoride	25.5	11.3
Molybdenum	2.16	0.957
Oil and grease	4.29	4.29
TSS	6.44	5.15
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(c) *Drawing spent lubricants.—Subpart E—NSPS.* There shall be no discharge of process wastewater pollutants.

(d) *Extrusion spent lubricants.—Subpart E—NSPS.* There shall be no discharge of process wastewater pollutants.

(e) *Extrusion press hydraulic fluid leakage.*

SUBPART E—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals extruded	
Copper	1.53	0.726
Nickel	0.655	0.441
Fluoride	7.08	31.4
Molybdenum	5.99	2.66
Oil and grease	11.9	11.9
TSS	17.9	14.3
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(f) *Forging spent lubricants—Subpart E—NSPS.* There shall be no discharge of process wastewater pollutants.

(g) *Forging contact cooling water.*

SUBPART E—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of forged refractory metals cooled with water	
Copper	0.041	0.320
Nickel	0.018	0.021
Fluoride	1.92	0.853
Molybdenum	0.163	0.072
Oil and grease	0.323	0.323
TSS	0.485	0.388
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(h) *Equipment cleaning wastewater.*

SUBPART E—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals formed	
Copper	0.174	0.083
Nickel	0.075	0.051
Fluoride	8.09	3.59
Molybdenum	0.684	0.303
Oil and grease	1.36	1.36
TSS	2.04	1.63
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(i) *Metal powder production wastewater.*

SUBPART E—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals powder produced	
Copper	0.360	0.172
Nickel	0.155	0.104
Fluoride	16.7	7.42
Molybdenum	1.42	0.627
Oil and grease	2.81	2.81
TSS	4.22	3.37
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(j) *Metal powder production floor wash wastewater—Subpart E—NSPS.* There shall be no discharge of process wastewater pollutants.

(k) *Metal powder pressing spent lubricants—Subpart E—NSPS.* There shall be no discharge of process wastewater pollutants.

(l) *Surface treatment spent baths.*

SUBPART E—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals surface treated	
Copper	0.498	0.237
Nickel	0.214	0.144
Fluoride	23.2	10.3
Molybdenum	1.96	0.868
Oil and grease	3.89	3.89
TSS	5.84	4.67
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(m) *Surface treatment rinse.*

SUBPART E—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals surface treated	
Copper	15.5	7.38
Nickel	6.66	4.48
Fluoride	720	320
Molybdenum	69.9	27.0
Oil and grease	121	121
TSS	182	145
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(n) *Alkaline cleaning spent baths.*

SUBPART E—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals alkaline cleaned	
Copper	0.428	0.204
Nickel	.184	0.124
Fluoride	19.9	8.82
Molybdenum	1.68	0.745
Oil and grease	3.34	3.34
TSS	5.01	4.01
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(o) *Alkaline cleaning rinse.*

SUBPART E—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals alkaline cleaned	
Copper	10.5	4.98
Nickel	4.49	3.02
Fluoride	486	216
Molybdenum	41.1	18.2
Oil and grease	81.6	81.6
TSS	123	97.9
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(p) *Molten salt rinse.*

SUBPART E—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals treated with molten salt	
Copper	0.810	0.386
Nickel	0.348	0.234
Fluoride	37.7	16.7
Molybdenum	3.19	1.41
Oil and grease	6.33	6.33
TSS	9.5	7.6
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(q) *Tumbling or burnishing wastewater.*

SUBPART E—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals tumbled or burnished	
Copper	1.60	0.763
Nickel	0.688	0.463
Fluoride	74.4	33.0
Molybdenum	6.29	2.79
Oil and grease	12.5	12.5
TSS	18.8	15.0
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(r) *Sawing or grinding spent neat oils—Subpart E—NSPS.* There shall be no discharge of process wastewater pollutants.

(s) *Sawing or grinding spent emulsions.*

SUBPART E—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals sawed or ground with emulsions	
Copper	0.380	0.181
Nickel	0.164	0.110
Fluoride	17.7	7.84
Molybdenum	1.5	0.663
Oil and grease	2.97	2.97
TSS	4.48	3.57
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(t) *Sawing or grinding contact cooling water.*

SUBPART E—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals sawed or ground with contact cooling water	
Copper	3.11	1.48

SUBPART E—NSPS—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Nickel	1.34	0.899
Fluoride	145	64.2
Molybdenum	12.2	5.42
Oil and grease	24.3	24.3
TSS	36.5	29.2
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(u) *Sawing or grinding rinse.*

SUBPART E—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground refractory metals rinsed	
Copper	0.018	0.009
Nickel	0.008	0.005
Fluoride	0.803	0.357
Molybdenum	0.068	0.030
Oil and grease	0.135	0.135
TSS	0.203	0.162
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(v) *Wet air pollution control scrubber blowdown.*

SUBPART E—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals sawed, ground, surface coated or surface treated	
Copper	1.01	0.480
Nickel	0.433	0.291
Fluoride	46.8	20.8
Molybdenum	3.96	1.76
Oil and grease	7.87	7.87
TSS	11.8	9.45
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(w) *Miscellaneous wastewater sources.*

SUBPART E—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals formed	
Copper	0.656	0.345
Nickel	0.663	0.438
Fluoride	20.6	9.11
Molybdenum	2.28	1.18
Oil and grease	6.9	4.14
TSS	14.2	6.73
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(x) *Dye penetrant testing wastewater.*

SUBPART E—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals product tested	
Copper	0.010	0.005
Nickel	0.005	0.003
Fluoride	0.460	0.200
Molybdenum	0.039	0.018
Oil and grease	0.078	0.078
TSS	0.120	0.093
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(y) *Degreasing spent solvents—Subpart E—NSPS.* There shall be no discharge of process wastewater pollutants.

§ 471.54 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and by August 23, 1988 achieve the following pretreatment standards for existing sources (PSES). The mass of wastewater pollutants in refractory metals forming process wastewater introduced into a POTW shall not exceed the following values:

(a) *Rolling spent neat oils and graphite based lubricants—Subpart E—PSES.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART E—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals rolled with emulsions	
Copper	0.815	0.429
Nickel	0.624	0.545
Fluoride	25.5	11.4
Molybdenum	2.84	1.47

(c) *Drawing spent lubricants—Subpart E—PSES.* There shall be no discharge of process wastewater pollutants.

(d) *Extrusion spent lubricants—Subpart E—PSES.* There shall be no discharge of process wastewater pollutants.

(e) *Extrusion press hydraulic fluid leakage.*

SUBPART E—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals extruded	
Copper	2.26	1.19
Nickel	2.29	1.51
Fluoride	70.8	31.4
Molybdenum	7.87	4.07

(f) *Forging spent lubricants—Subpart E—PSES.* There shall be no discharge of process wastewater pollutants.

(g) *Forging contact cooling water.*

SUBPART E—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of forged refractory metals cooled with water	
Copper	0.062	0.033
Nickel	0.062	0.041
Fluoride	1.92	0.853
Molybdenum	0.214	0.111

(h) *Equipment cleaning wastewater.*

SUBPART E—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals formed	
Copper	0.259	0.136
Nickel	0.261	0.173
Fluoride	8.09	3.59
Molybdenum	0.899	0.465

(i) *Metal powder production wastewater.*

SUBPART E—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals powder produced	
Copper	0.534	0.281
Nickel	0.540	0.357
Fluoride	16.7	7.42
Molybdenum	1.86	0.961

(j) *Metal powder production floor wash wastewater—Subpart E—PSES.* There shall be no discharge of process wastewater pollutants.

(k) *Metal powder pressing spent lubricants—Subpart E—PSES.* There shall be no discharge of process wastewater pollutants.

(l) *Surface treatment spent baths.*

SUBPART E—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals surface treated	
Copper	0.739	0.389
Nickel	0.747	0.494
Fluoride	23.2	10.3
Molybdenum	2.57	1.33

(m) *Surface treatment rinse.*

SUBPART E—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals surface treated	
Copper	23.0	12.1
Nickel	23.3	15.4
Fluoride	720	320
Molybdenum	80.0	41.4

(n) *Alkaline cleaning spent baths.*

SUBPART E—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals alkaline cleaned	
Copper	0.635	0.334
Nickel	0.642	0.424
Fluoride	19.9	8.82
Molybdenum	2.21	1.14

(o) *Alkaline cleaning rinse.*

SUBPART E—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals alkaline cleaned	
Copper	15.5	8.16
Nickel	15.7	10.4
Fluoride	486.	216.0
Molybdenum	54.0	27.9

(p) *Molten salt rinse.*

SUBPART E—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals treated with molten salt	
Copper	1.20	0.633
Nickel	1.22	0.804
Fluoride	37.7	16.7

SUBPART E—PSES—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Molybdenum	4.19	2.17

(q) *Tumbling or burnishing wastewater.*

SUBPART E—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals tumbled or burnished	
Copper	2.38	1.25
Nickel	2.40	1.59
Fluoride	74.4	33.0
Molybdenum	8.27	4.28

(r) *Sawing or grinding spent neat oils—Subpart E—PSES.* There shall be no discharge of process wastewater pollutants.

(s) *Sawing or grinding spent emulsions.*

SUBPART E—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals sawed or ground with emulsions	
Copper	0.565	0.297
Nickel	0.570	0.377
Fluoride	17.7	7.84
Molybdenum	1.97	1.02

(t) *Sawing or grinding contact cooling water.*

SUBPART E—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals sawed or ground with contact cooling water	
Copper	4.62	2.43
Nickel	4.67	3.09
Fluoride	145.	64.2
Molybdenum	16.1	8.31

(u) *Sawing or grinding rinse.*

SUBPART E—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground refractory metals rinsed	
Copper	0.026	0.014

SUBPART E—PSES—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Nickel	0.026	0.017
Fluoride	0.804	0.357
Molybdenum	0.089	0.046

(v) *Wet air pollution control blowdown.*

SUBPART E—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals sawed, surface coated or surface treated	
Copper	1.50	0.787
Nickel	1.51	1.00
Fluoride	46.9	20.8
Molybdenum	5.20	2.69

(w) *Miscellaneous wastewater sources.*

SUBPART E—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals formed	
Copper	0.656	0.345
Nickel	0.663	0.438
Fluoride	20.6	9.11
Molybdenum	2.28	1.18

(x) *Dye penetrant testing wastewater.*

SUBPART E—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals product tested	
Copper	0.015	0.008
Nickel	0.015	0.010
Fluoride	0.462	0.205
Molybdenum	0.052	0.027

(y) *Degreasing spent solvents—Subpart E—PSES.* There shall be no discharge of process wastewater pollutants.

§ 471.55 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS). The mass of wastewater pollutants in the refractory metals forming process wastewater shall not exceed the values set forth below:

(a) *Rolling spent neat oils and graphite based lubricants—Subpart E—PSNS.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART E—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals rolled with emulsions	
Copper	0.549	0.262
Nickel	0.236	0.159
Fluoride	25.5	11.3
Molybdenum	2.16	0.957

(c) *Drawing spent lubricants—Subpart E—PSNS.* There shall be no discharge of process wastewater pollutants.

(d) *Extrusion spent lubricants—Subpart E—NSPS.* There shall be no discharge of process wastewater pollutants.

(e) *Extrusion press hydraulic fluid leakage.*

SUBPART E—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals extruded	
Copper	1.53	0.726
Nickel	0.655	0.441
Fluoride	7.08	31.4
Molybdenum	5.99	2.66

(f) *Forging spent lubricants—Subpart E—PSNS.* There shall be no discharge of process wastewater pollutants.

(g) *Forging contact cooling water.*

SUBPART E—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of forged refractory metals cooled with water	
Copper	0.041	0.320
Nickel	0.018	0.021
Fluoride	1.92	0.853
Molybdenum	0.163	0.072

(h) *Equipment cleaning wastewater.*

SUBPART E—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals formed	
Copper	0.174	0.083
Nickel	0.075	0.051
Fluoride	8.09	3.59
Molybdenum	0.684	0.303

(i) *Metal powder production wastewater.*

SUBPART E—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals powder produced	
Copper	0.360	0.172
Nickel	0.155	0.104
Fluoride	16.7	7.42
Molybdenum	1.42	0.627

(j) *Metal powder production floor wash wastewater—Subpart E—PSNS.* There shall be no discharge of process wastewater pollutants.

(k) *Metal powder pressing spent lubricants—Subpart E—PSNS.* There shall be no discharge of process wastewater pollutants.

(l) *Surface treatment spent baths.*

SUBPART E—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals surface treated	
Copper	0.498	0.237
Nickel	0.214	0.144
Fluoride	23.2	10.3
Molybdenum	1.96	0.868

(m) *Surface treatment rinse.*

SUBPART E—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals surface treated	
Copper	15.5	7.38
Nickel	6.66	4.48
Fluoride	720	320
Molybdenum	60.9	27.0

(n) *Alkaline cleaning spent baths.*

SUBPART E—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals alkaline cleaned	
Copper	0.428	0.204
Nickel	0.184	0.124
Fluoride	19.9	8.82
Molybdenum	1.68	0.745

(o) *Alkaline cleaning rinse.*

SUBPART E—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals alkaline cleaned	
Copper	10.5	4.98
Nickel	4.49	3.02
Fluoride	48.6	216
Molybdenum	41.1	18.2

(p) *Molten salt rinse.*

SUBPART E—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals treated with molten salt	
Copper	0.810	0.386
Nickel	0.348	0.234
Fluoride	37.7	16.7
Molybdenum	3.19	1.41

(q) *Tumbling or burnishing wastewater.*

SUBPART E—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals tumbled or burnished	
Copper	1.60	0.763
Nickel	0.688	0.463
Fluoride	74.4	33.0
Molybdenum	6.29	2.79

(r) *Sawing or grinding spent neat oils—Subpart E—PSNS.* There shall be no discharge or process wastewater pollutants.

