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Title: **Modernizing Ignitable Liquids Determinations**

Action: **Final Rulemaking**

Docket No.: **EPA-HQ-OLEM-2018-0830**

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6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 63, 260, 261, 266 and 278

[EPA-HQ-OLEM-2018-0830; FRL-10006-71-OLEM]

RIN 2050-AG93

Modernizing Ignitable Liquids Determinations

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final Rule

SUMMARY: EPA is finalizing updates to the regulations for the identification of ignitable hazardous waste under the Resource Conservation and Recovery Act (RCRA) and to modernize the RCRA test methods that currently require the use of mercury thermometers. These revisions provide greater clarity to hazardous waste identification, provide flexibility in testing requirements, improve environmental compliance, and, thereby, enhance protection of human health and the environment.

DATES: This final rule is effective on [INSERT DATE 60 DAYS AFTER PUBLICATION IN THE *FEDERAL REGISTER*]. The incorporation by reference of certain publications listed in the rule is approved by the Director of the Federal Register as of [INSERT DATE 60 DAYS AFTER PUBLICATION IN THE *FEDERAL REGISTER*].

ADDRESSES: The docket for this action, identified by docket identification (ID) number EPA-HQ-OLEM-2018-0830, is available at *https://www.regulations.gov* or at the Office of Land & Emergency Management Docket (OLEM Docket), Environmental Protection Agency Docket Center (EPA/DC), West William Jefferson Clinton Bldg., Rm.

3334, 1301 Constitution Ave. NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the OLEM Docket is (202) 566-0270. Please review the visitor instructions and additional information about the docket available at *https://www.epa.gov/dockets*.

FOR FURTHER INFORMATION CONTACT: Daniel Fagnant, Materials Recovery and Waste Management Division, Office of Resource Conservation and Recovery (5304P), Environmental Protection Agency, 1200 Pennsylvania Avenue, N.W., Washington, DC 20460; telephone number 703-308-0319; email address: *fagnant.daniel@epa.gov*; or Melissa Kaps, Materials Recovery and Waste Management Division, Office of Resource Conservation and Recovery (5304P), Environmental Protection Agency, 1200 Pennsylvania Avenue, N.W., Washington, DC 20460; telephone number 703-308-6787; email address: *kaps.melissa@epa.gov*.

SUPPLEMENTARY INFORMATION:

Table of Contents

The information presented in this preamble is organized as follows:

I. General information

A. Does this action apply to me?

You may be potentially affected by this action if you conduct testing activities to determine the ignitability characteristics of certain wastes and/or use SW-846 air sampling and stack emissions Methods 0010, 0011, 0020, 0023A, or 0051. The following list of North American Industrial Classification System (NAICS) codes is not intended to be exhaustive, but rather provides a guide to help readers determine whether this document applies to them. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the **FOR FURTHER INFORMATION CONTACT** section. Potentially affected entities may include:

- Other Electric Power Generation (NAICS code 221118).

• Petroleum Refineries (NAICS code 324110).

• Engineering Services (NAICS code 541330).

• Testing Laboratories (NAICS code 541380).

• Environmental Consulting Services (NAICS code 541620).

• Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology) (NAICS code 541712).

• All Other Support Services (NAICS code 561990).

• Hazardous Waste Treatment and Disposal (NAICS code 562211).

B. What action is EPA taking?

First, EPA is updating the test methods required for measuring the flash point of a liquid waste when determining if that waste is an ignitable hazardous waste (*i.e.,* SW-846 Method 1010A (Pensky-Martens) or Method 1020B (Setaflash)) under 40 CFR 261.21. Second, EPA is codifying existing guidance regarding the definition of aqueous for purposes of 40 CFR 261.21(a)(1). Third, EPA is updating cross references to Department of Transportation (DOT) regulations and also making certain other conforming amendments and technical corrections. Finally, EPA is adding mercury thermometer alternatives in the air sampling and stack emissions test methods in *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846); specifically, Methods 0010, 0011, 0020, 0023A, and 0051.

C. What is EPA's authority for taking this action?

The authority for this rule can be found in sections 1002, 1006, 2002, 3001-3009, 3013, and 3017 of the Solid Waste Disposal Act (SWDA) of 1970, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, as amended by the

Hazardous and Solid Waste Amendments of 1984 (HSWA), 42 U.S.C. 6901, 6905, 6912, 6921-6929, 6934, and 6938; sections 101 *et seq*. of the Clean Air Act, as amended, 42 U.S.C. 7401 *et seq*.

D. What are the incremental costs and benefits of this action?

EPA prepared an economic analysis of the potential costs and benefits associated with this action. The *Regulatory Impact Analysis of the Modernization of Ignitable Liquid Determinations Rule* is available in the docket. The final rule will modify SW-846 test methods while also retaining the current procedures to provide entities increased flexibility. For the purpose of the analysis, EPA assumes that every facility that currently conducts flash point testing: (1) is compliant with the current test methods, (2) will use the updated test methods if cost effective, and (3) will continue to conduct flash point testing.

The universe of facilities affected by the updates to the ignitability test methods and SW-846 air sampling and stack emissions test methods includes: (1) commercial laboratories, (2) EPA laboratories, and (3) state laboratories. EPA identified 217 unique commercial laboratories that conduct ignitability testing under either Method 1010A or 1020. EPA identified an additional 18 commercial laboratories accredited to conduct any of the air sampling and stack emissions test methods that would be updated under rule, for a total of 235 commercial labs affected by the rule. These 235 total laboratories are part of 177 unique firms, including several large commercial laboratories with multiple locations. EPA estimates that the total number of laboratories, including 20 state and nine federal laboratories, potentially affected by this rule is 264.

The economic analysis indicates that the rule is projected to result in annualized cost savings of about $78,500 to $477,000 (based on a discount rate of seven percent). The net present value of costs over 20 years is estimated to be a cost savings of $832,000 to $5 million (seven percent discount rate). EPA's analysis shows qualitative benefits to human health and the environment through the reduced use of mercury thermometers. EPA does not expect the other parts of this action to affect any entity because they do not create new requirements or change existing requirements.

II. Background

A. What is a hazardous waste?

Subtitle C of RCRA and its implementing regulations establish a cradle-to-grave regulatory management scheme for certain solid wastes that qualify as hazardous wastes. Any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material is a "solid waste" under RCRA section 1004(27) (42 U.S.C. 6903(27)). EPA has further defined the term "solid waste" for purposes of its RCRA hazardous waste regulations (40 CFR 261.2). To be considered a hazardous waste, a material first must be classified as a solid waste. Generators of solid waste must determine whether their wastes are hazardous wastes (40 CFR 262.11). A solid waste is a hazardous waste if it exhibits characteristics of ignitability, corrosivity, reactivity, or toxicity (40 CFR 261.20 through 261.24), or is a listed waste (40 CFR 261.30 through 261.33). Listed wastes include wastes from non-specific sources, such as spent solvents; residuals such as by-products and sludges from specific industries; and discarded, unused commercial chemical products.

B. What is the hazardous waste characteristic of ignitability?

Under 40 CFR 261.21, the characteristic of ignitability identifies solid waste as hazardous based on the properties of the waste that give it the potential to cause harm to human health or the environment through direct or indirect fire hazard, including contributing to or causing landfill fires. Waste that is identified as hazardous pursuant to 40 CFR 261.21 has the EPA Hazardous Waste Number of D001. Ignitable hazardous waste (D001) is regulated to minimize its opportunity to cause or contribute to fires during routine waste management activities. Solid wastes that are regulated as ignitable hazardous waste include: 1) certain liquids with flash points less than 60 °C (140 °F); 2) non-liquid substances that are capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture, or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that they create a hazard; 3) ignitable compressed gases; and 4) oxidizers.

C. What is the regulatory history of the ignitability characteristic?

The ignitability characteristic was originally proposed in 1978 (43 FR 58945, December 18, 1978) with an objective of identifying wastes that present a fire hazard due to being ignitable under routine waste disposal and storage conditions. The ignitability characteristic was finalized in 1980 when EPA promulgated the first phase of regulations under Subtitle C of RCRA to protect human health and the environment from the improper management of hazardous waste (45 FR 33066, May 19, 1980). These regulations included 40 CFR part 261, which defined hazardous waste including the ignitability characteristic and incorporated two ASTM International ("ASTM") voluntary consensus standards by reference as the required flash point tests for ignitable liquid

hazardous waste determinations: ASTM D93-79 (Pensky-Martens) and ASTM D3278-78 (Setaflash). In a 1981 revision, EPA revised SW-846 Method 1010 to allow the use of D93-79 or D93-80 (46 FR 35246, July 7, 1981).

ASTM standards D3278-78, D93-79, and D93-80 were the test methods available for flash point testing at the time of the 1980 and 1981 rulemakings. Since that time, ASTM has updated D93 and D3278 multiple times to improve the standards and incorporate new technology.[1] EPA previously proposed to update the flash point test methods for ignitability in the 2002 proposed Methods Innovation Rule by replacing ASTM standard D3278-78 with D3278-96 and ASTM standards D93-79 and D93-80 with D93-99c (67 FR 66252, Oct 30, 2002). In that proposed rule, EPA also requested comment on whether D93-00 should instead replace D93-79 and D93-80. The public commenters raised concerns that the sampling procedures of the proposed versions of D93 may lead to a loss of flammable volatile constituents from a sample due to greater headspace in the sampling container. The Agency made the decision to not revise flash point testing when the Methods Innovation Rule was finalized in 2005 (70 FR 34550, June 14, 2005), agreeing with public comments that EPA further study the changes in flash point testing standards.

EPA later issued a final rule to correct the ignitability characteristic at 40 CFR 261 by replacing obsolete references to DOT regulations related to definitions of ignitable compressed gases and oxidizers (71 FR 40254, July 14, 2006). That final rule

[1] The Agency notes that while ASTM standards are subject to review and revision (a process that occurs every five years) because the regulation incorporates by reference the year-specific version of an ASTM standard, the version in the regulation remains in effect until changed by an EPA action. See 84 FR 12539 for more information about the use of method-defined parameters.

amended the regulation by revising paragraphs (a)(3) and (a)(4) of §261.21 and adding notes 1 through 4 to the end of that section. No change was made to §261.21(a)(1).