(s) *Sawing or grinding spent emulsions.*

SUBPART E—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals sawed or ground with emulsions	
Copper	0.380	0.181
Nickel	0.164	0.110
Fluoride	17.7	7.84
Molybdenum	1.50	0.663

(t) *Sawing or grinding contact cooling water.*

SUBPART E—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals sawed or ground with contact cooling water	
Copper	3.11	1.48
Nickel	1.34	0.899
Fluoride	145	64.2
Molybdenum	12.2	5.42

(u) *Sawing or grinding rinse.*

SUBPART E—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground refractory metals rinsed	
Copper	0.018	0.009
Nickel	0.008	0.005
Fluoride	0.803	0.357
Molybdenum	0.068	0.030

(v) *Wet air pollution control blowdown.*

SUBPART E—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals sawed, ground, surface coated or surface treated	
Copper	1.01	0.480
Nickel	0.433	0.291
Fluoride	46.8	20.8
Molybdenum	3.96	1.76

(w) *Miscellaneous wastewater source.*

SUBPART E—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals formed	
Copper	0.658	0.345
Nickel	0.663	0.438
Fluoride	20.6	9.11
Molybdenum	2.28	1.18

(x) *Dye penetrant testing wastewater.*

SUBPART E—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals product tested	
Copper	0.010	0.005
Nickel	0.005	0.003
Fluoride	0.460	0.200
Molybdenum	0.039	0.018

(y) *Degreasing spend solvents—Subpart E—PSNS.* There shall be no discharge of process wastewater pollutants.

§ 471.56 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT) [Reserved].

Subpart F—Titanium Forming Subcategory

§ 471.60 Applicability; description of the titanium forming subcategory.

This subpart applies to discharges of pollutants to waters of the United States, and introductions of pollutants into publicly owned treatment works from the process operations of the titanium forming subcategory.

§ 471.61 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30–125.32, any existing point source subject to this subpart must achieve the following effluent limitations for the process operations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

(a) *Rolling spent neat oils.—Subpart F—BPT.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling contact cooling water.*

SUBPART F—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium rolled with contact cooling water	
Cyanide	1.4	0.588
Lead	2.05	0.976
Zinc	7.13	2.98
Ammonia	570	250
Fluoride	291	129
Oil and grease	97.0	58.0
TSS	200.0	85.0
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(c) *Drawing spent neat oils—Subpart F—BPT.* There shall be no discharge of process wastewater pollutants.

(d) *Extrusion spent neat oils—Subpart F—BPT.* There shall be no discharge of process wastewater pollutants.

(e) *Extrusion spent emulsions.*

SUBPART F—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium extruded	
Cyanide	0.021	0.009
Lead	0.030	0.015
Zinc	0.105	0.074
Ammonia	37	16.0
Fluoride	4.28	1.9
Oil and grease	1.44	0.863
TSS	2.95	1.4
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(f) *Extrusion press hydraulic fluid leakage.*

SUBPART F—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium extruded	
Cyanide	0.052	0.022
Lead	0.075	0.036
Zinc	0.260	0.109
Ammonia	23.7	10.5
Fluoride	10.6	4.70
Oil and grease	3.56	2.14
TSS	7.30	3.47
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(g) *Forging spent lubricants—Subpart F—BPT.* There shall be no discharge of process wastewater pollutants.

(h) *Forging contact cooling water.*

SUBPART F—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of forged titanium cooled with water	
Cyanide	0.580	0.240
Lead	0.840	0.400
Zinc	2.92	1.22
Ammonia	400	180
Fluoride	119	52.8
Oil and grease	40.0	24.0
TSS	82.0	39.0
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(i) *Forging equipment cleaning wastewater.*

SUBPART F—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals forged	
Cyanide	0.012	0.005
Lead	0.017	0.008
Zinc	0.059	0.025
Ammonia	5.33	2.35
Fluoride	2.38	1.06
Oil and grease	0.800	0.480
TSS	1.64	0.780
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(j) *Forging press hydraulic fluid leakage.*

SUBPART F—3PT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of refractory metals forged	
Cyanide	0.293	0.121
Lead	0.424	0.202
Zinc	1.48	0.616
Ammonia	135	59.2
Fluoride	60.1	26.7
Oil and grease	20.2	12.1
TSS	41.4	19.7
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(k) *Tube reducing spent lubricants—Subpart F—BPT.* There shall be no discharge of process wastewater pollutants.

(l) *Heat treatment contact cooling water—Subpart F—BPT.* There shall be no allowance for the discharge of process wastewater pollutants.

(m) *Surface treatment spent baths.*

SUBPART F—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium surface treated	
Cyanide	0.061	0.025
Lead	0.088	0.042
Zinc	0.304	0.127
Ammonia	21.0	9.40
Fluoride	12.4	5.49
Oil and grease	4.16	2.50
TSS	8.53	4.06
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(n) *Surface treatment rinse.*

SUBPART F—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium surface treated	
Cyanide	8.47	3.51
Lead	12.3	5.84
Zinc	42.7	13.0
Ammonia	3,890	1,710
Fluoride	1,740	771
Oil and grease	584	351
TSS	1,200	570
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(o) *Wet air pollution control scrubber blowdown.*

SUBPART F—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium surface treated or forged	
Cyanide	0.621	0.257
Lead	0.899	0.428
Zinc	3.13	1.31
Ammonia	285	126
Fluoride	128	56.5
Oil and grease	42.8	25.7
TSS	87.8	41.8
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(p) *Alkaline cleaning spent baths.*

SUBPART F—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium alkaline cleaned	
Cyanide	0.070	0.029
Lead	0.101	0.048
Zinc	0.351	0.147
Ammonia	32.0	14.1
Fluoride	14.3	6.34
Oil and grease	4.80	2.88
TSS	9.84	4.68
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(q) *Alkaline cleaning rinse.*

SUBPART F—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium alkaline cleaned	
Cyanide	0.801	0.331
Lead	1.16	0.552
Zinc	4.03	1.69
Ammonia	370	160
Fluoride	164	72.9
Oil and grease	55.2	33.1
TSS	113	53.8
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(r) *Molten salt rinse.*

SUBPART F—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium treated with molten salt	
Cyanide	0.277	0.115
Lead	0.401	0.191
Zinc	1.40	0.583
Ammonia	1.28	56.0
Fluoride	56.8	25.2
Oil and grease	19.1	11.5
TSS	39.2	18.6
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(s) *Tumbling wastewater.*

SUBPART F—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium tumbled	
Cyanide	0.229	0.095
Lead	0.332	0.158
Zinc	1.16	0.482
Ammonia	110	46
Fluoride	47.0	20.9
Oil and grease	15.8	9.48
TSS	32.4	15.4
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(t) *Sawing or grinding spent neat oils—Subpart F—BPT.* There shall be no discharge of process wastewater pollutants.

(u) *Sawing or grinding of spent emulsions.*

SUBPART F—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium sawed or ground with an emulsion	
Cyanide	0.053	0.022
Lead	0.077	0.037
Zinc	0.267	0.112
Ammonia	6.60	2.90

SUBPART F—BPT—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Fluoride	10.9	4.83
Oil and grease	3.66	2.20
TSS	7.51	3.57
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(v) *Sawing or grinding contact cooling water.*

SUBPART F—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium sawed or ground with contact cooling water	
Cyanide	1.38	0.571
Lead	2.00	0.952
Zinc	6.95	2.91
Ammonia	635	279
Fluoride	283	126
Oil and grease	95.2	57.1
TSS	195	92.8
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(w) *Dye penetrant testing wastewater.*

SUBPART F—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium tested with dye penetrant methods	
Cyanide	0.325	0.135
Lead	0.471	0.224
Zinc	1.64	0.683
Ammonia	149	65.7
Fluoride	66.7	29.6
Oil and grease	22.4	13.5
TSS	45.9	21.9
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(x) *Miscellaneous wastewater sources.*

SUBPART F—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium formed	
Cyanide	0.010	0.004
Lead	0.014	0.007
Zinc	0.048	0.020
Ammonia	4.32	1.90
Fluoride	1.93	0.856
Oil and grease	0.648	0.389
TSS	1.33	0.632
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(y) *Degreasing spent solvents—Subpart F—BPT.* There shall be no discharge of process wastewater pollutants.

§ 471.62 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30–125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(a) *Rolling spent neat oils—Subpart F—BAT.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling contact cooling water.*

SUBPART F—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium rolled with contact cooling water	
Cyanide	0.142	0.059
Lead	0.205	0.098
Zinc	0.713	0.298
Ammonia	57.0	25.0
Fluoride	29.1	12.90

(c) *Drawing spent neat oils—Subpart F—BAT.* There shall be no discharge of process wastewater pollutants.

(d) *Extrusion spent neat oils—Subpart F—BAT.* There shall be no discharge of process wastewater pollutants.

(e) *Extrusion spent lubricants.*

SUBPART F—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium extruded	
Cyanide	0.021	0.009
Lead	0.030	0.015
Zinc	0.105	0.044
Ammonia	37.0	16.0
Fluoride	4.23	1.90

(f) *Extrusion press hydraulic fluid leakage.*

SUBPART F—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium extruded	
Cyanide	0.052	0.022
Lead	0.075	0.036
Zinc	0.260	0.109
Ammonia	23.7	10.5
Fluoride	10.6	4.70

(g) *Forging spent lubricants—Subpart F—BAT.* There shall be no discharge of process wastewater pollutants.

(h) *Forging contact cooling water.*

SUBPART F—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of forged titanium cooled with water	
Cyanide	0.029	0.012
Lead	0.042	0.020
Zinc	0.146	0.061
Ammonia	13.3	5.88
Fluoride	5.95	2.64

(i) *Forging equipment cleaning wastewater.*

SUBPART F—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium forged cyanide	
Cyanide	0.012	0.005
Lead	0.017	0.008
Zinc	0.059	0.025
Ammonia	5.33	2.35
Fluoride	2.38	1.06

(j) *Forging press hydraulic fluid leakage.*

SUBPART F—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium forged	
Cyanide	0.293	0.121
Lead	0.424	0.202
Zinc	1.48	0.616
Ammonia	135	59.2
Fluoride	60.1	26.7

(k) *Tube reducing spent lubricants—Subpart F—BAT.* There shall be no discharge of process wastewater pollutants.

(l) *Heat treatment contact cooling water—Subpart F—BAT.* There shall be no discharge allowance for process wastewater pollutants.

(m) *Surface treatment spent baths.*

SUBPART F—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium surface treated	
Cyanide	0.081	0.025
Lead	0.088	0.042
Zinc	0.304	0.127
Ammonia	21.0	9.40
Fluoride	12.4	5.49

(n) *Surface treatment rinse.*

SUBPART F—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium surface treated	
Cyanide	0.847	0.351
Lead	1.23	0.584
Zinc	4.27	1.78
Ammonia	280	120
Fluoride	174	77.1

(o) *Wet air pollutant control scrubber blowdown.*

SUBPART F—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium surface treated or forged	
Cyanide	0.062	0.026
Lead	0.090	0.043
Zinc	0.313	0.131
Ammonia	28.5	12.6
Fluoride	12.8	5.68

(p) *Alkaline cleaning spent baths.*

SUBPART F—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium alkaline cleaned	
Cyanide	0.070	0.029
Lead	0.101	0.048
Zinc	0.351	0.147
Ammonia	32	14.1
Fluoride	14.3	6.34

(q) *Akaline cleaning rinse.*

SUBPART F—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium alkaline cleaned	
Cyanide	0.080	0.033
Lead	0.116	0.055
Zinc	0.403	0.169
Ammonia	36.8	16.2
Fluoride	16.4	7.29

(r) *Molten salt rinse.*

SUBPART F—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium treated with molten salt	
Cyanide	0.277	0.115

SUBPART F—BAT—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Lead	0.401	0.191
Zinc	1.40	0.583
Ammonia	128	56
Fluoride	56.8	25.2

(s) *Tumbling wastewater.*

SUBPART F—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium tumbled	
Cyanide	0.022	0.010
Lead	0.033	0.016
Zinc	0.116	0.048
Ammonia	11.0	4.60
Fluoride	4.70	2.09

(t) *Sawing or grinding spent neat oils—Subpart F—BAT.* There shall be no discharge of process wastewater pollutants.

(u) *Sawing or grinding spent emulsions.*

SUBPART F—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium sawed or ground with emulsions	
Cyanide	0.053	0.022
Lead	0.077	0.037
Zinc	0.267	0.112
Ammonia	6.60	2.90
Fluoride	10.9	4.83

(v) *Sawing or grinding contact cooling water.*

SUBPART F—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) to titanium sawed or ground with contact cooling water	
Cyanide	0.138	0.057
Lead	0.200	0.095
Zinc	0.695	0.291
Ammonia	63.5	27.9
Fluoride	28.3	12.6

(w) *Dye penetrant testing wastewater.*

SUBPART F—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium tested with dye penetrant methods	
Cyanide	0.325	0.135
Lead	0.471	0.224
Zinc	1.64	0.683
Ammonia	149	65.7
Fluoride	66.7	29.6

(x) *Miscellaneous wastewater sources.*

SUBPART F—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium formed	
Cyanide	0.010	0.004
Lead	0.014	0.007
Zinc	0.040	0.020
Ammonia	4.32	1.90
Fluoride	1.93	0.856

(y) *Degreasing spent solvents—Subpart F—BAT.* There shall be no discharge of process wastewater pollutants.

§ 471.63 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS). The discharge of wastewater pollutants from titanium process wastewater shall not exceed the values set forth below:

(a) *Rolling spent neat oils—Subpart F—NSPS.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling contact cooling water.*

SUBPART F—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium rolled with contact cooling water	
Cyanide	0.142	0.059
Lead	0.205	0.098
Zinc	0.713	0.298
Ammonia	65.1	26.6
Fluoride	29.1	12.9
Oil and grease	9.76	5.86
TSS	20.0	9.52
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(c) *Drawing spent neat oils—Subpart F—NSPS.* There shall be no discharge of process wastewater pollutants.