D. Summary of the proposed rule

On April 2, 2019, EPA published a proposed rule to modernize standards for ignitable liquids determinations (84 FR 12539). EPA proposed to update the flash point test methods for the determination of characteristically ignitable hazardous waste along with other minor changes. EPA proposed to update required test methods that refer to outdated standards developed by ASTM and that require instrumentation that is no longer readily commercially available. For example, the standards require the use of mercury thermometers, which are becoming more difficult to acquire and calibrate due to their use and availability being phased out for environmental, health, and safety concerns. EPA also proposed to remove the requirements for mercury thermometers in the SW-846 air sampling and stack emissions test methods. In addition, EPA proposed to codify existing guidance regarding the regulatory exclusion in the ignitability characteristic for aqueous liquids containing alcohols and proposed to codify existing sampling guidance regarding waste mixtures having multiple phases when determining whether a waste exhibits the ignitability characteristic. Finally, EPA proposed to update cross references to DOT regulations, to remove obsolete information, and make certain technical corrections. The specific amendments and corrections proposed by EPA are summarized below.

1. Flash point test methods. EPA proposed to revise 40 CFR 261.21 to incorporate by reference ASTM standard D8175-18 as an alternative to ASTM standards D93-79 and D93-80 in Method 1010B (Pensky-Martens test method) (84 FR 12539, April 2, 2019).

EPA similarly proposed to revise 40 CFR 261.21 to incorporate by reference the ASTM standard D8174-18 as an alternative to ASTM standard D3278-78 in Method 1020C (Setaflash test method). The Agency also proposed to retain the ASTM standards D93-79, D93-80, and D3278-78 within Methods 1010B and 1020C. The Agency proposed that the original ASTM standards and the new ASTM standards referenced in Methods 1010 and 1020 are all technically acceptable for determinations of flash point for ignitable liquids. Therefore, a generator or laboratory may choose to use any of the ASTM standards listed in Methods 1010B and 1020C, which are being finalized today. The Agency anticipates that domestic and international efforts to reduce mercury usage, the environmental benefits of removing mercury from the workplace, and the economic benefits from reduced testing costs will result in generators and laboratories adopting the new test methods over time. The Agency also solicited comments from the public on whether it would be more appropriate to remove the older ASTM standards from the test methods at this time due to their required use of mercury thermometers.

2. Air sampling and stack emissions requiring mercury thermometers. EPA proposed to update the SW-846 air sampling and stack emissions test methods that presently require the use of mercury thermometers. These test methods are Methods 0010, 0011, 0020, 0023A, and 0051. The proposed rule provided users of these test methods the flexibility to use alternative temperature-measuring devices, while still allowing the use of mercury thermometers. Many of these air sampling and stack emissions test methods are modifications of, or are similar to, EPA Method 5 of Appendix A-3 of 40 CFR 60, Determination of Particulate Matter Emissions from Stationary Sources. For Method 5, EPA issued the proposed rule "Revisions to Test

Methods and Testing Regulations at (77 FR 1130, January 9, 2012), and later finalized the rule at (79 FR 11228, February 27, 2014) for the use of alternative mercury-free thermometers if the thermometers are, at a minimum, equivalent in terms of performance or are suitably effective for the specific temperature measurement application. EPA proposed to add similar language, where appropriate, in SW-846 Methods 0010, 0011, 0020, 0023A, and 0051. The removal of the requirement to use mercury thermometers does not change the underlying technology of the test methods and is not expected to affect the precision or accuracy of the test methods. Therefore, in accordance with the SW-846 methods policy statement, the test method numbers and letters EPA uses to identify test methods, including subsequent versions, are not being revised due to these changes.[2]

3. Aqueous alcohol exclusion. EPA proposed to revise the aqueous alcohol exclusion in 40 CFR 261.21(a)(1) by codifying existing guidance into the regulatory text to clarify the exclusion's scope. As stated in the proposed rule, EPA proposed to change the text of the exclusion from "other than an aqueous solution containing less than 24 percent alcohol by volume" to "other than a solution containing less than 24 percent of any alcohol or combination of alcohols (except if the alcohol has been used for its solvent properties and is one of the alcohols specified in EPA Hazardous Waste No. F003 or F005) by volume and at least 50 percent water by weight." Specifically, EPA proposed the following revisions to the exclusion: 1) replace the undefined term "aqueous" with "at least 50 percent water by weight" and 2) clarify that "alcohol" meant "any alcohol or

[2] See *https://www.epa.gov/hw-sw846/policy-statement-about-test-methods-evaluating-solid-waste-physicalchemical-methods*.

combination of alcohols" except for alcohol that had "been used for its solvent properties and is one of the alcohols specified in EPA Hazardous Waste No. F003 or F005." These two proposed revisions to the current regulatory text for the aqueous alcohol exclusion are contained in existing EPA guidance published in the EPA Monthly Hotline Report, EPA530-R-92-014g (July 1992), pages 3-4. The Hotline Report states for the purpose of the ignitability characteristic in 40 CFR 261.21(a)(1), "aqueous" means a solution containing at least 50 percent water by weight. and that the term "alcohol" in 40 CFR 261.21(a)(1) refers to any alcohol or combination of alcohols. EPA also explained in the Hotline Report that, if the alcohol is one of those alcohols specified in EPA hazardous waste codes F001-F005 and has been used for its solvent properties, the waste must be evaluated to determine if it should be classified as an F-listed spent solvent waste." (55 FR 22543, June 1, 1990.)

In the proposed rule, EPA also asked for input on whether any additional revisions should be made to the aqueous alcohol exclusion in 40 CFR 261.21(a)(1) to limit the exclusion to its original intent. EPA suggested the following possible revisions to the exclusion: explicitly identifying specific waste streams, narrowing the types of alcohol that would qualify, adding a minimum alcohol content, and raising the minimum water content for aqueous alcohol solutions. Also, EPA noted that any revisions made to the aqueous alcohol exclusion in 40 CFR 261.21(a)(1) would have no effect on the applicability of the discharge prohibitions presented in the Agency's Clean Water Act (CWA) national pretreatment standards for existing and new sources of pollution (40 CFR 403.5). Section 403.5(b)(1) of the discharge prohibitions addresses waste streams with a closed cup flash point of less than 140 degrees Fahrenheit or 60 degrees

Centigrade using the test methods specified in 40 CFR 261.21 and provides no exemption for aqueous alcohol solutions (55 FR 30082, July 24, 1990). The Agency's rationale for not exempting aqueous alcohol solutions under the CWA discharge prohibitions is explained in the final rule entitled "EPA Administered Permit Programs; the National Pollutant Discharge Elimination System; General Pretreatment Regulations for Existing and New Sources; Regulations To Enhance Control of Toxic Pollutant and Hazardous Waste Discharges to Publicly Owned Treatment Works" (55 FR 30082, July 24, 1990). Thus, EPA's proposed revisions to the aqueous alcohol exclusion in 40 CFR 261.21(a)(1) would not change its inapplicability to 40 CFR 403.5(b)(1).

4. Sampling multiple phase wastes. EPA proposed to codify its existing sampling guidance for multiphase wastes tested for ignitability in 40 CFR 261.21(a). EPA's proposed codification sought to put into regulatory text its existing policy on how to properly test multiphase wastes containing liquid(s) with or without solids for ignitability determinations. EPA's long-standing sampling guidance applies at initial generation and during the course of normal management of a waste. The Agency's existing guidance explains that a generator or laboratory (i.e., those conducting the analysis) should separate multiphase waste samples into all of their different solid and/or liquid phases for individual evaluation, to the extent practicable. Each separated phase should be evaluated individually in accordance with 40 CFR 261.21(a) to determine whether that phase exhibits the characteristic of ignitability. The Agency's existing guidance further explains that the multiphase waste should be tested for flash point as a whole if the individual phases cannot be separated without an appreciable loss of volatiles such that the ignitability test results may be affected.

In the proposed rule, EPA also requested comment on whether language should be added to Chapter 7 of SW-846 as guidance regarding the use of the pressure filtration technique specified in Method 1311 for assessing the presence of an ignitable liquid for wastes that do not yield a free liquid phase using Method 9095 (i.e., Paint Filter Liquids Test or PFLT).

5. Technical corrections.

a. Definition of ignitable compressed gas. The Agency also proposed corrections to the ignitable compressed gas definitions in 40 CFR 261.21(a)(3)(ii). EPA proposed to revise 40 CFR 261.21(a)(3)(ii)(A) to specify the ASTM standard E 681-85 as the approved test for determining whether any waste that is a compressed gas exhibits the RCRA ignitability characteristic, and to remove reference to the Bureau of Explosives as an approving agency for sampling and test methods. Consistent with the current DOT regulations (49 CFR 173.115), EPA also proposed to correct its own regulations that reference identifying the agency responsible for approving other tests as equivalent for this purpose, by adding the phrase "approved by the Associate Administrator, Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation." to 40 CFR 261.21(a)(3)(ii).

EPA also proposed to revise 40 CFR 261.21(a)(3)(ii)(B)-(D) to align with the existing DOT regulations for flammable gases. The Agency proposed to update the definition of ignitable compressed gas within 40 CFR 261.21(a)(3)(ii)(B)-(D), by removing references to Bureau of Explosives test methods and mirroring the definition and testing that DOT now requires. This change would allow generators to determine if their waste meets the definition of an ignitable compressed gas by determining if it meets

the definition of a Division 2.1 flammable gas or a flammable aerosol (see 49 CFR 173.115(a) and (l)).

b. Cross-reference to DOT explosives. EPA proposed revising 40 CFR 261.21(a)(4)(i)(A) to replace the currently referenced "Class A explosive or a Class B explosive" with "Division 1.1, 1.2, or 1.3 explosive" to be consistent with DOT's revised classification system for explosives (55 FR 52402, December 21, 1990). In 2010, EPA incorporated into the RCRA hazardous waste regulations DOT's changes to its classification system for explosives (75 FR 12989, March 18, 2010). However, that rulemaking overlooked the reference to Class A and Class B explosives in 40 CFR 261.21(a)(4)(i)(A). This proposed change corrects that inadvertent omission by updating 40 CFR § 261.21(a)(4)(i)(A) with the correct references.

c. Deletion of notes. EPA also proposed to delete the four notes at the end of 40 CFR 261.21, which are outdated or unnecessary to understanding the regulation. For example, the Bureau of Explosives will no longer be the source for the test methods identified in 40 CFR 261.21(a)(3)(ii)(B)-(D), which makes Note 1 outdated. Notes 2 and 3 provide unnecessary historical information explaining that the Office of Hazardous Materials Technology (OHMT) and the Research and Special Programs Administration (RSPA), respectively, ceased operations on February 20, 2005 due to a DOT reorganization, and their programs were moved to the Pipeline and Hazardous Materials Safety Administration (PHMSA) in the DOT. Finally, Note 4, which provides the source of the definition of an oxidizer in 40 CFR 261.21(a)(4), may now be confusing because it references a DOT regulation as it existed in 1980 rather than its current form.