(d) *Extrusion spent neat oils—Subpart F—NSPS.* There shall be no discharge of process wastewater pollutants.

(e) *Extrusion spent emulsions.*

SUBPART F—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium extruded	
Cyanide	0.021	0.009
Lead	0.030	0.015
Zinc	0.105	0.074
Ammonia	9.59	4.22
Fluoride	4.28	1.9
Oil and grease	1.44	0.663
TSS	2.95	1.40
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(f) *Extrusion press hydraulic fluid leakage*

SUBPART F—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium extruded	
Cyanide	0.052	0.022
Lead	0.075	0.036
Zinc	0.260	0.109
Ammonia	23.7	10.5
Fluoride	10.6	4.70
Oil and grease	3.56	2.14
TSS	7.30	3.47
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(g) *Forging spent lubricants—Subpart F—NSPS.* There shall be no discharge of process wastewater pollutants.

(h) *Forging contact cooling water.*

SUBPART F—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of forged titanium cooled with water	
Cyanide	0.029	0.012
Lead	0.0420	0.020
Zinc	0.146	0.061
Ammonia	13.3	5.86
Fluoride	5.95	2.64
Oil and grease	2.00	1.20
TSS	4.10	1.95
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(i) *Forging equipment cleaning wastewater.*

SUBPART F—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium forged	
Cyanide	0.001	0.005
Lead	0.002	0.0008
Zinc	0.006	0.003

SUBPART F—NSPS—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Ammonia	0.533	0.235
Fluoride	0.238	0.106
Oil and grease	0.080	0.048
TSS	0.164	0.078
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(j) *Forging press hydraulic fluid leakage.*

SUBPART F—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium forged	
Cyanide	0.293	0.121
Lead	0.424	0.202
Zinc	1.48	0.616
Ammonia	135	59.2
Fluoride	60.1	26.7
Oil and grease	20.2	12.1
TSS	41.4	19.7
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(k) *Tube reducing spent lubricants—Subpart F—NSPS.* There shall be no discharge of process wastewater pollutants.

(l) *Heat treatment contact cooling water—Subpart F—NSPS.* There shall be no discharge allowance for the discharge of process wastewater pollutants.

(m) *Surface treatment spent baths.*

SUBPART F—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium surface treated	
Cyanide	0.061	0.025
Lead	0.088	0.042
Zinc	0.304	0.127
Ammonia	21.0	9.40
Fluoride	12.4	5.49
Oil and grease	4.16	2.50
TSS	8.53	4.06
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(n) *Surface treatment rinse.*

SUBPART F—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium surface treated	
Cyanide	0.847	0.351
Lead	1.23	0.584
Zinc	3.10	1.30
Ammonia	389	171

SUBPART F—NSPS—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Fluoride	174	77.1
Oil and grease	58.4	35.1
TSS	120	57.0
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(o) *Wet air pollution control scrubber blowdown.*

SUBPART F—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium surface treated or forged	
Cyanide	0.062	0.026
Lead	0.090	0.043
Zinc	0.313	0.131
Ammonia	28.5	12.6
Fluoride	12.8	5.65
Oil and grease	4.28	2.57
TSS	8.78	4.18
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(p) *Alkaline cleaning spent baths.*

SUBPART F—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium alkaline cleaned	
Cyanide	0.070	0.030
Lead	0.101	0.048
Zinc	0.351	0.147
Ammonia	340	150
Fluoride	14.3	6.34
Oil and grease	4.80	2.88
TSS	9.84	4.68
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(q) *Alkaline cleaning rinse.*

SUBPART F—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium alkaline cleaned	
Cyanide	0.080	0.033
Lead	0.116	0.055
Zinc	0.403	0.169
Ammonia	36.8	16.2
Fluoride	16.4	7.29
Oil and grease	5.52	3.31
TSS	11.3	5.38
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(r) *Molten salt rinse.*

SUBPART F—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium treated with molten salt	
Cyanide	0.277	0.115
Lead	0.401	0.191
Zinc	1.40	0.583
Ammonia	128	56.0
Fluoride	56.8	25.2
Oil and grease	19.1	11.5
TSS	39.2	18.6
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(s) *Tumbling wastewater.*

SUBPART F—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium tumbled	
Cyanide	0.023	0.010
Lead	0.033	0.016
Zinc	0.116	0.048
Ammonia	10.6	4.63
Fluoride	4.70	2.09
Oil and grease	1.58	0.948
TSS	3.24	1.54
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(t) *Sawing or grinding spent neat oils—Subpart F—NSPS.* There shall be no discharge of process wastewater pollutants.

(u) *Sawing or grinding spent emulsions.*

SUBPART F—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium sawed or ground with emulsions	
Cyanide	0.053	0.022
Lead	0.077	0.037
Zinc	0.267	0.112
Ammonia	24.4	10.7
Fluoride	10.9	4.83
Oil and grease	3.66	2.20
TSS	7.51	3.57
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(v) *Sawing or grinding contact cooling water.*

SUBPART F—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium sawed or ground with contact cooling water	
Cyanide	0.138	0.057
Lead	0.200	0.095

SUBPART F—NSPS—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Zinc	0.695	0.291
Ammonia	63.5	27.9
Fluoride	28.3	12.6
Oil and grease	9.52	5.71
TSS	19.5	9.28
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(w) *Dye penetrant testing wastewater.*

SUBPART F—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium tested using dye pentrant methods	
Cyanide	0.325	0.135
Lead	0.471	0.224
Zinc	1.64	0.683
Ammonia	149	65.7
Fluoride	66.7	29.6
Oil and grease	22.4	13.5
TSS	45.9	21.9
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(x) *Miscellaneous wastewater sources.*

SUBPART F—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium formed	
Cyanide	0.010	0.004
Lead	0.014	0.007
Zinc	0.048	0.020
Ammonia	4.32	1.90
Fluoride	1.93	0.856
Oil and grease	0.648	0.389
TSS	1.33	0.63
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(y) *Degreasing spent solvents—Subpart F—NSPS.* There shall be no discharge of process wastewater pollutant.

§ 471.64 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and by August 23, 1988 achieve the following pretreatment standards for existing sources (PSES) The mass of wastewater pollutants in titanium forming process wastewater introduced into a POTW shall not exceed the following values:

(a) *Rolling spent neat oils—Subpart F—PSES.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling contact cooling water.*

SUBPART F—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium rolled with contact cooling water	
Cyanide	0.142	0.059
Lead	0.205	0.098
Zinc	0.713	0.298
Ammonia	65.1	28.6
Fluoride	29.1	12.9

(c) *Drawing spent neat oils—Subpart F—PSES.* There shall be no discharge of process wastewater pollutants.

(d) *Extrusion spent neat oils—Subpart F—PSES.* There shall be no discharge of process wastewater pollutants.

(e) *Extrusion spent emulsions.*

SUBPART F—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium extruded	
Cyanide	0.021	0.009
Lead	0.030	0.015
Zinc	0.105	0.044
Ammonia	9.59	4.22
Fluoride	4.28	1.90

(f) *Extrusion press hydraulic fluid leakage.*

SUBPART F—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium extrudod	
Cyanide	0.052	0.022
Lead	0.75	0.036
Zinc	0.260	0.109
Ammonia	23.7	10.5
Fluoride	10.6	4.70

(g) *Forging spent lubricants—Subpart F—PSES.* There shall be no discharge of process wastewater pollutants.

(h) *Forging contact cooling water.*

SUBPART F—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of forged titanium cooled with water	
Cyanide	0.029	0.012
Lead	0.042	0.020
Zinc	0.146	0.061
Ammonia	13.3	5.86
Fluoride	5.95	2.64

(i) *Forging equipment cleaning wastewater.*

SUBPART F—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium forged	
Cyanide	0.012	0.005
Lead	0.017	0.008
Zinc	0.059	0.025
Ammonia	5.33	2.35
Fluoride	2.38	1.06

(j) *Forging press hydraulic fluid leakage.*

SUBPART F—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium forged	
Cyanide	0.293	0.121
Lead	0.424	0.202
Zinc	1.48	0.616
Ammonia	135	59.2
Fluoride	60.1	26.7

(k) *Tube reducing spent lubricants—Subpart F—PSES.* There shall be no discharge of process wastewater pollutants.

(l) *Heat treatment contact cooling water—Subpart F—PSES.* There shall be no discharge allowance for the discharge of process wastewater pollutants.

(m) *Surface treatment spent baths.*

SUBPART F—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium surface treated	
Cyanide	0.061	0.025
Lead	0.088	0.042
Zinc	0.304	0.127
Ammonia	27.7	9.40
Fluoride	12.4	5.49

(n) *Surface treatment rinse.*

SUBPART F—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium surface treated	
Cyanide	0.847	0.351
Lead	1.23	0.584
Zinc	4.27	1.78
Ammonia	389	171
Fluoride	174	77.1

(o) *Wet air pollution control scrubber blowdown.*

SUBPART F—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium surface treated or forged	
Cyanide	0.062	0.026
Lead	0.090	0.043
Zinc	0.313	0.131
Ammonia	26.5	12.6
Fluoride	12.8	5.65

(p) *Alkaline cleaning spent baths.*

SUBPART F—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium alkaline cleaned	
Cyanide	0.070	0.029
Lead	0.101	0.048
Zinc	0.351	0.147
Ammonia	32.0	14.1
Fluoride	14.3	6.34

(q) *Alkaline cleaning rinse.*

SUBPART F—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium alkaline cleaned	
Cyanide	0.080	0.033
Lead	0.116	0.055
Zinc	0.403	0.169
Ammonia	36.8	16.2
Fluoride	16.4	7.29

(r) *Molten salt rinse.*

SUBPART F—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium treated with molten salt	
Cyanide	0.277	0.115
Lead	0.401	0.191
Zinc	1.40	0.583
Ammonia	128	56.0
Fluoride	56.8	25.2

(s) *Tumbling wastewater.*

SUBPART F—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium tumbled	
Cyanide	0.023	0.010
Lead	0.033	0.016
Zinc	0.116	0.048
Ammonia	10.6	4.63
Fluoride	4.70	2.09

(t) *Sawing or grinding spent neat oils—Subpart F—PSES.* There shall be no discharge of process wastewater pollutants.

(u) *Sawing or grinding spent emulsions.*

SUBPART F—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium sawed or ground with emulsions	
Cyanide	0.053	0.022
Lead	0.077	0.037
Zinc	0.267	0.112
Ammonia	24.4	10.7
Fluoride	10.9	4.83

(v) *Sawing or grinding contact cooling water.*

SUBPART F—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium sawed or ground with contact cooling water	
Cyanide	0.138	0.057
Lead	0.200	0.095
Zinc	0.695	0.291
Ammonia	63.5	27.9
Fluoride	28.3	12.6

(w) *Dye pentrant testing wastewater.*

SUBPART F—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium treated using dye penetrant methods	
Cyanide	0.325	0.135
Lead	0.471	0.224
Zinc	1.64	0.638
Ammonia	149	65.7
Fluoride	66.7	29.6

(x) *Miscellaneous wastewater sources.*

SUBPART F—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium formed	
Cyanide	0.010	0.004
Lead	0.014	0.007
Zinc	0.048	0.020
Ammonia	4.32	1.90
Fluoride	1.93	0.856

(y) *Degreasing spent solvents—Subpart F—PSES.* There shall be no discharge of process wastewater pollutants.

§ 471.65 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS). The mass of wastewater pollutants in the titanium forming process wastewater shall not exceed the values set forth below:

(a) *Rolling spent neat oils—Subpart F—PSNS.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling contact cooling water.*

SUBPART F—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium rolled with contact cooling water	
Cyanide	0.142	0.059
Lead	0.205	0.098
Zinc	0.713	0.298
Ammonia	65.1	28.6
Fluoride	29.1	12.9

(c) *Drawing spent neat oils—Subpart F—PSNS.* There shall be no discharge of process wastewater pollutants.

(d) *Extrusion spent neat oils—Subpart F—PSNS.* There shall be no discharge of process wastewater pollutants.

(e) *Extrusion spent emulsions.*

SUBPART F—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium extruded	
Cyanide	0.021	0.009
Lead	0.030	0.015
Zinc	0.105	0.044
Ammonia	9.59	4.22
Fluoride	4.28	1.90

(f) *Extrusion press hydraulic fluid leakage.*

SUBPART F—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium extruded	
Cyanide	0.052	0.022
Lead	0.075	0.036
Zinc	0.260	0.109
Ammonia	23.7	10.5
Fluoride	10.6	4.70

(g) *Forging spent lubricants—Subpart F—PSNS.* There shall be no discharge of process wastewater pollutants.

(h) *Forging contact cooling water.*

SUBPART F—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of forged titanium cooled with water	
Cyanide	0.029	0.012
Lead	0.042	0.020
Zinc	0.146	0.061
Ammonia	13.3	5.66
Fluoride	5.95	2.64

(i) *Forging equipment cleaning wastewater.*

SUBPART F—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium forged	
Cyanide	0.012	0.005
Lead	0.017	0.008
Zinc	0.059	0.025
Ammonia	5.33	2.35
Fluoride	2.38	1.06

(j) *Forging press hydraulic fluid leakage.*

SUBPART F—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium forged	
Cyanide	0.293	0.121
Lead	0.424	0.202
Zinc	1.48	0.616
Ammonia	135	59.2
Fluoride	60.1	26.7

(k) *Tube reducing spent lubricants—Subpart F—PSNS.* There shall be no discharge of process wastewater pollutants.

(l) *Heat treatment contact cooling water—Subpart F—PSNS.* There shall be no discharge allowance for the discharge of process wastewater pollutants.

(m) *Surface treatment spent baths.*

SUBPART F—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium surface treated	
Cyanide	0.061	0.025
Lead	0.088	0.042
Zinc	0.304	0.127
Ammonia	27.7	9.40
Fluoride	12.4	5.49

(n) *Surface treatment rinse.*

SUBPART F—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium surface treated	
Cyanide	0.847	0.351
Lead	1.23	0.584
Zinc	4.27	1.78
Ammonia	389	171
Fluoride	174	77.1

(o) *Wet air pollution control scrubber blowdown.*

SUBPART F—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium surface treated	
Cyanide	0.062	0.026
Lead	0.090	0.043
Zinc	0.313	0.131
Ammonia	28.5	12.6
Fluoride	12.8	5.65

(p) *Alkaline cleaning spent baths.*

SUBPART F—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium alkaline cleaned	
Cyanide	0.070	0.029
Lead	0.101	0.048
Zinc	0.351	0.147
Ammonia	32.0	14.1
Fluoride	14.3	6.34

(q) *Alkaline cleaning rinse.*

SUBPART F—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium alkaline cleaned	
Cyanide	0.080	0.033
Lead	0.116	0.055
Zinc	0.403	0.169
Ammonia	36.8	16.2
Fluoride	16.4	7.29

(r) *Molten salt rinse.*

SUBPART F—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium treated with molten salt	
Cyanide	0.277	0.115
Lead	0.401	0.191
Zinc	1.40	0.583
Ammonia	128	56.0
Fluoride	56.8	25.2

(s) *Tumbling wastewater.*

SUBPART F—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium tumbled	
Cyanide	0.023	0.010
Lead	0.033	0.016
Zinc	0.116	0.048
Ammonia	10.6	4.63
Fluoride	4.70	2.09

(t) *Sawing or grinding spent neat oils—Subpart F—PSNS.* There shall be no discharge of process wastewater pollutants.

(u) *Sawing or grinding spent emulsions.*

SUBPART F—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium sawed or ground with emulsions	
Cyanide	0.053	0.022
Lead	0.077	0.037
Zinc	0.267	0.112
Ammonia	24.4	10.7
Fluoride	10.9	4.83

(v) *Sawing or grinding contact cooling water.*

SUBPART F—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium sawed or ground with contact cooling water	
Cyanide	0.138	0.057
Lead	0.200	0.095
Zinc	0.695	0.291
Ammonia	63.5	27.9
Fluoride	28.3	12.6

(w) *Dye penetrant testing wastewater.*

SUBPART F—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium treated using dye penetrant methods	
Cyanide	0.325	0.135
Lead	0.471	0.224
Zinc	1.64	0.683
Ammonia	149	65.7
Fluoride	66.7	29.6

(x) *Miscellaneous wastewater sources.*

SUBPART F—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of titanium formed	
Cyanide	0.010	0.004
Lead	0.014	0.007
Zinc	0.048	0.020
Ammonia	4.32	1.90
Fluoride	1.93	0.656

(y) *Degreasing spent solvents—Subpart F—PSNS.* There shall be no discharge of process wastewater pollutants.

§ 471.66 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT) [Reserved].

Subpart G—Uranium Forming Subcategory

§ 471.70 Applicability; description of the uranium forming subcategory.

This subpart applies to discharges of pollutants to waters of the United States, and introductions of pollutants into publicly owned treatment works from the process operations of the uranium forming subcategory.

§ 471.71 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations for the process operations representing the degree of effluent reduction attainable by the application of the best praticable control technology currently available (BPT):

(a) *Extrusion spent lubricants—Subpart G—BPT.* There shall be no discharge process wastewater pollutants.

(b) *Extrusion tool contact cooling water.*

SUBPART G—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium extruded	
Cadium	0.117	0.052
Chromium	0.152	0.062
Copper	0.654	0.344
Lead	0.145	0.069
Nickel	0.661	0.437
Fluoride	20.5	9.08
Molybdenum	2.28	1.18
Oil and grease	6.89	4.13
TSS	14.1	6.71
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(c) *Heat treatment contact cooling water.*

SUBPART G—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of extruded or forged uranium heat treated	
Cadium	0.646	0.285
Chromium	0.836	0.342
Copper	3.61	1.90
Lead	0.798	0.390
Nickel	3.65	2.42
Fluoride	113	50.2
Molybdenum	12.6	6.5
Oil and grease	38	22.8
TSS	77.9	37.1
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(d) *Forging spent lubricants—Subpart G—BPT.* There shall be no discharge of process wastewater pollutants.

(e) *Surface treatment spent baths.*

SUBPART G—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off- pounds) of uranium surface treated	
Cadmium	0.010	0.004
Chromium	0.012	0.005
Copper	0.052	0.027
Lead	0.012	0.006
Nickel	0.052	0.035
Fluoride	1.62	0.718
Molybdenum	0.180	0.093
Oil and grease	0.544	0.327
TSS	1.12	0.531
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(f) *Surface treatment rinse.*

SUBPART G—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium surface treated	
Cadmium	0.115	0.050
Chromium	0.149	0.061
Copper	0.641	0.341
Lead	0.142	0.068
Nickel	0.647	0.428
Fluoride	20.1	8.90
Molybdenum	2.23	1.16
Oil and grease	6.74	4.05
TSS	13.8	6.57
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(g) *Wet air pollution control scrubber blowdown.*

SUBPART G—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium surface treated	
Cadmium	0.00	0.0006
Chromium	0.002	0.0007
Copper	0.007	0.004
Lead	0.002	0.698
Nickel	0.007	0.005
Fluoride	0.208	0.092
Molybdenum	0.023	0.012
Oil and grease	0.070	0.042
TSS	0.143	0.068
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(h) *Sawing or grinding spent emulsions.*

SUBPART G—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium sawed or ground with emulsions	
Cadmium	0.002	0.0009
Chromium	0.003	0.001
Copper	0.011	0.006
Lead	0.003	0.001
Nickel	0.011	0.007
Fluoride	0.338	0.150
Molybdenum	0.038	0.020
Oil and grease	0.114	0.068
TSS	0.233	0.111
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(i) *Sawing or grinding contact cooling water.*

SUBPART G—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium sawed or ground with contact cooling ater	
Cadmium	0.561	0.248
Chromium	0.726	0.297
Copper	3.14	1.65
Lead	0.693	0.330
Nickel	3.17	2.1
Fluoride	98.2	43.6
Molybdenum	10.9	5.65
Oil and grease	33.0	19.8
TSS	67.7	32.2
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(j) *Sawing or grinding rinse.*

SUPART G—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground uranium rinses	
Cadmium	0.002	0.0007
Chromium	0.002	0.0009
Copper	0.009	0.005
Lead	0.002	0.001
Nickel	0.009	0.006
Fluoride	0.277	0.123
Molybdenum	0.031	0.016
Oil and grease	0.093	0.056
TSS	0.191	0.091
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(k) *Area cleaning rinse.*

SUBPART G—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium formed	
Cadmium	0.015	0.007
Chromium	0.019	0.008
Copper	0.082	0.043
Lead	0.018	0.009

SUBPART G—BPT—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Nickel	0.083	0.055
Fluoride	2.56	1.14
Molybdenum	0.284	0.147
Oil and grease	0.858	0.515
TSS	1.76	0.837
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(l) *Drum washwater.*

SUBPART G—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium formed	
Cadmium	0.015	0.007
Chromium	0.020	0.008
Copper	0.084	0.045
Lead	0.019	0.009
Nickel	0.085	0.057
Fluoride	2.64	1.17
Molybdenum	0.293	0.152
Oil and grease	0.886	0.532
TSS	1.82	0.864
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(m) *Laundry washwater.*

SUBPART G—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/employee—day	
Cadmium	0.018	0.008
Chromium	.023	.010
Copper	.100	.053
Lead	.022	.011
Nickel	.101	.067
Fluoride	3.12	1.39
Molybdenum	.347	.179
Oil and grease	1.05	.629
TSS	2.15	1.02
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(n) *Degreasing spent solvents—Subpart G—BPT.* There shall be no discharge of process wastewater pollutants.

§ 471.72 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(a) *Extrusion spent lubricants—Subpart G—BAT.* There shall be no discharge of process wastewater pollutants.

(b) *Extrusion tool contact cooling water.*

SUBPART G—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium extruded	
Cadmium	0.007	0.003
Chromium	0.013	0.005
Copper	0.044	0.021
Lead	0.010	0.005
Nickel	0.019	0.013
Fluoride	2.05	0.908
Molybdenum	0.173	0.077

(c) *Heat treatment contact cooling water.*

SUBPART G—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of extruded or forged uranium heat treated	
Cadmium	0.006	0.003
Chromium	0.012	0.005
Copper	0.040	0.019
Lead	0.009	0.004
Nickel	0.017	0.012
Fluoride	1.86	0.827
Molybdenum	0.158	0.070

(d) *Forging spent lubricants—Subpart G—BAT.* There shall be no discharge of process wastewater pollutants.

(e) *Surface treatment spent baths.*

SUBPART G—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium surface treated	
Cadmium	0.006	0.002
Chromium	0.010	0.004
Copper	0.035	0.017
Lead	0.008	0.004
Nickel	0.015	0.010
Fluoride	1.62	0.718
Molybdenum	0.137	0.061

(f) *Surface treatment rinse.*

SUBPART G—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium surface treated	
Cadmium	0.068	0.027
Chromium	0.125	0.051
Copper	0.432	0.260
Lead	0.095	0.044
Nickel	0.186	0.125
Fluoride	20.1	8.90
Molybdenum	1.70	0.752

(g) *Wet air pollution control scrubber blowdown.*

SUBPART G—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium surface treated	
Cadmium	0.0007	0.0003
Chromium	0.001	0.0005
Copper	0.005	0.002
Lead	0.001	0.0005
Nickel	0.002	0.001
Fluoride	0.208	0.092
Molybdenum	0.018	0.008

(h) *Sawing or grinding spent emulsions.*

SUBPART G—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium sawed or ground with emulsions	
Cadmium	0.001	0.0005
Chromium	0.002	0.0009
Copper	0.007	0.004
Lead	0.001	0.002
Nickel	0.003	0.002
Fluoride	0.338	0.150
Molybdenum	0.029	0.013

(i) *Sawing or grinding contact cooling water.*

SUBPART G—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium sawed or ground with contact cooling water	
Cadmium	0.033	0.013
Chromium	0.061	0.025
Copper	0.211	0.101
Lead	0.046	0.022
Nickel	0.091	0.061
Fluoride	9.82	4.36
Molybdenum	0.830	0.368

(j) *Sawing or grinding rinse.*

SUBPART G—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground uranium rinse	
Cadmium	0.001	0.0004
Chromium	0.002	0.0007
Copper	0.006	0.003
Lead	0.002	0.0006
Nickel	0.003	0.002
Fluoride	0.277	0.123
Molybdenum	0.024	0.011

(k) *Area cleaning rinse.*

SUBPART G—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium formed	
Cadmium	0.009	0.004
Chromium	0.016	0.007
Copper	0.055	0.026
Lead	0.012	0.006
Nickel	0.024	0.016
Fluoride	2.56	1.14
Molybdenum	0.216	95.7

(l) *Drum, washwater.*

SUBPART G—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium formed	
Cadmium	0.009	0.004
Chromium	0.017	0.007
Copper	0.057	0.027
Lead	0.013	0.006
Nickel	0.025	0.017
Fluoride	2.64	1.17
Molybdenum	0.223	0.099

(m) *Laundry washwater.*

SUBPART G—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/employee—day	
Cadmium	0.005	0.002
Chromium	0.010	0.004
Copper	0.034	0.011
Lead	0.008	0.004
Nickel	0.015	0.010
Fluoride	1.56	0.007
Molybdenum	0.130	0.059

(n) *Degreasing spent solvents—Subpart G—BAT.* There shall be no discharge of process wastewater pollutants.

§ 471.73 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS). The mass of pollutants in the uranium forming process wastewater shall not exceed the following values:

(a) *Extrusion spent lubricants—Subpart G—NSPS.* There shall be no discharge of process wastewater pollutants.

(b) *Extrusion tool contact cooling water.*

SUBPART G—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium extruded	
Cadmium	0.007	0.003
Chromium	0.013	0.005
Copper	0.044	0.021
Lead	0.010	0.005
Nickel	0.019	0.013
Fluoride	2.05	0.906
Molybdenum	0.173	0.077
Oil and grease	0.344	0.344
TSS	0.516	0.413
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(c) *Heat treatment contact cooling water.*

SUBPART G—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of extruded or forged uranium heat treated	
Cadmium	0.006	0.003
Chromium	0.012	0.005
Copper	0.040	0.019
Lead	0.009	0.004
Nickel	0.017	0.012
Fluoride	1.86	0.827
Molybdenum	0.158	0.070
Oil and grease	0.313	0.313
TSS	0.470	0.376
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(d) *Forging spent lubricants—Subpart G—NSPS.* There shall be no discharge of process wastewater pollutants.