III. Discussion of the final rule and public comments

A. Flash point test methods

1. Summary of the public comments. The majority of public comments supported the Agency's proposal to add ASTM standards D8174-18 and D8175-18 to 40 CFR 261.21 as new, additional test methods options for flash point testing of ignitable liquids. Several public commenters requested that the Agency also continue to allow use of the currently required ASTM standards in the test methods. Some public commenters also asked the Agency to clarify whether results from any of the required flash point tests giving a nonhazardous determination for flash point are conclusive if test results from another flash point test would determine the waste to be hazardous. Commenters presented concerns that if conflicting test results are possible for a waste, then the public would be required to use all five ASTM standards referenced in the test methods for a waste determination.

2. Provisions in the final rule. The Agency is finalizing the proposed language in 40 CFR 261.21 that updates Methods 1010A and 1020B to include ASTM standards D8175-18 and D8174-18, respectively. This regulation will retain the three previously required flash point ASTM standards as part of a hazardous waste determination for ignitable liquids. The regulated community can continue to use the existing test methods or begin using the new flash point ASTM standards referenced in Methods 1010B and 1020C. Updates to cross-referenced language in 40 CFR 260.11 and Appendix IX of 40 CFR part 261 are also being finalized in this action.

3. Response to comments on waste determinations with conflicting flash point test results. The Agency clarifies that generators are not required to use all of the ASTM standards specified in EPA Methods 1010B and 1020C when making a hazardous waste

determination on a specific waste, and this remains unchanged under this rulemaking. The generator is responsible for making an accurate hazardous waste determination using testing or knowledge of the waste (40 CFR 262.11). If a generator does not have adequate knowledge to complete a hazardous waste identification and must test their waste, the generator should use the test method most appropriate for their waste based on knowledge of the waste. The ASTM standards referenced within EPA Methods 1010B and 1020C have similar precision and accuracy values. In many cases, use of any of the required test methods will be appropriate for a hazardous waste determination. The Agency expects that differences in test method results are more likely to occur due to uniquely challenging waste forms, differences in sampling or laboratory practices, or operator experience than with use of the different test methods. The Agency will revisit the required test methods if it is found that inconsistent results occur for specific wastes.

In some cases, the generator may be able to readily determine one test method is more appropriate. In the event that a generator of a waste does determine that multiple test methods would provide contrasting waste identifications, the generator should select and rely upon the test method that more accurately characterizes the hazards of the waste instead of selecting all of the test methods. If a generator suspects their waste presents unique challenges in identification through flash point testing, they may benefit from consulting with their authorized state program to avoid excessive testing.

B. Mercury thermometer requirements in air sampling and stack emissions methods

1. Summary of the public comments. Public commenters supported the Agency's proposal to remove mercury thermometer requirements from the air sampling and stack emissions test methods. One commenter provided input that this change improves worker

safety and reduces costs by avoiding potential mercury spills and cleanup. A second commenter indicated that replacement of mercury thermometers is already ongoing with similar test methods, such as Method 5. A third commenter supported leaving the flexibility to use either mercury or non-mercury thermometers so that the transition to non-mercury thermometers can occur over time with normal equipment replacement.

2. Provisions in the final rule. The Agency is finalizing the proposed changes to Methods 0010, 0011, 0020, 0023A and 0051 and the proposed language incorporating these test methods by reference in 40 CFR 260.11 and 40 CFR part 261 Appendix IX, Tables 1 and 2 as proposed and discussed above. The changes will allow the use of non-mercury thermometers or mercury thermometers in these particular test methods, providing flexibility.

C. Technical corrections to 40 CFR 261.21

1. Summary of the public comments. The Agency received several comments of broad support for these regulatory changes and no comments opposing these changes.

2. Provisions in the final rule. The Agency is finalizing the proposed changes to 40 CFR 261.21(a)(3) and 40 CFR 261.21(a)(4) and deleting the four notes at the end of 40 CFR 261.21 as proposed.

D. Revised definition of aqueous and comments on the aqueous alcohol exclusion

1. Summary of the public comments. Public comments on the Agency's proposed revisions to the aqueous alcohol exclusion supported some revisions while opposing others. The majority of commenters agreed with and supported the Agency's proposal to define "aqueous" within 40 CFR 261.21(a)(1) as "at least 50 percent weight by water." No commenters specifically addressed replacing the term alcohol in 40 CFR 261.21(a)(1)

with the phrase "any alcohol or combination of alcohols" language; however, many commenters opposed the Agency's proposed revision to insert the statement, "(except if the alcohol has been used for its solvent properties and is one of the alcohols specified in EPA Hazardous Waste No. F003 or F005)." Public commenters expressed concerns that the proposed language created a new exception to the aqueous alcohol exclusion, describing several interpretations of the revised text that differ from the Agency's intended interpretation of the proposed regulatory language.[3] Commenters suggested that one interpretation of the proposed regulation was as a new exception to the exclusion that would bring into regulation F003 spent solvents that are otherwise excluded from the ignitability characteristic as an aqueous alcohol.

Commenters also suggested a second interpretation could be a narrowing of the definition of "alcohol" within the aqueous alcohol exclusion to no longer include alcohols in the F003 and F005 listing descriptions. A related concern was whether an alcohol used for its solvent purposes is the same as a spent solvent and whether existing guidance on the scope of the spent solvent listings applied to both. An additional concern within this second interpretation involved cases where multiple alcohols were contained in the aqueous alcohol exclusion and whether the waste would be excluded if one alcohol met the F003 or F005 listing description while a second did not. Public commenters also stated that the Agency had provided little to no rationale for narrowing the aqueous alcohol exclusion in the proposed rule.

[3] See comments from The American Fuel & Petrochemical Manufacturers, The Retail Association, The American Chemistry Council, and Stericylce, Inc. EPA-HQ-OLEM-830-0178, -0175, and -0176.

The public also commented on other potential changes to the aqueous alcohol exclusion.[4] One commenter suggested that the Agency should revisit excluded aqueous alcohols that contain a small concentration of ignitable alcohol and a large concentration of an ignitable non-alcohol component. The commenter referred to the original justification for the aqueous alcohol exclusion and suggested adding qualifiers to the regulation consistent with the intended scope of the regulation. It was suggested that the exclusion should not apply if the flash point of less than 60°C (140°F) is attributable solely to the non-alcohol component. A commenter also submitted data indicating ethanol and water mixtures will not flash below 4% ethanol. Commenters also suggested that EPA should implement a sustained combustion test to either exclude more waste from regulation or add the test as a condition to meet for exclusion as an aqueous alcohol. Another comment suggested that any liquid could be excluded if the liquid did not sustain combustion and met criteria similar to Department of Transportation (DOT) flammability requirements in 49 CFR 173.120(a)(3). Other commenters suggested EPA should propose more specific changes and allow for public comment before making any other changes to the aqueous alcohol exclusion other than the replacement of aqueous with "at least 50 percent water by weight."

2. Provisions in the final rule. The Agency is finalizing the revision to define aqueous as "at least 50 percent water by weight" but is not finalizing any other changes to the aqueous alcohol exclusion, including the other proposed changes to the exclusion. The regulatory change that is being finalized is specific to the term aqueous within 40

[4] See comments from the Retail Association, Maryland Department of the Environment, Setricycle. Inc., and The Environmental Technology Council. EPA-HQ-OLEM-2018-0830-0175, -0166, and -0170.

CFR 261.21. Other RCRA regulations that also use the term aqueous are unaffected by this final rule. EPA is not finalizing the proposed changes to the definition of alcohol in the alcohol exclusion because those changes did not provide clarification as EPA intended, as indicated by the comments.

3. Response to comments that EPA is narrowing the exclusion. In proposing to amend 40 CFR 261.21(a)(1) to include the language "except if the alcohol has been used for its solvent properties and is one of the alcohols specified in EPA Hazardous Waste No. F003 or F005," the Agency had intended to clarify that generators are still responsible to consider relevant listing descriptions when making a hazardous waste determination on waste managed under the aqueous alcohol exclusion. In particular, the Agency considered it most likely that F003 or F005 wastes would most commonly share a waste code with ignitable aqueous alcohols. It is not EPA's intent to narrow the aqueous alcohol waste exclusion.

Even though EPA is not finalizing the language "except if the alcohol has been used for its solvent properties and is one of the alcohols specified in EPA Hazardous Waste No. F003 or F005," the Agency notes that generators of aqueous alcohol-excluded waste are still responsible for verifying that their waste does not meet a listing description or exhibit other characteristics as part of the regulations for generators of hazardous waste (e.g., requirements under 40 CFR 262.11). Some commenters suggested that the Agency's proposed language conflicted with application of 40 CFR 261.3(g). Specifically, a commenter raised concern that ignitable wastes meeting the F003 listing and meeting the exclusion for aqueous alcohols would have to be managed as F003

despite being a decharacterized waste at the point of generation.[5] The Agency's proposed language was not intended to revise the regulations in 40 CFR 261.3(g) to limit applicability of F003 or F005 wastes. The Agency clarified in the final rule implementing 40 CFR 261.3(g) that in the case of wastes listed solely for ignitability, corrosivity, and reactivity that do not exhibit a characteristic at the point of generation, these wastes are considered to never have been hazardous and are not subject to 40 CFR part 268. A waste that would otherwise be listed for F003 but is excluded at the point of generation due to being an aqueous alcohol would not be considered ignitable hazardous waste. Wastes that are characteristic at the point of generation and then are subsequently decharacterized are still subject to LDR requirements (66 FR 27266, May 16, 2001).