(e) *Surface treatment spent baths.*

SUBPART G—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium surface treated	
Cadmium	0.006	0.002
Chromium	0.010	0.004
Copper	0.035	0.017
Lead	0.008	0.004
Nickel	0.015	0.010
Fluoride	1.62	0.718
Molybdenum	0.137	0.061
Oil and grease	0.272	0.272
TSS	0.408	0.327
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(f) *Surface treatment rinse.*

SUBPART G—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium surface treated	
Cadmium	0.068	0.027

SUBPART G—NSPS—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Chromium	0.125	0.051
Copper	0.432	0.206
Lead	0.095	0.044
Nickel	0.186	0.125
Fluoride	20.1	8.90
Molybdenum	1.70	0.752
Oil and grease	3.37	3.37
TSS	5.06	4.05
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(g) *Wet air pollution control scrubber blowdown.*

SUBPART G—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium surface treated	
Cadmium	0.0007	0.0003
Chromium	0.001	0.0005
Copper	0.005	0.002
Lead	0.001	0.0005
Nickel	0.002	0.001
Fluoride	0.208	0.092
Molybdenum	0.018	0.008
Oil and grease	0.035	0.035
TSS	0.053	0.042
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(h) *Sawing or grinding spent emulsions.*

SUBPART G—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium sawed or ground with emulsions	
Cadmium	0.001	0.0005
Chromium	0.002	0.0009
Copper	0.007	0.0004
Lead	0.001	0.0002
Nickel	0.003	0.002
Fluoride	0.338	0.150
Molybdenum	0.029	0.013
Oil and grease	0.057	0.057
TSS	0.085	0.068
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(i) *Sawing or grinding contact cooling water.*

SUBPART G—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium sawed or ground with contact cooling water	
Cadmium	0.033	0.013
Chromium	0.061	0.025
Copper	0.211	0.101
Lead	0.046	0.022
Nickel	0.091	0.061
Fluoride	9.82	4.36

SUBPART G—NSPS—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Molybdenum	0.830	0.368
Oil and grease	1.65	1.65
TSS	2.48	1.98
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(j) *Sawing or grinding rinse.*

SUBPART G—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground uranium rinsed	
Cadmium	0.001	0.0004
Chromium	0.002	0.0007
Copper	0.008	0.003
Lead	0.002	0.0006
Nickel	0.003	0.002
Fluoride	0.277	0.123
Molybdenum	0.024	0.011
Oil and grease	0.047	0.047
TSS	0.070	0.056
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(k) *Area cleaning rinse.*

SUBPART G—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium formed	
Cadmium	0.009	0.004
Chromium	0.016	0.007
Copper	0.055	0.026
Lead	0.012	0.006
Nickel	0.024	0.016
Fluoride	2.56	1.14
Molybdenum	0.216	0.096
Oil and grease	0.429	0.429
TSS	0.644	0.515
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(l) *Drum washwater.*

SUBPART G—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium formed	
Cadmium	0.009	0.004
Chromium	0.017	0.007
Copper	0.057	0.027
Lead	0.013	0.006
Nickel	0.025	0.017
Fluoride	2.64	1.17
Molybdenum	0.223	0.099
Oil and grease	0.443	0.443
TSS	0.665	0.532
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(m) *Laundry washwater.*

SUBPART G—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/employee—day	
Cadmium	0.005	0.002
Chromium	0.010	0.004
Copper	0.034	0.016
Lead	0.008	0.004
Nickel	0.015	0.010
Fluoride	1.56	0.692
Molybdenum	0.132	0.059
Oil and grease	0.262	0.262
TSS	0.393	0.315
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(n) *Degreasing spent solvents—Subpart G—NSPS.* There shall be no discharge of process waster pollutants.

§ 471.74 Pretreatment standards for existing sources (PSES) [Reserved].

§ 471.75 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS). The mass of wastewater pollutants in uranium forming process wastewater introduced into a POTW shall not exceed the following values:

(a) *Extrusion spent lubricants—Subpart G—PSNS.* There shall be no discharge of process wastewater pollutants.

(b) *Extrusion tool contact cooling water.*

SUBPART G—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium extruded	
Cadmium	0.007	0.003
Chromium	0.013	0.005
Copper	0.044	0.021
Lead	0.010	0.005
Nickel	0.019	0.013
Fluoride	2.05	0.908
Molybdenum	0.173	0.077

(c) *Heat treatment contact cooling water.*

SUBPART G—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of extruded or forged uranium heat treated	
Cadmium	0.006	0.003
Chromium	0.012	0.005

SUBPART G—PSNS—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Copper	0.040	0.019
Lead	0.009	0.004
Nickel	0.017	0.012
Fluoride	1.86	0.827
Molybdenum	0.158	0.070

(d) *Forging spent lubricants—Subpart G—PSNS.* There shall be no discharge of process wastewater pollutants.

(e) *Surface treatment spent baths.*

SUBPART G—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium surface treated	
Cadmium	0.006	0.002
Chromium	0.010	0.004
Copper	0.035	0.017
Lead	0.008	0.004
Nickel	0.015	0.010
Fluoride	1.62	0.718
Molybdenum	0.137	0.061

(f) *Surface treatment rinse.*

SUBPART G—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium surface treated	
Cadmium	0.068	0.027
Chromium	0.125	0.051
Copper	0.432	0.260
Lead	0.095	0.044
Nickel	0.186	0.125
Fluoride	20.1	8.90
Molybdenum	1.70	0.752

(g) *Wet air pollution control scrubber blowdown.*

SUBPART G—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium surface treated	
Cadmium	0.0007	0.0003
Chromium	0.001	0.0005
Copper	0.005	0.002
Lead	0.010	0.005
Nickel	0.002	0.001
Fluoride	0.208	0.092
Molybdenum	0.018	0.008

(h) *Sawing or grinding spent emulsions.*

SUBPART G—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium sawed or ground with emulsions	
Cadmium	0.001	0.0005
Chromium	0.002	0.0009
Copper	0.007	0.004
Lead	0.001	0.002
Nickel	0.003	0.002
Fluoride	0.338	0.150
Molybdenum	0.029	0.013

(i) *Sawing or grinding contact cooling water.*

SUBPART G—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium sawed or ground with contact cooling water	
Cadmium	0.033	0.013
Chromium	0.061	0.025
Copper	0.211	0.101
Lead	0.046	0.022
Nickel	0.091	0.061
Fluoride	9.82	4.36
Molybdenum	0.830	0.368

(j) *Sawing or grinding rinse.*

SUBPART G—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground uranium rinsed	
Cadmium	0.010	0.0004
Chromium	0.002	0.0007
Copper	0.006	0.003
Lead	0.002	0.0006
Nickel	0.003	
Fluoride	0.277	0.123
Molybdenum	0.024	0.011

(k) *Area cleaning rinse.*

SUBPART G—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium formed	
Cadmium	0.009	0.004
Chromium	0.016	0.007
Copper	0.055	0.026
Lead	0.012	0.006
Nickel	0.024	0.016
Fluoride	2.56	1.14
Molybdenum	0.216	0.096

(l) *Drum washwater.*

SUBPART G—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of uranium formed	
Cadmium	0.009	0.004
Chromium	0.017	0.007
Copper	0.057	0.027
Lead	0.013	0.006
Nickel	0.025	0.017
Fluoride	2.64	1.17
Molybdenum	0.223	0.099

(m) *Laundry washwater.*

SUBPART G—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/employee—day	
Cadmium	0.005	0.002
Chromium	0.010	0.004
Copper	0.034	0.011
Lead	0.008	0.004
Nickel	0.015	0.010
Fluoride	1.56	0.007
Molybdenum	0.130	0.059

(n) *Degreasing spent solvents—Subpart G—PSNS.* There shall be no discharge of process wastewater pollutants.

§ 471.76 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT) [Reserved].

Subpart H—Zinc Forming Subcategory

§ 471.80 Applicability; description of the zinc forming subcategory.

This subpart applies to discharges of pollutants to waters of the United States, and introductions of pollutants into publicly owned treatment works from the process operations of the zinc forming subcategory.

§ 471.81 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations for the process operations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

(a) *Rolling spent neat oils—Subpart H—BPT.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART H—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc rolled with emulsions	
Chromium	0.0006	0.0003
Copper	0.003	0.002
Cyanide	0.0004	0.002
Zinc	0.002	0.009
Oil and grease	0.028	0.017
TSS	0.057	0.027
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(c) *Rolling contact cooling water.*

SUBPART H—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc rolled with contact cooling water	
Chromium	0.236	0.0097
Copper	1.02	0.536
Cyanide	0.156	0.065
Zinc	0.783	0.327
Oil and grease	10.7	6.43
TSS	22.0	10.5
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(d) *Drawing spent emulsions.*

SUBPART H—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc drawn with emulsions	
Chromium	0.003	0.001
Copper	0.011	0.006
Cyanide	0.002	0.0007
Zinc	0.009	0.004
Oil and grease	0.116	0.070
TSS	0.238	0.113
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(e) *Direct chill casting contact cooling water.*

SUBPART H—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc cast by the direct chill method	
Chromium	0.222	0.091
Copper	0.960	0.505
Cyanide	0.147	0.061
Zinc	0.738	0.308
Oil and grease	10.1	6.06
TSS	20.7	9.85
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(f) *Stationary casting contact cooling water—Subpart H—BPT.* There shall be no discharge of process wastewater pollutants.

(g) *Heat treatment contact cooling water.*

SUBPART H—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc heat treated	
Chromium	0.336	0.138
Copper	1.45	0.763
Cyanide	0.221†	0.092
Zinc	1.12	0.466
Oil and grease	15.3	9.16
TSS	31.3	14.9
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(h) *Surface treatment spent baths.*

SUBPART H—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc surface treated	
Chromium	0.039	0.016
Copper	0.169	0.089
Cyanide	0.026	0.011
Zinc	0.130	0.054
Oil and grease	1.78	1.07
TSS	3.64	1.73
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(i) *Surface treatment rinse.*

SUBPART H—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc surface treated	
Chromium	1.58	0.645
Copper	6.80	3.58
Cyanide	1.04	0.430
Zinc	5.23	2.19
Oil and grease	71.6	43.0
TSS	147	69.8
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(j) *Alkaline cleaning spent baths.*

SUBPART H—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc alkaline cleaned	
Chromium	0.002	0.007
Copper	0.007	0.004
Cyanide	0.001	0.0004
Zinc	0.005	0.002
Oil and grease	0.071	0.043
TSS	0.146	0.069
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(k) *Alkaline cleaning rinse.*

SUBPART H—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc alkaline cleaned	
Chromium	0.744	0.304
Copper	3.21	1.69
Cyanide	0.490	0.203
Zinc	2.47	1.03
Oil and grease	33.8	20.3
TSS	69.3	33.0
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(l) *Sawing or grinding spent emulsions.*

SUBPART H—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc sawed or ground with emulsions	
Chromium	0.011	0.005
Copper	0.042	0.024
Cyanide	0.007	0.003
Zinc	0.035	0.015
Oil and grease	0.476	0.286
TSS	0.976	0.464
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(m) *Electrocoating rinse.*

SUBPART H—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc electrocoated	
Chromium	1.01	0.412
Copper	4.35	2.29
Cyanide	0.664	0.275
Zinc	3.35	1.40
Oil and grease	45.8	27.5
TSS	93.9	44.7
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(n) *Degreasing spent solvents—Subpart H—BPT.* There shall be no discharge of process wastewater pollutants.

§ 471.82 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(a) *Rolling spent neat oils—Subpart H—BAT.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART H—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc rolled with emulsions	
Chromium	0.0005	0.0002
Copper	0.002	0.0009
Cyanide	0.0003	0.0001
Zinc	0.002	0.0006

(c) *Rolling contact cooling water.*

SUBPART H—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc rolled with contact cooling water	
Chromium	0.020	0.009
Copper	0.069	0.033
Cyanide	0.011	0.004
Zinc	0.055	0.023

(d) *Drawing spent emulsions.*

SUBPART H—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc drawn with emulsions	
Chromium	0.002	0.0009
Copper	0.008	0.004
Cyanide	0.001	0.0005
Zinc	0.006	0.003

(e) *Direct chill casting contact cooling water.*

SUBPART H—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc cast by the direct chill method	
Chromium	0.019	0.008
Copper	0.065	0.031
Cyanide	0.010	0.004
Zinc	0.052	0.021

(f) *Stationary casting contact cooling water—Subpart H—BAT.* There shall be no discharge of process wastewater pollutants.

(g) *Heat treatment contact cooling water.*

SUBPART H—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc heat treated	
Chromium	0.029	0.012
Copper	0.098	0.047
Cyanide	0.016	0.006
Zinc	0.078	0.032

(h) *Surface treatment spent baths.*

SUBPART H—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc surface treated	
Chromium	0.033	0.014
Copper	0.001	0.054
Cyanide	0.018	0.007
Zinc	0.091	0.038

(i) *Surface treatment rinse.*

SUBPART H—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc surface treated	
Chromium	0.133	0.054
Copper	0.457	0.219
Cyanide	0.072	0.029
Zinc	0.365	0.151

(j) *Alkaline cleaning spent baths.*

SUBPART H—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc alkaline cleaned	
Chromium	0.002	0.0006
Copper	0.005	0.002
Cyanide	0.0007	0.0003
Zinc	0.004	0.002

(k) *Alkaline cleaning rinse.*

SUBPART H—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc alkaline cleaned	
Chromium	0.628	0.254
Copper	2.17	1.03
Cyanide	0.338	0.135
Zinc	1.73	0.710

(l) *Sawing or grinding spent emulsions.*

SUBPART H—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc sawed or ground with emulsions	
Chromium	0.009	0.004
Copper	0.031	0.015
Cyanide	0.005	0.002
Zinc	0.025	0.010

(m) *Electrocoating rinse.*

SUBPART H—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc electrocoated	
Chromium	0.085	0.035
Copper	0.293	0.140
Cyanide	0.046	0.019
Zinc	0.234	0.096

(n) *Degreasing spent solvents—Subpart H—BAT.* There shall be no discharge or process wastewater pollutants.

§ 471.83 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS):

(a) *Rolling spent neat oils—Subpart H—NSPS.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART H—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc rolled with emulsions	
Chromium	0.0005	0.0002
Copper	0.002	0.0009
Cyanide	0.0003	0.0001
Zinc	0.002	0.0006
Oil and grease	0.014	0.014
TSS	0.021	0.017
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(c) *Rolling contact cooling water.*

SUBPART H—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc rolled with contact cooling water	
Chromium	0.020	0.009
Copper	0.069	0.037
Cyanide	0.011	0.004
Zinc	0.055	0.023

SUBPART H—NSPS—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Oil and grease	0.536	0.536
TSS	0.804	0.643
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(d) *Drawing spent emulsions.*

SUBPART H—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc drawn with emulsions	
Chromium	0.002	0.009
Copper	0.008	0.004
Cyanide	0.001	0.0005
Zinc	0.006	0.003
Oil and grease	0.058	0.058
TSS	0.087	0.070
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times

(e) *Direct chill casting contact cooling water.*

SUBPART H—NSPS

Pollutant or pollutant property	Maximum for any one day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc cast by the direct chill method	
Chromium	0.019	0.008
Copper	0.065	0.031
Cyanide	0.010	0.004
Zinc	0.052	0.021
Oil and grease	0.505	0.505
TSS	0.758	0.606
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(f) *Stationary casting contact cooling water—Subpart H—NSPS.* There shall be no discharge of process wastewater pollutants.

(g) *Heat treatment contact cooling water.*

SUBPART H—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc heat treated	
Chromium	0.029	0.012
Copper	0.098	0.047
Cyanide	0.016	0.006
Zinc	0.078	0.032
Oil and grease	0.763	0.763
TSS	1.15	0.916
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(h) *Surface treatment spent baths.*

SUBPART H—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc surface treated	
Chromium	0.033	0.014
Copper	0.114	0.054
Cyanide	0.018	0.007
Zinc	0.091	0.038
Oil and grease	0.887	0.887
TSS	1.33	1.07
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(i) *Surface treatment rinse.*

SUBPART H—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc surface treated	
Chromium	0.133	0.054
Copper	0.459	0.219
Cyanide	0.072	0.029
Zinc	0.365	0.151
Oil and grease	3.58	3.58
TSS	5.37	4.30
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(j) *Alkaline cleaning spent baths.*

SUBPART H—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc alkaline cleaned	
Chromium	0.002	0.0006
Copper	0.005	0.002
Cyanide	0.0007	0.0003
Zinc	0.004	0.002
Oil and grease	0.036	0.036
TSS	0.054	0.043
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(k) *Alkaline cleaning rinse.*

SUBPART H—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc alkaline cleaned	
Chromium	0.626	0.259
Copper	2.17	1.03
Cyanide	0.338	0.135
Zinc	1.73	0.710
Oil and grease	16.9	16.9
TSS	23.4	20.3
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(l) *Sawing or grinding spent emulsions.*

SUBPART H—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc sawed or ground with emulsions	
Chromium	0.009	0.004
Copper	0.031	0.015
Cyanide	0.005	0.002
Zinc	0.025	0.010
Oil and grease	0.235	0.235
TSS	0.353	0.082
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(m) *Electrocoating rinse.*

SUBPART H—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc electrocoated	
Chromium	0.085	0.035
Copper	0.293	0.140
Cyanide	0.046	0.019
Zinc	0.234	0.096
Oil and grease	2.29	2.29
TSS	34.4	27.5
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(n) *Degreasing spent solvents—Subpart H—NSPS.* There shall be no discharge of process wastewater pollutants.

§ 471.84 Pretreatment standards for existing sources (PSES) [Reserved].

§ 471.85 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS). The mass of the wastewater introduced into a POTW shall not exceed the following values:

(a) *Rolling spent neat oils—Subpart H—PSNS.* There shall be no discharge of process wastewater pollutants.

(b) *Rolling spent emulsions.*

SUBPART H—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc rolled with emulsions	
Chromium	0.0005	0.0002
Copper	0.002	0.0009
Cyanide	0.0003	0.0001
Zinc	0.002	0.0006

(c) *Rolling contact cooling water.*

SUBPART H—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc rolled with contact cooling water	
Chromium	0.020	0.008
Copper	0.069	0.033
Cyanide	0.011	0.004
Zinc	0.055	0.023

(d) *Drawing spent emulsions.*

SUBPART H—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc drawn with emulsions	
Chromium	0.002	0.0009
Copper	0.008	0.004
Cyanide	0.001	0.0005
Zinc	0.006	0.003

(e) *Direct chill casting contact cooling water.*

SUBPART H—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc cast by the direct chill method	
Chromium	0.019	0.008
Copper	0.065	0.031
Cyanide	0.010	0.004
Zinc	0.052	0.021

(f) *Stationary casting contact cooling water—Subpart H—PSNS.* There shall be no discharge of process wastewater pollutants.

(g) *Heat treatment contact cooling water.*

SUBPART H—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc heat treated	
Chromium	0.029	0.012
Copper	0.098	0.047
Cyanide	0.016	0.006
Zinc	0.078	0.032

(h) *Surface treatment spent baths.*

SUBPART H—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc surface treated	
Chromium	0.033	0.014
Copper	0.001	0.054
Cyanide	0.018	0.007
Zinc	0.091	0.038

(i) *Surface treatment rinse.*

SUBPART H—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc surface treated	
Chromium	0.133	0.054
Copper	0.459	0.219
Cyanide	0.072	0.029
Zinc	0.365	0.151

(j) *Alkaline cleaning spent baths.*

SUBPART H—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc alkaline cleaned	
Chromium	0.002	0.0006
Copper	0.005	0.002
Cyanide	0.072	0.0003
Zinc	0.004	0.002

(k) *Alkaline cleaning rinse.*

SUBPART H—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc alkaline cleaned	
Chromium	0.626	0.254
Copper	2.17	1.03
Cyanide	0.338	0.134
Zinc	1.73	0.710

(l) *Sawing or grinding spent emulsions.*

SUBPART H—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc sawed or ground with emulsions	
Chromium	0.009	0.004
Copper	0.031	0.015
Cyanide	0.005	0.002
Zinc	0.025	0.010

(m) *Electrocoating rinse.*

SUBPART H—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zinc electrocoated	
Chromium	0.085	0.035
Copper	0.293	0.140
Cyanide	0.046	0.019
Zinc	0.234	0.096

(n) *Decreasing spent solvents—Subpart H—PSNS.* There shall be no discharge of process wastewater pollutants.

§ 471.86 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT) [Reserved].

Subpart I—Zirconium-Hafnium Forming Subcategory

§ 471.90 Applicability; description of the zirconium-hafnium forming subcategory.

This subpart applies to discharges of pollutants to waters of the United States, and introductions of pollutants into publicly owned treatment works from the process operations of the zirconium-hafnium forming subcategory

§ 471.91 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations for the process operations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

(a) *Rolling spent neat oils—Subpart I—BPT.* There shall be no discharge of process wastewater pollutants.

(b) *Drawing spent lubricants—Subpart I—BPT.* There shall be no discharge of process wastewater pollutants.

(c) *Extrusion spend emulsions—Subpart I—BPT.* There shall be no discharge of process wastewater pollutants.

(d) *Extrusion press hydraulic fluid leakage.*

SUBPART I—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium extruded	
Chromium	0.104	0.043
Cyanide	0.069	0.029
Nickel	0.455	0.301
Ammonia	31.6	13.9
Fluoride	14.1	6.26
Oil and grease	4.74	2.85
TSS	9.72	4.62
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(e) *Swaging spent neat oils—Subpart I—BPT.* There shall be no discharge of process wastewater pollutants.

(f) *Heat treatment contact cooling water.*

SUBPART I—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium heat treated	
Chromium	0.151	0.062
Cyanide	0.100	0.041
Nickel	0.659	0.436
Ammonia	45.7	20.1
Fluoride	20.4	9.06
Oil and grease	6.86	4.12
TSS	14.1	6.69
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(g) *Tube reducing spent lubricants—Subpart I—BPT.* There shall be no discharge of process wastewater pollutants.

(h) *Surface treatment spent baths.*

SUBPART I—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium surface treated	
Chromium	0.150	0.61
Cyanide	0.099	0.041
Nickel	0.653	0.432
Ammonia	45.3	20
Fluoride	20.3	8.98
Oil and grease	6.80	4.08
TSS	14	6.63
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(i) *Surface treatment rinse.*

SUBPART I—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium surface treated	
Chromium	3.91	1.60
Cyanide	2.58	1.07
Nickel	17.1	11.3
Ammonia	1,190	521
Fluoride	529	235
Oil and grease	178	107
TSS	364	173
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(j) *Alkaline cleaning spent baths.*

SUBPART I—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium alkaline cleaned	
Chromium	0.704	0.288
Cyanide	0.464	0.192
Nickel	3.07	2.03
Ammonia	214	93.8
Fluoride	95.2	42.3
Oil and grease	32	19.2
TSS	65.6	31.2
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(k) *Alkaline cleaning rinse.*

SUBPART I—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium alkaline cleaned	
Chromium	13.8	5.65
Cyanide	9.11	3.77
Nickel	60.3	39.9
Ammonia	4,190	1,840
Fluoride	1,070	829
Oil and grease	628	377
TSS	1,280	613
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(l) *Sawing or grinding spent emulsions.*

SUBPART I—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium sawed or ground with emulsions	
Chromium	0.124	0.051
Cyanide	0.082	0.034
Nickel	0.540	0.357
Ammonia	37.5	16.5
Fluoride	16.7	7.42
Oil and grease	5.62	3.37
TSS	11.5	5.48

SUBPART I—BPT—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(m) *Wet air pollution control scrubber blowdown—Subpart I—BPT.* There shall be no discharge of process wastewater pollutants.

(n) *Degreasing spent solvents—Subpart I—BPT.* There shall be no discharge of process wastewater pollutants.

(o) *Degreasing rinse—Subpart I—BPT.* There shall be no discharge or process wastewater pollutants.

(p) *Molten salt rinse.*

SUBPART I—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthy average
	mg/off-kg (pounds per million off pounds) of zirconium-hafnium treated with molten salt	
Chromium	3.33	1.360
Cyanide	2.20	0.907
Nickel	14.5	9.60
Ammonia	1,010	933
Fluoride	450	200
Oil and grease	151	90.7
TSS	310	148
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(q) *Sawing or grinding contact cooling water.*

SUBPART I—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium sawed or ground with contact cooling water	
Chromium	0.142	0.058
Cyanide	0.093	0.039
Nickel	0.617	0.408
Ammonia	42.8	18.3
Fluoride	19.1	8.48
Oil and grease	6.42	3.65
TSS	1.32	6.26
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(r) *Sawing on grinding rinse.*

SUBPART I—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground zirconium hafnium rinsed	
Chromium	0.792	0.324
Cyanide	0.522	0.216
Nickel	3.46	2.29

SUBPART I—BPT—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Ammonia	240	106
Fluoride	107	47.5
Oil and grease	36	21.6
TSS	73.8	35.1
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(s) *Sawing or grinding spent neat oils—Subpart I—BPT.* There shall be no discharge of process wastewater pollutants.

(t) *Inspection and testing wastewater.*

SUBPART I—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium tested	
Chromium	0.007	0.003
Cyanide	0.005	0.002
Nickel	0.030	0.020
Ammonia	2.06	0.903
Fluoride	0.917	0.407
Oil and grease	0.308	0.185
TSS	0.632	0.301
pH	(1)	(1)

[1] Within the range of 7.05 to 10.0 at all times.

§ 471.92 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(a) *Rolling spent neat oils—Subpart I—BAT.* There shall be no discharge of process wastewater pollutants.

(b) *Drawing spent lubricants—Subpart I—BAT.* There shall be no discharge of process wastewater pollutants.

(c) *Extrusion spent emulsions—Subpart I—BAT.* There shall be no discharge of process wastewater pollutants.

(d) *Extrusion press hydraulic fluid leakage.*

SUBPART I—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds of zirconium-hafnium extruded	
Chromium	0.104	0.043

SUBPART I—BAT—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Cyanide	0.069	0.029
Nickel	0.455	0.301
Ammonia	31.6	13.9
Fluoride	14.1	6.26

(e) *Swaging spent neat oils.*—There shall be no discharge of process wastewater pollutants.

(f) *Heat treatment contact cooling water.*

SUBPART I—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium heat treated	
Chromium	0.015	0.006
Cyanide	0.010	0.004
Nickel	0.066	0.044
Ammonia	4.57	2.01
Fluoride	2.04	0.906

(g) *Tube reducing spent lubricants.*—There shall be no discharge of process wastewater pollutants.

(h) *Surface treatment spent baths.*

SUBPART I—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium surface treated	
Chromium	0.150	0.061
Cyanide	0.099	0.041
Nickel	0.653	0.432
Ammonia	45.3	20
Fluoride	20.3	8.98

(i) *Surface treatment rinse.*

SUBPART I—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium surface treated	
Chromium	0.391	0.160
Cyanide	0.258	0.107
Nickel	1.71	1.13
Ammonia	119	52.1
Fluoride	52.9	23.5

(j) *Alkaline cleaning spent baths.*

SUBPART I—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium alkaline cleaned	
Chromium	0.704	0.288
Cyanide	0.464	0.192
Nickel	3.07	2.03
Ammonia	214	93.8
Fluoride	95.2	42.3

(k) *Alkaline cleaning rinse.*

SUBPART I—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium alkaline cleaned	
Chromium	1.380	0.565
Cyanide	0.911	3.377
Nickel	6.03	3.99
Ammonia	419	184
Fluoride	187	82.9

(l) *Sawing or grinding spent emulsions.*

SUBPART I—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium sawed or ground with emulsions	
Chromium	0.124	0.051
Cyanide	0.082	0.034
Nickel	0.540	0.357
Ammonia	37.5	16.5
Fluoride	16.7	7.42

(m) *Wet air pollution control scrubber blowdown—Subpart I—BAT.* There shall be no discharge of process wastewater pollutants.

(n) *Degreasing spent solvents—Subpart I—BAT.* There shall be no discharge of process wastewater pollutants.

(o) *Degreasing rinse—Subpart I—BAT.* There shall be no discharge of process wastewater pollutants.