With this proposed language, EPA had intended to clarify the regulation. The public comments have instead suggested additional interpretations and raised additional questions regarding the definition of alcohol and the application of the mixture and derived from rule to the proposed language. As a result, the Agency is not finalizing this specific part of the proposed language.

4. Response to comments that other changes may be warranted. The Agency requested comments on whether additional changes to the aqueous alcohol exclusion may be warranted. One potential change suggested by commenters was for the Agency to consider a lower limit on alcohol concentrations eligible for exclusion. These comments are supported by the rationale and supporting data that aqueous alcohols in a low enough concentration will not flash below 60°C due to the alcoholic component alone.[6] The

[5] See comments by the American Chemical Council. EPA-HQ-OLEM-0830-0166.
[6] See comments from the Maryland Department of the Environment. EPA-HQ-OLEM-2018-0830-0169.

Agency agrees with the commenter that at very low concentrations of alcohol, an aqueous alcohol will not flash due to the alcohol alone. Implementing a lower limit to the aqueous alcohol exclusion may work for simple wastes that only have two chemical components but presents a challenge when any number of combinations of alcohols and wastes are considered. Setting a lower limit for each and every alcohol and their combinations would require further study by the Agency.

Commenters also suggested implementation of a sustained combustion test for the aqueous alcohol exclusion. The Agency does not currently require this by regulation. However, the Agency notes that the public is already capable of utilizing existing tests for sustained combustion as part of their generator knowledge of the waste. A generator making a waste determination using knowledge should be confident that their determination would agree with testing requirements under 261.21(a) if tested. Generators can also manage their waste in a more stringent manner.

Additionally, commenters suggested that the aqueous alcohol exclusion should be modified to be more consistent with the original intent of the exclusion, which was beverage alcohols and latex paints that do not sustain combustion. The alcohol exclusion in 261.21(a)(1) was originally an incorporation of the aqueous alcohol exclusion already present in DOT regulations. Since 1980, the DOT has updated their regulations while EPA has issued guidance on its own exclusion. The DOT exclusion for aqueous alcohols does not apply if another hazardous material is present.[7] In some cases, the definition of an aqueous alcohol in the DOT regulations may be narrower than the definition of an

[7] See Summary of DOT Exemption of Alcoholic Beverages and Aqueous Solutions of Alcohol. EPA-HQ-OLEM-2018-0830-0163.

aqueous alcohol in EPA's regulation that was intended to mirror the DOT definition. A waste managed under the EPA defined aqueous alcohol exclusion may bear other hazardous waste codes that would not be excluded from ignitability and must be appropriately managed when other hazardous materials are present. Alternatively, wastes that meet EPA's definition of an aqueous alcohol under 40 CFR 261.21 but have additional requirements for packaging and handling in order to be made ready for transportation may support more stringent management. The Agency also notes that authorized state programs may be more stringent or broader in scope on these determinations.

Other commenters suggested that if the Agency were to modify the aqueous alcohol exclusion beyond the specific language proposed in this rulemaking, then the Agency should first propose those changes and provide another opportunity for the public to further comment. The suggested changes by the public warrant further consideration due to their scientific and technical merits. The aqueous alcohol exclusion has applicability to a broad category of wastes and changes to the definition of alcohol, the concentration of alcohol, or implementation of testing requirements could result in unintended impacts to the scope of the exclusion.

The Agency needs to further consider the scope and impacts of the potential changes discussed in this section and is also interested in the experience of authorized state programs that may be implementing the exclusion in a different manner. Therefore, the Agency is not making any changes at this time as a result of these comments. The Agency agrees with the commenters that any other changes beyond EPA's specific proposed language would warrant further discussion and public input, and therefore is not

finalizing any other changes based on comments at this time, including replacing "alcohol" with "any alcohol or combination of alcohols" in the regulatory text. Other than finalizing EPA's proposed language of "at least 50 percent water by weight," the Agency intends to seek additional public input before finalizing any other changes to the alcohol exclusions suggested by the public in this rulemaking.

The Agency maintains that it is ultimately the responsibility of the waste generator to make an accurate hazardous waste determination. The flash point test method results of less than 60°C (140°F) are definitive results for a waste determination. A generator must determine whether their waste is eligible to be excluded from ignitability as an aqueous alcohol. When making a determination for eligibility as an aqueous alcohol, a generator should consider the regulatory language itself as well as guidance that the agency has provided in the past. The Agency has provided guidance in preamble to allow for a broad range of alcohols to be eligible for exemption as an aqueous alcohol (55 FR 22520, June 1, 1990). The Agency has also stated through guidance that a solution of seventy seven percent water, thirteen percent alcohol, and ten percent non-alcoholic liquid component is eligible for exemption.[8]

A generator must determine whether their waste is an aqueous alcohol for the purpose of the aqueous alcohol exclusion based on testing or knowledge of the waste and its properties (see 40 CFR 262.11). The Agency's existing guidances on waste analysis

[8] See July 1992 RCRA/Superfund/OUST/EPCRA Monthly Hotline Report. EPA-HQ-OLEM-2018-0830-0037.

and sampling may be helpful to generators in their waste determinations.[9] The Agency believes a good indicator for a generator that their waste is eligible for exclusion as an aqueous alcohol is if their waste is similar in nature to a beverage alcohol or to an aqueous latex paint. The more a generator's waste diverges from being comparable to a beverage alcohol or latex paint, the more carefully a generator should consider whether the waste stream is eligible for exclusion. For example, in cases where the aqueous liquid waste contains almost no alcohol, EPA does not generally consider that waste to be an aqueous alcohol. If a generator is unsure whether their specific waste is eligible for exclusion as an aqueous alcohol, they should consult with their appropriate regulatory agency to discuss the specific nature of their waste. Additionally, state programs authorized to implement RCRA may be broader in scope or more stringent in implementation of ignitable liquids and aqueous alcohol wastes excluded from ignitability.

E. Sampling of multiple phase wastes

1. Summary of the public comments. The Agency's proposal to codify existing guidance on sampling multiple phase wastes received mixed comments, with some commenters supporting and others opposing the proposal. One commenter stated support for separating phases before analyzing as laboratories already appear to be following this procedure. Another commenter stated that separating phases is appropriate and that doing otherwise would provide inconsistent results. However, that commenter stated that the

[9]Waste Analysis at Facilities that Generate, Treat, Store and Dispose of Hazardous Wastes – Final, EPA 530-R-12-001, April 2015.
RCRA Waste Sampling Draft Technical Guidance, EPA 530-D-02-002, August 2002.

Agency needs to provide sufficient guidance on how to determine if a waste contains multiple phases and is therefore subject to analysis of both phases. The commenter stated, "It is not clear how much separation must occur in a waste for it to be considered "multi-phase," and whether the waste must be capable of achieving such separation on its own, without additional processes. Wastes such as stable emulsions, or small amounts of liquids contained within a solid would not likely separate on their own through normal management practices and handling time."[10]

Other commenters opposed the proposal to require sampling of each phase of a multiple phase waste, insisting that EPA's proposed approach is too rigid and current guidance allows for more flexibility in sampling. The comments stated, "For example, the Agency's guidance merely suggests these actions for particular types of mixtures, not all existing and possible mixtures. EPA's proposal presumes that since guidance has suggested both phases be separated and tested separately under some circumstances, that a requirement to do so for all mixtures would be more beneficial and would comport with all existing and future scientific standards."[11] A second commenter expressed similar concerns that the Agency proposal should not be interpreted as requiring all phases to be tested and provided examples of wastes that were identifiable by analysis of a single phase or through knowledge of the waste and identified practical limitations of testing certain wastes.[12] A third commenter suggested alternative regulatory language for

[10] See comments from the American Petroleum Institute. EPA-HQ-OLEM-2018-0830-0168.
[11] See comments from the American Chemistry Council. EPA-HQ-OLEM-2081-0839-0166.
[12] See comments from the Environmental Technology Council. EPA-HQ-OLEM-2018-0830-0170.

multiple phase mixtures and asked the Agency to clarify in the preamble that all three sampling approaches listed in SW-846 Chapter 2 (Section 2.3.1.5) are allowed. The commenter expressed concern that the proposed regulatory language and the Agency preamble language were less flexible than existing Agency guidance.[13]

One commenter expressed concern that the proposal was not clear on whether a multiple phase waste is the same as mixtures of solid and hazardous waste under the hazardous waste "mixture rule" in 40 CFR 261.3(a)(2)(iv). The commenter also raised concern that the preamble indicated that 40 CFR 261.21 only applied to wastes that separate on their own and did not apply to wastes that *can be* separated by the generator, for example, by filtration. The comment also raised concerns that the proposal brought into regulation discarded manufactured articles (e.g., a few drops of lubricating liquid in a small mechanical device) that are primarily non-ignitable solids containing small amounts of ignitable liquids. The commenter stated that these discarded manufactured articles do not meet the EPA definition of a liquid for ignitable liquids (e.g., through analysis with the Paint Filter Liquids Test.)[14]

An additional concern from the public questioned whether the alcohol exclusion as written in 40 CFR 261.21(a)(1) was included within the proposed regulatory language of 261.21(a)(5). That is, the regulatory language of 261.21(a)(5) referenced flash point

[13] See comments from the Coalition for Responsible Waste Incineration. EPA-HQ-OLEM-2018-0830-0172.
[14] See comments from the Retail Association. EPA-HQ-OLEM-2018-0830-0175.

requirements from 261.21(a)(1) but did not clarify whether the aqueous alcohol exclusion applied.[15]

2. Provisions in the final rule. After consideration of the public comments, EPA is not finalizing the proposed language for 40 CFR §261.21(a)(5) as part of today's final action because it created more confusion, which was the opposite of the Agency's intent. The Agency agrees that some of the issues described by commenters may not be clearly addressed in the specific regulatory text proposed for multiple phase sampling. Therefore, the Agency is instead reiterating and clarifying in preamble the existing Agency guidance for hazardous waste determinations of ignitable liquids with multiple phases.