(p) *Molten salt rinse.*

SUBPART I—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium treated with molten salt	
Chromium	0.333	0.136
Cyanide	0.220	0.091
Nickel	1.45	0.960
Ammonia	101	44.3

SUBPART I—BAT—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Fluoride	45.0	20.0

(q) *Sawing or grinding contact cooling water.*

SUBPART I—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium sawed or ground with contact cooling water	
Chromium	0.142	0.058
Cyanide	0.093	0.039
Nickel	0.617	0.408
Ammonia	42.8	18.8
Fluoride	19.1	8.48

(r) *Sawing or grinding rinse.*

SUBPART I—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground zirconium-hafnium rinsed	
Chromium	0.079	0.033
Cyanide	0.052	0.022
Nickel	0.346	0.229
Ammonia	24.0	10.6
Fluoride	10.7	4.75

(s) *Sawing or grinding spent neat oils—Subpart I—BAT.* There shall be no discharge of process wastewater pollutants.

(t) *Inspection and testing wastewater.*

SUBPART I—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium tested	
Chromium	0.007	0.003
Cyanide	0.005	0.002
Nickel	0.030	0.020
Ammonia	2.06	0.903
Fluoride	0.917	0.704

§ 471.93 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS). The mass of pollutant in the zirconium-hafnium process wastewater shall not exceed the following values:

(a) *Rolling spent neat oils—Subpart I—NSPS.* There shall be no discharge of process wastewater pollutants.

(b) *Drawing spent lubricants—Subpart I—NSPS.* There shall be no discharge of process wastewater pollutants.

(c) *Extrusion spent emulsions—Subpart I—NSPS.* There shall be no discharge of process wastewater pollutants.

(d) *Extrusion press hydraulic fluid leakage.*

SUBPART I—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium extruded	
Chromium	0.104	0.043
Cyanide	0.069	0.029
Nickel	0.455	0.301
Ammonia	31.6	13.9
Fluoride	14.1	6.26
Oil and grease	4.74	2.85
TSS	9.72	4.62
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(e) *Swaging spent neat oils—Subpart I—NSPS.* There shall be no discharge of process wastewater pollutants.

(f) *Heat treatment contact cooling water.*

SUBPART I—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium heat treated	
Chromium	0.015	0.006
Cyanide	0.010	0.004
Nickel	0.066	0.044
Ammonia	4.57	2.01
Fluoride	2.04	0.906
Oil and grease	0.686	0.412
TSS	1.41	0.669
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(g) *Tube reducing spent lubricants—Subpart I—NSPS.* There shall be no discharge of process wastewater pollutants.

(h) *Surface treatment spent baths.*

SUBPART I—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium surface treated	
Chromium	0.150	0.061
Cyanide	0.099	0.041
Nickel	0.653	0.432
Ammonia	45.3	20.0
Fluoride	20.0	8.98
Oil and grease	6.80	4.08
TSS	14.0	6.63
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(i) *Surface treatment rinse.*

SUBPART I—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium surface treated	
Chromium	0.391	0.160
Cyanide	0.25	0.107
Nickel	1.71	1.13
Ammonia	119	52.1
Fluoride	52.9	23.5
Oil and grease	17.8	10.7
TSS	36.4	17.3
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(j) *Alkaline cleaning spent baths.*

SUBPART I—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium alkaline cleaned	
Chromium	0.704	0.288
Cyanide	0.464	0.192
Nickel	3.07	2.03
Ammonia	214	93.8
Fluoride	95.2	42.3
Oil and grease	32.0	19.2
TSS	65.6	31.2
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times

(k) *Alkaline cleaning rinse.*

SUBPART I—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium alkaline cleaned	
Chromium	1.38	0.565
Cyanide	0.911	0.377
Nickel	6.03	3.99
Ammonia	4.9	184
Fluoride	187	82.9
Oil and grease	62.8	37.7
TSS	129	61.3
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(l) *Sawing or grinding spent emulsions.*

SUBPART I—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium sawed or ground with emulsions	
Chromium	0.124	0.051
Cyanide	0.082	0.034
Nickel	0.540	0.357
Ammonia	37.5	16.50
Fluoride	16.7	7.42

SUBPART I—NSPS—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Oil and grease	5.62	3.37
TSS	11.5	5.48
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(m) *Wet air pollution control scrubber blowdown—Subpart I—NSPS.* There shall be no discharge of process wastewater pollutants.

(n) *Degreasing spent solvents—Subpart I—NSPS.* There shall be no discharge of process wastewater pollutants.

(o) *Degreasing rinse—Subpart I—NSPS.* There shall be no discharge of process wastewater pollutants

(p) *Molten salt rinse.*

SUBPART I—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium treated with molten salt	
Chromium	0.333	0.136
Cyanide	0.220	0.091
Nickel	0.002	0.960
Ammonia	101	44.3
Fluoride	45.0	20.0
Oil and grease	15.1	9.07
TSS	31.0	14.8
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(q) *Sawing or grinding contact cooling water.*

SUBPART I—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium sawed or ground with contact cooling water	
Chromium	0.142	0.058
Cyanide	0.093	0.039
Nickel	0.617	0.408
Ammonia	42.8	18.8
Fluoride	19.1	8.48
Oil and grease	6.42	3.85
TSS	13.2	6.26
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(r) *Sawing or grinding rinse.*

SUBPART I—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground zirconium-hafnium rinsed	
Chromium	0.079	0.033

SUBPART I—NSPS—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Cyanide	0.052	0.022
Nickel	0.346	0.229
Ammonia	24.0	10.6
Fluoride	10.7	4.75
Oil and Grease	3.60	2.16
TSS	7.38	3.51
pH	(1)	(1)

[1] Within range of 7.5 to 10.0 at all times.

(s) *Sawing or grinding spent neat oils—Subpart I—NSPS.* There shall be no discharge or process wastewater pollutants.

(t) *Inspection and testing wastewater.*

SUBPART I—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium tested	
Chromium	0.007	0.003
Cyanide	0.005	0.002
Nickel	0.030	0.020
Ammonia	2.06	0.903
Fluoride	0.917	0.407
Oil and grease	0.308	0.185
TSS	0.632	0.301
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

§ 471.94 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and by August 23, 1988 achieve the following pretreatment standards for existing sources (PSES). The mass of wastewater pollutants in zirconium-hafnium forming process wastewater introduced into a POTW shall not exceed the following values:

(a) *Rolling spent neat oils—Subpart I—PSES.* There shall be no discharge of process wastewater pollutants.

(b) *Drawing spent lubricants—Subpart I—PSES.* There shall be no discharge of process wastewater pollutants.

(c) *Extrusion spent emulsion—Subpart I—PSES.* There shall be no discharge of process wastewater pollutants.

(d) *Extrusion press hydraulic fluid leakage.*

SUBPART I—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium extruded	
Chromium	0.104	0.043
Cyanide	0.069	0.029
Nickel	0.455	0.301
Ammonia	31.6	13.9
Fluoride	41.1	6.26

(e) *Swaging spent neat oils—Subpart I—PSES.* There shall be no discharge of process wastewater pollutants.

(f) *Heat treatment contact cooling water.*

SUBPART I—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium heat treated	
Chromium	0.015	0.006
Cyanide	0.010	0.004
Nickel	0.066	0.044
Ammonia	4.57	2.01
Fluoride	2.04	0.906

(g) *Tube reducing spent lubricants—Subpart I—PSES.* There shall be no discharge of process wastewater pollutants.

(h) *Surface treatment spent baths.*

SUBPART I—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium surface treated	
Chromium	0.150	0.061
Cyanide	0.099	0.041
Nickel	0.653	0.432
Ammonia	45.3	20.0
Fluoride	20.0	8.98

(i) *Surface treatment rinse.*

SUBPART I—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium surface treated	
Chromium	0.391	0.160
Cyanide	0.258	0.107
Nickel	1.71	1.13
Ammonia	119	52.1
Fluoride	52.9	23.5

(j) *Alkaline cleaning spent baths.*

SUBPART I—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium alkaline cleaned	
Chromium	0.704	0.288
Cyanide	0.464	0.192
Nickel	3.07	2.03
Ammonia	214	93.8
Fluoride	95.2	42.3

(k) *Alkaline cleaning rinse.*

SUBPART I—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium alkaline cleaned	
Chromium	1.38	0.565
Cyanide	0.911	0.377
Nickel	6.03	3.99
Ammonia	419	184
Fluoride	187	82.9

(l) *Sawing or grinding spent emulsions.*

SUBPART I—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium sawed or ground with emulsions	
Chromium	0.124	0.051
Cyanide	0.082	0.034
Nickel	0.540	0.357
Ammonia	37.5	16.50
Fluoride	16.7	7.42

(m) *Wet air pollution control scrubber blowdown—Subpart I—PSES.* There shall be no discharge or process wastewater pollutants.

(n) *Degreasing spent solvents—Subpart I—PSES.* There shall be no discharge of process wastewater pollutants.

(o) *Degreasing rinse—Subpart I—PSES.* There shall be no discharge of process wastewater pollutants.

(p) *Molten salt rinse.*

SUBPART I—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium treated with molten salt	
Chromium	0.333	0.136
Cyanide	0.220	0.091
Nickel	1.45	0.960
Ammonia	101	44.3

SUBPART I—PSES—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Fluoride	45	20

(q) *Sawing or grinding contact cooling water.*

SUBPART I—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium sawed or ground with contact cooling water	
Chromium	0.142	0.058
Cyanide	0.093	0.039
Nickel	0.617	0.408
Ammonia	42.8	18.8
Fluoride	19.1	8.48

(r) *Sawing or grinding rinse.*

SUBPART I—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground zirconium-hafnium rinsed	
Chromium	0.079	0.033
Cyanide	0.052	0.022
Nickel	0.346	0.229
Ammonia	24	10.6
Fluoride	10.7	4.75

(s) *Sawing or grinding spent neat oils—Subpart I—PSES.* There shall be no discharge of process wastewater pollutants.

(t) *Inspection and testing wastewater.*

SUBPART I—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium tested	
Chromium	0.007	0.003
Cyanide	0.005	0.002
Nickel	0.030	0.020
Ammonia	2.06	0.903
Fluoride	0.917	0.407

§ 471.95 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS). The mass of wastewater shall not exceed the following:

(a) *Rolling spent neat oils—Subpart I—PSNS.* There shall be no discharge of process wastewater pollutants.

(b) *Drawing spent lubricants—Subpart I—PSNS.* There shall be no discharge of process wastewater pollutants.

(c) *Extrusion spent emulsions—Subpart I—PSNS.* There shall be no discharge of process wastewater pollutants.

(d) *Extrusion press hydraulic fluid leakage.*

SUBPART I—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium extruded	
Chromium	0.104	0.043
Cyanide	0.069	0.029
Nickel	0.455	0.301
Ammonia	31.6	13.9
Fluoride	41.1	6.26

(e) *Swaging spent neat oils—Subpart I—PSNS.* There shall be no discharge of process wastewater pollutants.

(f) *Heat treatment contact cooling water.*

SUBPART I—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off/kg (pounds per million off-pounds) of zirconium-hafnium heat treated	
Chromium	0.015	0.006
Cyanide	0.010	0.004
Nickel	0.066	0.044
Ammonia	4.57	2.01
Fluoride	2.04	0.906

(g) *Tube reducing spent lubricants—Subpart I—PSNS.* There shall be no discharge of process wastewater pollutants.

(h) *Surface treatment spent baths.*

SUBPART I—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off/kg (pounds per million off-pounds) of zirconium-hafnium surface treated	
Chromium	0.150	0.061
Cyanide	0.099	0.041
Nickel	0.653	0.432
Ammonia	45.3	20
Fluoride	20	8.98

(i) *Surface treatment rinse.*

SUBPART I—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off/kg (pounds per million off-pounds) of zirconium-hafnium surface treated	
Chromium	0.391	0.160
Cyanide	0.258	0.107
Nickel	1.71	1.13
Ammonia	119	52.1
Fluoride	52.9	23.5

(j) *Alkaline cleaning spent baths.*

SUBPART I—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off/kg (pounds per million off-pounds) of zirconium-hafnium alkaline cleaned	
Chromium	0.704	0.288
Cyanide	0.464	0.192
Nickel	3.07	2.03
Ammonia	214	93.8
Fluoride	95.2	42.3

(k) *Alkaline cleaning rinse.*

SUBPART I—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium alkaline cleaned	
Chromium	1.38	0.565
Cyanide	0.911	0.377
Nickel	6.03	3.99
Ammonia	419	184
Fluoride	187	82.9

(l) *Sawing or grinding spent emulsions.*

SUBPART I—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium sawed or ground with emulsions	
Chromium	0.124	0.051
Cyanide	0.082	0.034
Nickel	0.540	0.357
Ammonia	37.5	16.50
Fluoride	16.7	7.42

(m) *Wet air pollution control scrubber blowdown—Subpart I—PSNS.* There shall be no discharge of process wastewater pollutants.

(n) *Degreasing spent solvents—Subpart I—PSNS.* There shall be no discharge of process wastewater pollutants.

(o) *Degreasing rinse—Subpart I—PSNS.* There shall be no discharge of process wastewater pollutants.

(p) *Molten salt rinse.*

SUBPART I—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium rinsed following molten salt treatment	
Chromium	0.333	0.136
Cyanide	0.220	0.091
Nickel	1.45	0.960
Ammonia	101	44.3
Fluoride	45.0	20.0

(q) *Sawing or grinding contact cooling water.*

SUBPART I—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium sawed or ground with contact cooling water	
Chromium	0.142	0.058
Cyanide	0.093	0.039
Nickel	0.617	0.408
Ammonia	42.8	18.8
Fluoride	19.1	8.48

(r) *Sawing or grinding rinse.*

SUBPART I—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground zirconium-hafnium rinsed	
Chromium	0.079	0.033
Cyanide	0.052	0.022
Nickel	0.346	0.229
Ammonia	24.0	10.6
Fluoride	10.7	4.75

(s) *Sawing or grinding spent neat oils—Subpart I—PSNS.* There shall be no discharge of process wastewater pollutants.

(t) *Inspection and testing wastewater.*

SUBPART I—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of zirconium-hafnium tested	
Chromium	0.007	0.003
Cyanide	0.005	0.002
Nickel	0.030	0.020
Ammonia	2.06	0.903
Fluoride	0.917	0.407

§ 471.96 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT) [Reserved].