A generator of a waste should consider the individual liquid phases of a multiple phase waste under the criteria in 40 CFR §261.21(a)(1) and non-liquid phases of a multiple phase waste under the criteria of 40 CFR §261.21(a)(2) when those liquid or solid phases are representative samples of the waste as a whole. A "representative sample" is defined by regulation (40 CFR 260.10) as "a sample of a universe or whole (e.g., waste pile, lagoon, ground water) which can be expected to exhibit the average properties of the universe or whole."

When determining whether a waste contains multiple phases, the generator should consider the waste's physical properties during its likely management. For example, if a waste is generated as one phase but based on the generator's knowledge of the waste is likely to separate from one to two or more liquid phases during management (e.g., while stored or during transport), the generator is ultimately responsible for identifying the

[15] See comments from the Coalition for Responsible Waste Incineration. EPA-HQ-OLEM-2018-0830-0172.

characteristics of the waste at the point of generation and also through the normal management of the waste. Alternatively, some wastes would not normally separate into multiple phases during management. In these cases, a generator might not find it necessary to take measures to separate the waste even if the waste could separate under certain conditions (e.g., changes in temperature, pressure, or composition) provided these conditions are unlikely to occur during normal management of the waste. Generators must consider testing and/or knowledge of individual phases of multiple phase wastes when any individual phase likely exhibits the ignitable characteristic and therefore may cause the entire waste to pose a risk of fire during treatment, storage, and/or disposal. This is consistent with the fundamental obligation for generators to accurately determine whether a waste is hazardous under RCRA (as required in 262.11).

The Agency's existing guidance on sampling and responses to questions and comments from the public are discussed below.

3. Response to comments on sampling and analysis.

The Agency agrees with the public commenters who indicated that current practices in analytical laboratories are to separate the phases of multiple phase wastes and analyze each phase separately. The Agency believes the measurement of the flash point of multiple phase mixtures within a flash point apparatus would present significant analytical challenges. In responding within this section to the more specific comments and concerns raised by public comment, the Agency is providing guidance on identification of hazardous waste exhibiting the ignitability characteristic. This guidance may need further consideration before application to other characteristic or listed waste streams.

Two concerns raised by the public were that the Agency needs to provide sufficient guidance on how to determine if a waste contains multiple phases and when separation of a multiple phase waste is necessary. When determining if a waste contains multiple phases, a generator has to consider the properties of the waste as generated and the properties of the waste under the conditions that it is likely to encounter during normal management (e.g., during initial accumulation, storage, transport, treatment and disposal). A generator should also consider the Paint Filter Liquids Test to be the minimum requirement for determining whether a solid phase waste contains a liquid phase.[16] Therefore, a generator should consider their waste to be a multiple phase waste if at any time during the generation or likely management of the waste, a portion is determined by the generator to meet the definition of a liquid (e.g., as determined visually, by the Paint Filter Liquids Test, or through generator knowledge) and also has another phase consisting of a solid or a liquid.[17] This includes instances when waste may be generated in stratified layers, and multiple samples may need to be collected using test methods such as COLIWASA.[18]

The second concern from the commenter relates to when a waste must be separated once a generator has made a determination that their waste consists of multiple phases. The Agency notes that in the waste identification process, the generator of a

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[16] A generator may also determine through knowledge that their waste is a liquid or contains a liquid phase. The Agency would also encourage the use of other tests such as the Pressure Filtration Procedure within SW-846 Method 1311 if the generator determines the liquid resulting from pressure filtration more accurately represents their waste.

[17] The Agency considers it unlikely that a generator would be able to separate a non-liquid waste from a second non-liquid waste but does not prohibit a generator from doing so if it is possible and appropriate for their waste management.

[18] See SW-846 Chapter 9. EPA-HQ-OLEM-2018-0830-0162.

waste can rely on testing or knowledge of a waste and does not have to test or separate their waste if knowledge of the waste results in an accurate waste determination. For example, a generator may determine one phase of a waste is hazardous and manage the entire waste as hazardous without additional testing of a second phase. A generator may also conduct no testing when there is sufficient knowledge of the properties of the waste to make a hazardous waste identification. A generator is not required to separate all wastes as a normal part of waste management. The Agency had intended separating in the proposed regulatory language to mean that the generator would be subsampling a multiple phase waste so that each phase was analyzed separately in a flash point apparatus. The testing of a waste requires a sample representative of the hazards of the waste. A "representative sample" is defined by regulation (40 CFR 260.10) as "a sample of a universe or whole (e.g., waste pile, lagoon, ground water) which can be expected to exhibit the average properties of the universe or whole." For ignitable liquids, the hazard is exhibited by the vapor phase generated from the ignitable liquid. In the context of ignitable liquids, a sample of a waste that generates a vapor phase consistent with the vapor phase generated by the waste on average would be considered representative of the waste as a whole.

In determining when to separate (or subsample) wastes, a generator must consider what sampling strategy will result in a representative sample or will result in knowledge of the potential hazards exhibited by a representative sample. In some cases, the individual liquid phases of a multiple phase waste will be in equilibrium with each other and will resultingly have the same vapor phase. In this case a generator could sample either phase and obtain the same flash point value. This scenario is supported by public

comments explaining that sampling and analysis of the organic phase is often sufficient for identification of a multiple phase waste containing organic and aqueous phases.[19]

In other cases, the multiple phases of a waste will not be at equilibrium during management of the waste. This presents an analytical challenge as multiple phase wastes cannot readily be analyzed in a flash point apparatus without separating the phases and analyzing each phase separately. A generator who has separated each phase for analysis must then determine whether that phase is representative of the waste as a whole. Attempting to average (or predict) the vapor phases generated by multiple phases of a chemically complex waste through analysis of individual phases may present a significant challenge in some instances. In situations where a generator has determined that a single phase of a multiple phase waste is not representative of the waste as a whole, the generator should use the results of testing a single phase as part of the knowledge of the waste even though testing of an individual phase alone is not necessarily conclusive for making their hazardous waste determination.

The Agency also agrees with the commenters that a subset of mixtures should not or do not always require separation for analysis of each phase. One example is mixtures with a low concentration of a highly volatile, ignitable constituent. The process of separating phases using the Paint Filter Liquids Test may allow the volatile constituents to evaporate and alter the flash point test result. The Agency considers wastes that lose a significant portion of volatile constituents during filtration with the Paint Filter Liquids Test to not be separable by this test method.

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[19] See comments from the Environmental Technology Council. EPA-HQ-OLEM-2018-0830-170.

A commenter suggested that the guidance within Chapter 2 of SW-846 allows for broad discretion in choosing to sample one or multiple phases of a multiple phase sample and asked the Agency to better explain the applicability of this guidance to ignitable liquids.[20] Section 2.3.1.5 Multiphase Samples of Chapter 2 provides three approaches that are applicable to analyzing a sample for the total concentration of a constituent where the waste exists in multiple phases.

The first of three approaches in Section 2.3.1.5 states, "With a sample in which some of the phases tend to separate rapidly, the percent weight or volume of each phase should be calculated, and each phase should be individually analyzed for the required analytes." The Agency considers that when a generator of a waste has multiple phases that separate rapidly, analysis of each phase may be appropriate (or, alternatively, may not be necessary if generator knowledge is sufficient to characterize the waste). The analysis of each phase provides an accurate analysis of the potential hazards of the vapor phase generated by that liquid phase. However, the guidance to measure the weight or volume of each phase has limited applicability to determining a flash point or identifying an ignitability hazard. A flash point measurement depends upon the concentration of ignitable constituents in the vapor phase above a waste. The concentration of constituents in the vapor phase is not necessarily linear with the concentration of ignitables in the multiple liquid or solid phases. Ultimately, the determination made by the generator must consider whether the sample is representative of a waste and what hazards are exhibited by the waste.

[20] See comment from the Coalition for Responsible Waste Incineration. EPA-HQ-OLEM-2018-0830-0172.

The second of three approaches in Section 2.3.1.5 states, "An alternate approach is to obtain a homogeneous sample and attempt a single analysis on the combination of phases. This approach will give no information on the abundance of the analytes in the individual phases other than what can be implied by solubility." The Agency believes this may have some limited applicability with the use of Pensky-Martens testing of non-filterable suspended solids in liquids. If the waste has a more substantial second phase than nonfilterable solids, the Agency questions how a multiple phase sample can be homogenized and maintained as one phase inside the flash point apparatus unless the long term behavior of the waste were to be a one phase waste. The Agency is concerned this approach would yield highly inconsistent results due to the analytical challenges of measuring the flash point of a sample inside a flash point apparatus that would need to equilibrate multiple liquid or solid phases with the vapor phase at various temperatures. The Agency has also explained in the past that if a waste contains filterable solids, then the solids and liquids must be separated and then analyzed against the respective criteria for ignitable solids and ignitable liquids.[21]

The third approach in Section 2.3.1.5 states, "A third alternative is to select phases of interest and to analyze only those selected phases. This tactic must be consistent with the sampling/analysis objectives or it will yield insufficient information for the time and resources expended. The phases selected should be compared with Figure 21 and Table 241[in SW-846 Chapter 2] for further guidance." The Agency generally agrees with this approach when combined with generator knowledge of the

[21] See Letter to Mr. Nebrich. EPA-HQ-OLEM-2018-0830-0011.

waste. For example, a generator may make a determination through knowledge that an aqueous phase does not exhibit ignitability but rely on flash point testing to determine whether an organic phase of the same waste exhibits ignitability.

Therefore, EPA believes that the sampling approaches outlined in Section 2.3.1.5, while providing useful guidance in certain circumstances, have limitations, as described. Ultimately, the sampling approach should be designed to obtain a representative sample of a waste or to provide additional knowledge of the waste when an individual sample does not wholly represent the hazards of a waste.

The same commenter also raised concerns over what the Agency considered to be a separated waste and whether a separation must occur by the waste itself or whether a generator must attempt to force separation. This concern included the potential application of the ignitable liquids criteria to manufactured articles containing minute amounts of ignitable liquid. The commenter indicated that the waste would not yield a liquid when tested with the Paint Filter Liquids Test. The Agency does not consider the public comment to be sufficiently detailed to make a broad hazardous waste determination for all manufactured articles containing small amounts of liquid. In this scenario, if a generator has determined that their waste yields no liquid when subject to the Paint Filter Liquids Test, then that waste is likely not subject to the ignitable liquids regulation.

In some limited situations, a waste may present as a liquid in nature but not pass through a paint filter due to viscosity or due to oversized particulates preventing flow through pores. In these situations, the Agency recommends that the generator consider the possibility to decant, pipette, or use other physical means to collect a sample.

Additionally, a generator would also be required to consider the identification of ignitable non-liquids under 261.21(a)(2) when materials are not determined to be a liquid via the Paint Filter Liquids Test. The Agency recommends that the generator also carefully consider the conditions under which their waste is likely to be managed and any other characteristics or listings that may apply.

Taking into account the confusion caused by the Agency's proposal to codify existing guidance for multiple phase mixtures into regulation, the Agency has decided not to finalize the proposed language for 40 CFR 261.21(a)(5) at this time. The discussion in this preamble clarifies the Agency's position regarding testing of multiple phases of a waste. Individual phases of a multiple phase waste that exhibit ignitability and are representative of the multiple phase waste are subject to evaluation under the criteria in 40 CFR 261.21(a)(1) or 40 CFR 261.21(a)(2). Generators of multiple phases wastes where either phase is identified as exhibiting the characteristic of ignitability would be required to manage the entire waste as hazardous waste. A sample from a multiple phase waste that is not representative of the waste as a whole is not always conclusive for a waste identification. The Agency notes that 40 CFR 261.21(a) identifies waste based on the properties of a representative sample and that generators of a waste remain able to complete a waste identification through testing or knowledge. Testing of a waste may or may not require analysis of all phases to complete a hazardous waste determination.

F. Pressure filtration and ignitable liquids

In the proposed rule, EPA requested comment on whether the Agency should revisit adding language to Chapter 7 of SW-846 as guidance regarding the use of the Pressure Filtration Technique (PFT) specified in Method 1311 for assessing the presence

of an ignitable liquid for wastes that do not yield a free liquid phase using Method 9095 (i.e., Paint Filter Liquids Test or PFLT). Currently, generators may rely on the Paint Filter Liquids Test if they are separating a liquid from a solid for subsequent analysis. A generator may also be aware that a waste contains multiple phases through knowledge, testing, or visual observation. In these cases, a generator may sample individual phases without having to apply the Paint Filter Liquids Test. For example, a generator may be able to pipette, decant, pump, or use a COLIWASA apparatus to obtain a representative sample of the phase(s).

Several commenters raised concerns that the application of the Pressure Filtration Technique would be inconsistent with the Agency's rulemaking in 2013 that promulgated exclusions from solid and hazardous waste for solvent-contaminated wipes (see 78 FR 46448). Commenters also suggested that because the 2013 rulemaking provided guidance to use the Paint Filter Liquids Test for no free liquids, the 2013 rulemaking guidance would take precedence over any new guidance.

The Agency notes that the 2013 final rule for solvent-contaminated wipes provided guidance in preamble that generators should use the Paint Filter Test to determine no free liquids for solvent contaminated wipes under the finalized exclusions. The Agency considered whether a list of solvent extraction technologies might be more appropriate than a test to determine no free liquids and also considered the multiple tests state agencies were already using to verify compliance with the "no free liquids" conditions. The Agency was aware that the majority of the state agencies required the Paint Filter Liquids Tests and clarified that for the 2013 rulemaking, "EPA is using the Paint Filter Liquids Test for determining whether solvent-contaminated wipes contain

free liquids." The Agency also noted that authorized state programs are able to define "no free liquids" differently provided they are no less stringent. The Agency provided this guidance via rulemaking within the scope of solvent-contaminated wipes eligible for exclusion under 261.4(a)(26) or 261.4(b)(18).

The universe of ignitable liquids wastes is broader than the universe of solvent-contaminated wipes. The Agency expects some wastes are better represented by the pressure filtration procedure within EPA Method 1311 or by other analysis and requested comment regarding the use of Pressure Filtration Technique and Paint Filter Liquids Test since it was interested in learning from the experiences of the generators and regulators who have been identifying ignitable hazardous waste under the existing program. However, for most wastes that are not readily apparent to be a liquid through observation, the Agency believes the Paint Filter Liquids Test is an appropriate analysis. As noted by other commenters, the Agency clarified in 1995 that the Paint Filter Liquids Test is the minimum testing requirement to determine that a waste has no free liquids.[22] Commenters also noted that some wastes may present difficulties in being pressure filtered, such as liquid wastes with fine particles that prevent filtering or other hard to manage wastes.[23] Wastes that readily flow and take the shape of their container may not readily filter but may still be identified as ignitable liquids. The Agency is taking no final action specific to the application of the Pressure Filtration Procedure in this rulemaking.

G. Additional conforming amendments

[22] See Letter from David Brussard. EPA-HQ-OLEM-0830-0039.
[23] See comments by the Environmental Technology Council. EPA-HQ-OLEM-2018-0830-0170

The Agency has become aware that several additional conforming amendments to the regulations in Parts 63, 260, and 278 are necessary. Consistent with the other conforming amendments that EPA had proposed and is finalizing today, EPA is also finalizing these additional conforming amendments.

1. 40 CFR 63. Part 63 incorporates Method 0023A by reference in 40 CFR §63.14 and 40 CFR 63.1208. As the Agency has updated Method 0023A to allow for alternatives to mercury thermometer usage in this rule, failing to update the reference in Part 63 would require the continued use of mercury thermometers when using Method 0023A to meet testing requirements in Part 63.

2. 40 CFR 260.11. EPA is making non-substantive amendments to the centralized incorporated by reference section in part 260 for conformity with 1 CFR 51. EPA is revising part 260 such that the test methods identified in 40 CFR §260.11 are listed alphabetically and numerically and the language explaining incorporation by reference in 40 CFR §260.11(a) is updated to meet current style and formatting requirements of the *Federal Register*.

3. 40 CFR 278. Additionally, the incorporation by reference of Method 1312 into the regulations at 40 CFR 278.3(b)(1) should now be located in 40 CFR 260.11 to meet style and formatting requirements of the *Federal Register*.

IV. Incorporation by reference

The Methods Innovation Rule, which was finalized on June 14, 2005, revised 40 CFR 260.11 to remove the incorporation by reference of all SW-846 test methods except

those SW-846 test methods that are also regulatory required method-defined parameters under the RCRA regulations and thus, can only be amended through a regulatory effort.[24]

The Agency is incorporating by reference SW-846 Method 1010B, SW-846 Method 1020C, ASTM D8174-18, ASTM D8175-18, and ASTM E681-85 into §261.21 and as applicable into Appendix IX to part 261. SW-846 Method 1010B and SW-846 Method 1020C list the required methods to determine flashpoint for ignitable hazardous waste. SW-846 Method 1010B lists the Pensky-Martens flash point methods, which are ASTM Standards D93-79, D93- 80, and D8175-18. SW-846 Method 1020C lists the Setaflash (small-scale) closed cup flash point methods, which are the ASTM Standards D3278-78 and D8174-18. ASTM D8174-18 is a test method to determine the flash point of liquid wastes using a small-scale (Setaflash) apparatus. ASTM D8175-18 is a test method used to determine the flash point of liquid wastes using a Pensky-Martens apparatus. ASTM E681-85 is a test method used to determine the upper and lower concentration limits of flammability for chemicals having sufficient vapor pressure to form flammable mixtures with air.

The Agency is also incorporating by reference SW-846 Test Methods 0010, 0011, 0020, 0023A, and 0051. SW-846 Method 0010 is a sampling method for collection of gaseous and particulate pollutants from an emission source. SW-846 Method 0011 is a method for collection of selected ketones and aldehydes from an emission source. SW-

[24] It is important to note that while a test method listed in §260.11 is a method-defined parameter, that test method also may be used for non-mandatory purposes. For example, the Pensky-Martens method described in Method 1010A could also be used as part of quality control to test a product for purity, which is unrelated to §261.21 and, otherwise, not required under RCRA. In this case, the test method would not be a method-defined parameter. In order to be a method-defined parameter, a test method must be part of a regulatory requirement under RCRA.

846 Method 0020 is a method to collect gaseous and particulate pollutants from an emission source and into a multicomponent sampling train. SW-846 Method 0023A is a method for collection of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofuran from an emission source. SW-846 Method 0051 is a method for collection of hydrogen chloride and chlorine in stack gas emission samples from hazardous waste incinerators and combustors. The Agency is incorporating by reference Method 0010 into §260.11(c)(3)(i), Appendix IX to part 261, and Appendix IX to part 266. The Agency is incorporating by reference Method 0011 into §260.11(c)(3)(viii), Appendix IX to part 261, and Appendix IX to part 266. The Agency is incorporating by reference Method 0020 into §260.11(c)(3)(ii) and Appendix IX to part 261. The Agency is incorporating by reference Method 0023A into §260.11(c)(3)(ix), Appendix IX to part 261, and Appendix IX to part 266. The Agency is incorporating by reference Method 0051 into §260.11(c)(3)(xiii), Appendix IX to part 261, §266.107(f), and Appendix IX to part 266. The finalization of the proposed incorporation by reference of the above test methods is as described in the proposed rule and as discussed in Section III above.

The ASTM standards incorporated by reference are available for purchase from ASTM International, 100 Barr Harbor Drive, P.O. box C700, West Conshohocken, PA 19428-2959, *www.astm.org*, call 877-909-2786. The SW-846 Test Methods incorporated by reference are published in the test methods compendium known as "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, Third Edition, which can be found at *https://www.epa.gov/hw-sw846*.

V. State authorization

A. Applicability of final rule in authorized states

Under section 3006 of RCRA, EPA may authorize qualified states to administer and enforce the RCRA hazardous waste program within the state. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized states have primary enforcement responsibility. The standards and requirements for state authorization are found at 40 CFR part 271. Prior to enactment of the Hazardous and Solid Waste Amendments of 1984 (HSWA), a state with final RCRA authorization administered its hazardous waste program entirely in lieu of EPA administering the federal program in that state. The federal requirements no longer applied in the authorized state, and EPA could not issue permits for any facilities in that state, since only the state was authorized to issue RCRA permits. When EPA promulgated new, more stringent federal requirements for these pre-HSWA regulations, the state was obligated to enact equivalent authorities within specified time frames. However, the new federal requirements did not take effect in an authorized state, until the state adopted the federal requirements as state law. In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)), which was added by HSWA, new requirements and prohibitions imposed under HSWA authority take effect in authorized states at the same time that they take effect in unauthorized states. EPA is directed by the statute to implement these requirements and prohibitions in authorized states, including the issuance of permits, until the state is granted authorization to do so. While states must still adopt HSWA related provisions as state law to retain final authorization, EPA implements the HSWA provisions in authorized states until the states do so.