Subpart J—Metals Powders Subcategory

§ 471.100 Applicability; description of the powder metals subcategory.

This subpart applies to discharges of pollutants to waters of the United States, and introductions of pollutants into publicly owned treatment works from the process operations of the metal powders subcategory.

§ 471.101 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations for the process operations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

(a) *Metal powder production atomization wastewater.*

SUBPART J—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder wet atomized	
Copper	9.58	5.04
Cyanide	1.46	0.605
Lead	2.12	1.01
Oil and grease	101	60.5
TSS	207	98.3
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(b) *Sizing spent emulsion.*

SUBPART J—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder sized	
Copper	0.028	0.015
Cyanide	0.004	0.002
Lead	0.006	0.003
Oil and grease	0.292	0.175
TSS	0.599	0.285
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(c) *Oil-resin impregnation wastewater—Subpart J—BPT.* There shall be no discharge of process wastewater pollutants.

(d) *Steam treatment wet air pollution control scrubber blowdown.*

SUBPART J—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of power metallurgy parts steam treated	
Copper	1.51	0.792
Cyanide	0.230	0.095
Lead	0.333	0.159
Oil and grease	15.9	9.51
TSS	32.5	15.5
pH	(1)	(1)

(1) Within the range of 7.5 to 10.0 at all times.

(e) *Tumbling, burnishing and cleaning wastewater.*

SUBPART J—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder metallurgy parts tumbled, burnished, or cleaned	
Copper	8.36	4.40
Cyanide	1.28	0.528
Lead	1.65	0.880
Oil and grease	88.0	52.800
TSS	181	85.8
pH	(1)	(1)

(1) Within the range of 7.5 to 10.0 at all times.

(f) *Sawing or grinding spent neat oils.—Subpart J—BPT.* There shall be no discharge of process wastewater pollutants.

(g) *Sawing or grinding spent emulsion.*

SUBPART J—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder metallurgy parts sawed or ground with emulsion	
Copper	0.035	0.018
Cyanide	0.005	0.002
Lead	0.008	0.004
Oil and grease	0.362	0.217
TSS	0.742	0.353
pH	(1)	(1)

(1) Within the range of 7.5 to 10.0 at all times.

(h) *Sawing or grinding contact cooling water.*

SUBPART J—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder metallurgy parts sawed or ground with contact cooling	
Copper	3.08	1.62
Cyanide	0.470	0.195
Lead	0.681	0.324
Oil and grease	32.4	19.5
TSS	66.4	31.6
pH	(1)	(1)

(1) Within the range of 7.5 to 10.0 at all times.

(i) *Hot pressing contact cooling water.*

SUBPART J—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder cooled after pressing	
Copper	16.7	8.80
Cyanide	2.55	1.06
Lead	3.70	1.76
Oil and grease	176	106
TSS	361	172
pH	(1)	(1)

(1) Within the range of 7.5 to 10.0 at all times.

(j) *Mixing wet air pollution control scrubber blowdown.*

SUBPART J—BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder mixed	
Copper	15.0	7.90
Cyanide	2.29	0.948
Lead	3.32	1.58
Oil and grease	158	94.8
TSS	324	15.4
pH	(1)	(1)

(1) Within the range of 7.5 to 10.0 at all times.

(k) *Degreasing spent solvents.—Subpart J—BPT.* There shall be no discharge of process wastewater pollutants.

§ 471.102 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(a) *Metal powder production atomization wastewater.*

SUBPART J—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder wet atomized	
Copper	9.58	5.04
Cyanide	1.46	0.605
Lead	2.12	1.01

(b) *Sizing spent emulsions.*

SUBPART J—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder sized	
Copper	0.028	0.015
Cyanide	0.004	0.002
Lead	0.006	0.003

(c) *Oil-resin impregnation wastewater—Subpart J—BAT.* There shall be no discharge of process wastewater pollutants.

(d) *Steam treatment wet air pollution control scrubber blowdown.*

SUBPART J—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder metallurgy parts steam treated	
Copper	1.51	0.792
Cyanide	0.230	0.095
Lead	0.333	0.159

(e) *Tumbling, burnishing and cleaning wastewater.*

SUBPART J—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder metallurgy parts tumbled, burnished, or cleaned	
Copper	8360	4400
Cyanide	1280	528
Lead	1650	880

(f) *Sawing or grinding spent neat oils. Subpart J—BAT.* There shall be no discharge of process wastewater pollutants.

(g) *Sawing or grinding spent emulsions.*

SUBPART J—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder metallurgy parts sawed or ground with emulsions	
Copper	34.4	18.1
Cyanide	5.25	2.17
Lead	7.60	3.62

(h) *Sawing or grinding contact cooling water.*

SUBPART J—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder sawed or ground with contact cooling	
Copper	3.08	1.62
Cyanide	0.470	0.195
Lead	0.681	0.324

(i) *Hot pressing contact cooling water.*

SUBPART J—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder cooled after pressing	
Copper	16.7	8.80
Cyanide	2.55	1.06
Lead	3.70	1.760

(j) *Mixing wet air pollution control scrubber blowdown.*

SUBPART J—BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder mixed	
Copper	1.50	7.90
Cyanide	2.29	0.948
Lead	3.32	1.58

(k) *Degreasing spent solvents—Subpart J—BAT.* There shall be no discharge of process wastewater pollutants.

§ 471.103 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS). The mass of pollutants in the metal powder process wastewater shall not exceed the following values:

(a) *Metal powder production atomization wastewater.*

SUBPART J—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder wet atomized	
Copper	9.58	5.04
Cyanide	1.46	0.605
Lead	2.12	1.01
Oil and grease	101	60.5
TSS	207	98.3
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(b) *Sizing spent emulsions.*

SUBPART J—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder sized	
Copper	0.028	0.015
Cyanide	0.004	0.002
Lead	0.006	0.003
Oil and grease	0.292	0.175
TSS	0.599	0.285
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(c) *Oil-resin impregnation wastewater.—Subpart J—NSPS.* There shall be no discharge of process wastewater pollutants.

(d) *Steam treatment wet air pollution control scrubber blowdwn.*

SUBPART J—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder metallurgy parts steam treated	
Copper	1.51	0.792
Cyanide	0.230	0.095
Lead	0.333	0.159
Oil and grease	15.9	9.51
TSS	32.5	15.5
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(e) *Tumbling, burnishing and cleaning wastewater.*

SUBPART J—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder metallurgy parts tumbled, burnished, or cleaned	
Copper	8.36	4.40
Cyanide	1.28	0.528
Lead	1.85	0.880
Oil and grease	88.0	52.8

SUBPART J—NSPS—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
TSS	181	85.8
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(f) *Sawing or grinding spent neat oils.—Subpart J—NSPS.* There shall be no discharge of process wastewater pollutants.

(g) *Sawing or grinding spent emulsions.*

SUBPART J—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder metallurgy parts sawed or ground with emulsions	
Copper	0.035	0.010
Cyanide	0.005	0.002
Lead	0.008	0.004
Oil and grease	0.362	0.217
TSS	0.742	0.353
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(h) *Sawing or grinding contact cooling water.*

SUBPART J—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder sawed or ground with contact cooling water	
Copper	3.08	1.62
Cyanide	0.470	0.195
Lead	0.681	0.324
Oil and grease	32.4	19.5
TSS	66.4	31.6
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(i) *Hot pressing contact cooling water.*

SUBPART J—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder cooled after pressing	
Copper	16.7	8.80
Cyanide	2.55	1.06
Lead	3.70	1.76
Oil and grease	176	106
TSS	361	172
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(j) *Mixing wet air pollution control scrubber blowdown.*

SUBPART J—NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder mixed	
Copper	15.0	7.90
Cyanide	2.29	0.948
Lead	3.32	1.58
Oil and grease	158	94.8
TSS	324	15.4
pH	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

(k) *Degreasing spent solvents.—Subpart J—NSPS.* There shall be no discharge of process wastewater pollutants.

§ 471.104 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and by August 23, 1988 achieve the following pretreatment standards for existing sources (PSES). The mass of wastewater pollutants in metal powders process wastewater introduced into a POTW shall not exceed the following values:

(a) *Metal powder production atomization wastewater.*

SUBPART J—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder wet atomized	
Copper	9.58	5.040
Cyanide	1.46	0.605
Lead	2.12	1.01

(b) *Sizing spent emulsions.*

SUBPART J—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder sized	
Copper	0.028	0.015
Cyanide	0.004	0.002
Lead	0.008	0.003

(c) *Oil-resin impregnation wastewater.—Subpart J—PSES.*

(d) *Steam treatment wet air pollution control scrubber blowdown.*

SUBPART J—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder metallurgy part steam treated	
Copper	1.51	0.792
Cyanide	0.230	0.095
Lead	0.333	0.150

(e) *Tumbling, burnishing and cleaning wastewater.*

SUBPART J—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder metallurgy parts tumbled, burnished, or cleaned	
Copper	8.36	4.40
Cyanide	1.28	0.528
Lead	1.85	0.880

(f) *Sawing or grinding spent neat oils.—Subpart J—PSES.* There shall be no discharge of process watewater pollutants.

(g) *Sawing or grinding spent emulsions.*

SUBPART J—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder metallurgy parts sawed or ground with emulsions	
Copper	0.035	0.018
Cyanide	0.005	0.002
Lead	0.008	0.004

(h) *Sawing or grinding contact cooling water.*

SUBPART J—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder sawed or ground with contact cooling water	
Copper	3.08	1.62
Cyanide	0.470	0.195
Lead	0.681	0.324

(i) *Hot pressing contact cooling water.*

SUBPART J—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder cooled after pressing	
Copper	16.7	8.80
Cyanide	2.55	1.06
Lead	3.70	1.76

(j) *Mixing wet air pollution control scrubber blowdown.*

SUBPART J—PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder mixed	
Copper	1.50	7.90
Cyanide	2.29	0.948
Lead	3.32	1.58

(k) *Degreasing spent solvents—Subpart J—PSES.* There shall be no discharge of process wastewater pollutants.

§ 471.105 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subject which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources. The mass of wastewater pollutants in metal powders process wastewater introduced into a POTW shall not exceed the following values:

(a) *Metal powder production atomization wastewater.*

SUBPART J—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder wet atomized	
Copper	9.53	5.04
Cyanide	1.46	0.605
Lead	2.12	1.01

(b) *Sizing spent emulsions.*

SUBPART J—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder sized	
Copper	0.028	0.015
Cyanide	0.004	0.002

SUBPART J—PSNS—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Lead	0.006	0.003

(c) *Oil-resin impregnation wastewater—Subpart J—PSNS.* There shall be no discharge of process wastewater pollutants.

(d) *Steam treatment wet air pollution control scrubber blowdown.*

SUBPART J—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder metallurgy parts steam treated	
Copper	1.51	0.792
Cyanide	0.230	0.095
Lead	0.333	0.159

(e) *Tumbling, burnishing and cleaning wastewater.*

SUBPART J—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder metallurgy parts tumbled, burnished, or cleaned	
Copper	8.36	4.40
Cyanide	1.28	0.528
Lead	1.85	0.880

(f) *Sawing or grinding spent neat oils—Subpart J—PSNS.* There shall be no discharge of process wastewater pollutants.

(g) *Sawing or grinding spent emulsions.*

SUBPART J—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of sawed or ground with emulsions	
Copper	0.035	0.018
Cyanide	0.005	0.002

SUBPART J—PSNS—Continued

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Lead	0.008	0.004

(h) *Sawing or grinding contact cooling water.*

SUBPART J—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder sawed or ground with contact cooling water	
Copper	3.08	1.620
Cyanide	0.470	0.195
Lead	0.681	0.324

(i) *Hot pressing contact cooling water.*

SUBPART J—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder cooled after pressing	
Copper	16.7	8.80
Cyanide	2.55	1.06
Lead	3.70	1.70

(j) *Mixing wet air pollution control scrubber blowdown.*

SUBPART J—PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (pounds per million off-pounds) of powder mixed	
Copper	1.50	7.90
Cyanide	2.29	0.948
Lead	3.32	1.58

(k) *Degreasing spent solvents—Subpart J—PSNS.* There shall be no discharge of process wastewater pollutants.

§ 471.106 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT) [Reserved].

PART 468—COPPER FORMING POINT SOURCE CATEGORY

For the reasons stated above, EPA is amending 40 CFR Part 468 as follows:

1. The authority citation for Part 468 continues to read as follows:

Authority: Sections 301, 304 (b), (c), (e) and (g), 306 (b) and (c), 307 (b) and (c), 308 and 501, Clean Water Act (Federal Water Pollution Control Act Amendments of 1972, as amended by the Clean Water Act of 1977) (the "Act"); 33 U.S.C. 1311, 1314 (b), (c), (e) and (g), 1316 (b) and (c), 1317 (b) and (c), 1318 and 1361; 86 Stat. 816, Pub. L. 92-500; 91 Stat. 1567, Pub. L. 95-217.

2. 40 CFR 468.01 is revised to read as follows:

§ 468.01 Applicability.

The provisions of this subpart are applicable to discharges resulting from the manufacture of formed copper and copper alloy products. The forming operations covered are hot rolling, cold rolling, drawing, extrusion, and forging. This part does not regulate the forming of precious metals. (See 40 CFR Part 471.) The casting of copper and copper alloys is not covered by this part. (See 40 CFR Part 451.)

3. 40 CFR 468.02 is amended by adding a new paragraph (x) to read as follows. The introductory text of the section is shown for the convenience of the reader and remains unchanged.

§ 468.02 Specialized definitions.

In addition to the definitions set forth in 40 CFR Part 401 and the chemical analysis methods in 40 CFR Part 136, the following definitions apply to this part:

* * * * *

(x) The term "precious metals" shall mean gold, platinum, palladium and silver and their alloys. Any alloy containing 30 or greater percent by weight of precious metals is considered a precious metal.

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