Authorized states are required to modify their programs only when EPA enacts federal requirements that are more stringent or broader in scope than existing federal

requirements.[25] RCRA section 3009 allows the states to impose standards more stringent than those in the federal program (see also 40 CFR 271.1). Therefore, authorized states may, but are not required to, adopt federal regulations, both HSWA and non-HSWA, that are considered less stringent than previous federal regulations.

B. Effect on state authorization

Today's notice finalizes regulations that would not be promulgated under the authority of HSWA. Thus, the standards would be applicable on the effective date only in those states that do not have final authorization of their base RCRA programs. Moreover, authorized states are required to modify their programs only when EPA promulgates federal regulations that are more stringent or broader in scope than the authorized state regulations. For those changes that are less stringent, states are not required to modify their programs. This is a result of section 3009 of RCRA, which allows states to impose more stringent regulations than the federal program.

The revisions to these test methods are considered to be neither more nor less stringent than the existing test methods. Thus, authorized states may, but are not required to, adopt these changes.

VI. Statutory and Executive Order (EO) reviews

Additional information about these statutes and Executive Orders can be found at *https://www.epa.gov/laws-regulations/laws-and-executive-orders*.

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

[25] EPA notes that decisions regarding whether a state rule is more stringent or broader in scope than the federal program are made when the Agency authorizes a state program for a particular rule.

This action is not a significant regulatory action and was therefore not submitted to the Office of Management and Budget (OMB) for review under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011).

B. Executive Order 13771: Reducing Regulations and Controlling Regulatory Costs

This action is a deregulatory action as specified in Executive Order 13771 (82 FR 9339, February 3, 2017). Details on the estimated cost savings of the final rule can be found in EPA's *Regulatory Impact Analysis of the Modernization of Ignitable Liquid Determination Rule*, which is in the docket.

C. Paperwork Reduction Act (PRA)

According to PRA, 44 U.S.C. 3501 *et seq*., an agency may not conduct or sponsor, and a person is not required to respond to a collection of information that requires OMB approval under the PRA, unless it has been approved by OMB and displays a currently valid OMB control number. The OMB control numbers for EPA's regulations in Title 40 of the CFR, after appearing in the *Federal Register*, are listed in 40 CFR part 9, and included on the related collection instrument, or form, as applicable. This action does not impose any burden requiring additional OMB approval because it neither imposes new paperwork requirements nor amends existing paperwork requirements. Burden is defined in 5 CFR 1320.3(b). OMB previously approved the information collection activities contained in the existing regulations and assigned OMB control numbers 2050-0053 and 2050-0073.

D. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA, 5 U.S.C. 601 *et seq*. In making this

determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden or otherwise has a positive economic effect on the small entities subject to the rule. As documented in the *Regulatory Impact Analysis of the Modernization of Ignitable Liquid Determinations Rule* found in the docket for this final rule, EPA does not expect the rule to result in an adverse impact to a significant number of small entities. For commercial labs, the analysis presented in Chapter 3 indicates either no change in costs or a cost savings, due to the flexibility afforded by the rule. Therefore, out of the 128 firms defined as small under the Small Business Administration size standards, no firms have costs greater than one percent of annual revenues. EPA has therefore concluded that this action will either relieve regulatory burden or have no net regulatory burden for all directly regulated small entities.

E. Unfunded Mandates Reform Act (UMRA)

As documented in the *Regulatory Impact Analysis of the Modernization of Ignitable Liquid Determinations Rule* found in the docket for the final rule, this action does not contain an unfunded mandate of $100 million or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments.

F. Executive Order 13132: Federalism

This action does not have "federalism implications" as that term is defined in Executive Order 13132 (64 FR 43255, August 10, 1999). It will not have substantial direct effects on the states, on the relationship between the national government and the

states, or on the distribution of power and responsibilities among the various levels of government.

G. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

This action does not have tribal implications as specified in Executive Order 13175. The final rule is not expected to result in any adverse impacts on tribal entities. Thus, Executive Order 13175 does not apply to this rule.

H. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks

EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that EPA has reason to believe may disproportionately affect children, per the definition of "covered regulatory action" in section 2-202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not concern an environmental health risk or safety risk.

I. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution or Use

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

J. National Technology Transfer and Advancement Act (NTTAA)

This action involves technical standards. EPA is adopting the use of ASTM D8175-18 and ASTM D8174-18. These test methods were adopted by ASTM in March 2018. These standards are available for purchase from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959. EPA worked with

ASTM to specifically develop these consensus-based standards to better suit waste testing by modifying existing ASTM standards. EPA worked with a member of the ASTM D02.08 Subcommittee (who also represents Stanhope-Seta) to modify existing ASTM methods D93-16 and D3828-16a, which were developed by the ASTM D02.08 Subcommittee. These new draft test methods were then submitted to ASTM's review process and were approved by the ASTM D34 Committee to become new ASTM test methods.

K. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

EPA believes that this action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994). The final rule modernizes testing and codify guidance for the characterization of ignitable hazardous waste, it does not affect the disposal of such waste. Therefore, the final rule is not expected to result in any adverse human health or environmental effects on minority populations, low-income populations and/or indigenous peoples.

L. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a "major rule" as defined by 5 U.S.C. 804(2).

List of Subjects

40 CFR Part 63

Environmental protection, Incorporation by reference

40 CFR Part 260

Environmental protection, Hazardous waste, Incorporation by reference.

40 CFR Part 261

Environmental protection, Hazardous waste, Incorporation by reference, Recycling.

40 CFR 278

Environmental protection, Incorporation by reference.

Andrew Wheeler,

Administrator.

For the reasons set forth in the preamble, title 40, chapter I, of the Code of Federal Regulations is amended as follows:

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

2. Amend §63.14 by revising the introductory text and paragraph (q)(2)(i) to read as follows:

§63.14 Incorporations by reference.

The materials listed in this section are incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, a document must be published in the *Federal Register* and the material must be available to the public. All approved materials are available for inspection at the Air and Radiation Docket and Information Center (Air Docket) in the EPA Docket Center (EPA/DC) at Rm. 3334, EPA West Bldg., 1301 Constitution Ave., NW., Washington, DC. The EPA/DC Public Reading Room hours of operation are 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number of the EPA/DC Public Reading Room is (202) 566-1744, and the telephone number for the Air Docket is (202) 566-1742. These approved materials are also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fedreg.legal@nara.gov* or go to *www.archives.gov/federal-register/cfr/ibr-locations.html*. In addition, these materials are available from the following sources:

**** *

(q) ***

(2) ***

(i) Method 0023A, "Sampling Method for Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofuran Emissions from Stationary Sources," Revision 2, dated August 2018, IBR approved for §63.1208(b).

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PART 260 –HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

3. The authority citation for part 260 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921-6927, 6930, 6934, 6935, 6937, 6938, 6939, and 6974.

4. Revise §260.11 to read as follows:

§ 260.11 Incorporation by reference.

When used in parts 260 through 268 of this chapter, the following materials are incorporated by reference with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. All approved materials are available for inspection at the OLEM Docket in the Environmental Protection Agency Docket Center (EPA/DC), West William Jefferson Clinton Bldg., Rm. 3334, 1301 Constitution Ave. NW., Washington, DC. The EPA/DC Public Reading Room hours of operation are 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number of the EPA/DC Public Reading room is (202) 566-1744, and the telephone number for the OLEM Docket is (202) 566-0270. These approved materials are also available for inspection at the National Archives and Records Administration (NARA). For

information on the availability of this material at NARA, email *fedreg.legal@nara.gov* or go to *www.archives.gov/federal-register/cfr/ibr-locations.html*. In addition, these materials are available from the following sources:

(a) *American Petroleum Institute (API).* 1220 L Street, Northwest, Washington, DC 20005, (855) 999-9870, *www.api.org*.

(1) API Publication 2517, Third Edition, February 1989, "Evaporative Loss from External Floating-Roof Tanks," IBR approved for §265.1084.

(2) [Reserved]

(b) *ASTM International (ASTM)*. 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, (877) 909-ASTM, *www.astm.org*.

(1) ASTM D93-79, "Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester," IBR approved for §261.21(a).

(2) ASTM D93-80, "Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester," IBR approved for §261.21(a).

(3) ASTM D1946-82, "Standard Method for Analysis of Reformed Gas by Gas Chromatography," IBR approved for §§264.1033 and 265.1033.

(4) ASTM D2267-88, "Standard Test Method for Aromatics in Light Naphthas and Aviation Gasolines by Gas Chromatography," IBR approved for §264.1063.

(5) ASTM D2382-83, "Standard Test Method for Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method)," IBR approved for §§264.1033 and 265.1033.

(6) ASTM D2879-92, "Standard Test Method for Vapor Pressure—Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope," IBR approved for §265.1084.

(7) ASTM D3278-78, "Standard Test Methods for Flash Point for Liquids by Setaflash Closed Tester," IBR approved for §261.21(a).

(8) ASTM D8174-18 "Standard Test Method for Finite Flash Point Determination of Liquid Wastes by Small Scale Closed Cup Tester." Approved March 15, 2018, IBR approved for §261.21(a).

(9) ASTM D8175-18 "Standard Test Method for Finite Flash Point Determination of Liquid Wastes by Pensky-Martens Closed Cup Tester." Approved March 15, 2018, IBR approved for §261.21(a).

(10) ASTM E168-88, "Standard Practices for General Techniques of Infrared Quantitative Analysis," IBR approved for §264.1063.

(11) ASTM E169-87, "Standard Practices for General Techniques of Ultraviolet-Visible Quantitative Analysis," IBR approved for §264.1063.

(12) ASTM E260-85, "Standard Practice for Packed Column Gas Chromatography," IBR approved for §264.1063.

(13) ASTM E681-85 "Standard Test Method for Concentration Limits of Flammability of Chemicals (Vapors and gases)," Approved November 14, 1985, IBR approved for §261.21(a).

(c) *Environmental Protection Agency (EPA)*. Material cited in paragraphs (d)(1) through (3) is available from: National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161; the Superintendent of Documents, U.S. Government

Printing Office, Washington, DC 20402, (202) 512-1800; EPA's National Service Center for Environmental Publications at *https://www.epa.gov/nscep*. Material cited in paragraph (d)(4) of this section is available at *https://www.epa.gov/hw-sw846*.

(1) "APTI Course 415: Control of Gaseous Emissions," EPA Publication EPA-450/2-81-005, December 1981, IBR approved for §§264.1035 and 265.1035.

(2) Method 1664, n-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated n-Hexane Extractable Material SGT-HEM; Non-polar Material) by Extraction and Gravimetry:

(i) Revision A, EPA-821-R-98-002, February 1999, IBR approved for appendix IX to part 261.

(ii) Revision B, EPA-821-R-10-001, February 2010, IBR approved for appendix IX to part 261.

(3) "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised", October 1992, EPA Publication No. EPA-450/R-92-019, IBR approved for appendix IX to part 266.

(4) The following methods as published in the test methods compendium known as "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, Third Edition.

(i) Method 0010, Modified Method 5 Sampling Train, Revision 1, dated August 2018, IBR approved for appendix IX to part 261.

(ii) Method 0011, Sampling for Selected Aldehyde and Ketone Emissions from Stationary Sources, Revision 1, dated August 2018, IBR approved for appendix IX to part 261 and appendix IX to part 266

(iii) Method 0020, Source Assessment Sampling System (SASS), Revision 1, dated August 2018, IBR approved for appendix IX to part 261.

(iv) Method 0023A, Sampling Method for Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofuran Emissions from Stationary Sources, Revision 2, dated August 2018, IBR approved for appendix IX to part 261, §266.104(e), and appendix IX to part 266.

(v) Method 0030, Volatile Organic Sampling Train, dated September 1986 and in the Basic Manual, IBR approved for appendix IX to part 261.

(vi) Method 0031, Sampling Method for Volatile Organic Compounds (SMVOC), dated December 1996 and in Update III, IBR approved for appendix IX to part 261.

(vii) Method 0040, Sampling of Principal Organic Hazardous Constituents from Combustion Sources Using Tedlar® Bags, dated December 1996 and in Update III, IBR approved for appendix IX to part 261.

(viii) Method 0050, Isokinetic HCl/Cl_2 Emission Sampling Train, dated December 1996 and in Update III, IBR approved for appendix IX to part 261, §266.107, and appendix IX to part 266.

(ix) Method 0051, Midget Impinger HCl/Cl2 Emission Sampling Train, Revision 1, dated August 2018, IBR approved for appendix IX to part 261, §266.107, and appendix IX to part 266.

(x) Method 0060, Determination of Metals in Stack Emissions, dated December 1996 and in Update III, IBR approved for appendix IX to part 261, §266.106, and appendix IX to part 266.

(xi) Method 0061, Determination of Hexavalent Chromium Emissions from Stationary Sources, dated December 1996 and in Update III, IBR approved for appendix IX to part 261 §266.106, and appendix IX to part 266.

(xii) Method 1010B, Test Methods for Flash Point by Pensky-Martens Closed-Cup Tester, dated December 2018, IBR approved for §261.21 and appendix IX to part 261.

(xiii) Method 1020C, Standard Test Methods for Flash Point by Setaflash (Small Scale) Closed-Cup Apparatus, dated December 2018, IBR approved for §261.21 and appendix IX to part 261.

(xiv) Method 1110A, Corrosivity Toward Steel, dated November 2004 and in Update IIIB, IBR approved for §261.22 and appendix IX to part 261.

(xv) Method 1310B, Extraction Procedure (EP) Toxicity Test Method and Structural Integrity Test, dated November 2004 and in Update IIIB, IBR approved for appendix IX to part 261.

(xvi) Method 1311, Toxicity Characteristic Leaching Procedure, dated July 1992 and in Update I, IBR approved for appendix IX to part 261, and §§261.24, 268.7, 268.40.

(xvii) Method 1312, Synthetic Precipitation Leaching Procedure, dated September 1994 and in Update III, IBR approved for appendix IX to part 261.

(xviii) Method 1320, Multiple Extraction Procedure, dated September 1986 and in the Basic Manual, IBR approved for appendix IX to part 261.

(xix) Method 1330A, Extraction Procedure for Oily Wastes, dated July 1992 and in Update I, IBR approved for appendix IX to part 261.

(xx) Method 9010C, Total and Amenable Cyanide: Distillation, dated November 2004 and in Update IIIB, IBR approved for appendix IX to part 261 and §§268.40, 268.44, 268.48.

(xxi) Method 9012B, Total and Amenable Cyanide (Automated Colorimetric, with Off-Line Distillation), dated November 2004 and in Update IIIB, IBR approved for appendix IX to part 261 and §§268.40, 268.44, 268.48.

(xxii) Method 9040C, pH Electrometric Measurement, dated November 2004 and in Update IIIB, IBR approved for appendix IX to part 261 and §261.22.

(xxiii) Method 9045D, Soil and Waste pH, dated November 2004 and in Update IIIB, IBR approved for appendix IX to part 261.

(xxiv) Method 9060A, Total Organic Carbon, dated November 2004 and in Update IIIB, IBR approved for appendix IX to part 261, and §§264.1034, 264.1063, 265.1034, 265.1063.

(xxv) Method 9070A, n-Hexane Extractable material (HEM) for Aqueous Samples, dated November 2004 and in Update IIIB, IBR approved for appendix IX to part 261.

(xxvi) Method 9071B, n-Hexane Extractable Material (HEM) for Sludge, Sediment, and Solid Samples, dated April 1998 and in Update IIIA, IBR approved for appendix IX to part 261.

(xxvii) Method 9095B, Paint Filter Liquids Test, dated November 2004 and in Update IIIB, IBR approved, appendix IX to part 261, and §§264.190, 264.314, 265.190, 265.314, 265.1081, 267.190(a), 268.32.

(d) *National Fire Protection Association (NFPA)*. 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101, (800) 344-3555, *www.nfpa.org/*.

(1) NFPA 30, "Flammable and Combustible Liquids Code," 1977 Edition, IBR approved for §§262.16(b), 264.198(b), 265.198(b), and 267.202(b).

(2) NFPA 30, "Flammable and Combustible Liquids Code," 1981 Edition, IBR approved for §§262.16(b), 264.198(b), 265.198(b), and 267.202(b).

(e) *Organization for Economic Cooperation and Development (OECD)*. Economic Cooperation and Development, Environment Directorate, 2 rue André Pascal, F-75775 Paris Cedex 16, France, o*www.oecd-ilibrary.org/*.

(1) Guidance Manual for the Control of Transboundary Movements of Recoverable Wastes, copyright 2009, Annex B: OECD Consolidated List of Wastes Subject to the Green Control Procedure and Annex C: OECD Consolidated List of Wastes Subject to the Amber Control Procedure, IBR approved for §§262.82(a), 262.83(b), (d), and (g), and 262.84(b) and (d).

(2) [Reserved]

PART 261 –IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

5.The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, 6924(y) and 6938.

6. Amend § 261.21, by:

a. Revising paragraphs (a)(1), (3)(ii), (4) introductory text, and (4)(i)(A), and (D); and

b. Removing Notes 1, 2, 3, and 4.

The revisions read as follows:

§261.21 Characteristic of ignitability.

(a) * * *

(1) It is a liquid, other than a solution containing less than 24 percent alcohol by volume and at least 50 percent water by weight, that has a flash point less than 60 °C (140 °F), as determined by using one of the following ASTM standards: ASTM D93-79, D93-80, D3278-78, D8174-18, or D8175-18 as specified in SW-846 Test Methods 1010B or 1020C (all incorporated by reference, see §260.11 of this subchapter).

* * * * *

(3) * * *

(ii) A compressed gas shall be characterized as ignitable if any one of the following occurs:

(A) Either a mixture of 13 percent or less (by volume) with air forms a flammable mixture or the flammable range with air is wider than 12 percent regardless of the lower limit. These limits shall be determined at atmospheric temperature and pressure. The method of sampling and test procedure shall be the ASTM E 681-85 (incorporated by reference, see § 260.11 of this subchapter), or other equivalent methods approved by the Associate Administrator, Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation.

(B) It is determined to be flammable or extremely flammable using 49 CFR 173.115(l).

* * * * *

(4) It is an oxidizer. An oxidizer for the purpose of this subchapter is a substance such as a chlorate, permanganate, inorganic peroxide, or a nitrate, that yields oxygen readily to stimulate the combustion of organic matter.

(i) * * *

(A) The material meets the definition of a Division 1.1, 1.2, or 1.3 explosive, as defined in §261.23(a)(8), in which case it must be classed as an explosive,

* * * * *

(D) According to data on file with the Pipeline and Hazardous Materials Safety Administration in the U.S. Department of Transportation, it has been determined that the material does not present a hazard in transportation.

* * * * *

7. Amend Appendix IX to Part 261 by removing the text "1010A" and adding "1010B" in its place, wherever it appears (56 occurrences); and removing the text "1020B" and adding "1020C" in its place, wherever it appears (56 occurrences).

PART 278—CRITERIA FOR THE MANAGEMENT OF GRANULAR MINE TAILINGS (CHAT) IN ASPHALT CONCRETE AND PORTLAND CEMENT CONCRETE IN TRANSPORTATION CONSTRUCTION PROJECTS FUNDED IN WHOLE OR IN PART BY FEDERAL FUNDS

8. The authority citation for part 278 continues to read as follows:

Authority: 42 U.S.C. 6961 et seq.

9. Amend § 278.3, by revising paragraph (b)(1) and adding paragraph (d) to read as follows:

§278.3 Criteria for use of chat in Federally funded transportation projects.

* * * *

(b) * * *

(1) Synthetic Precipitation Leaching Procedure (SPLP) tests are conducted on the proposed material using EPA SW-846 Method 1312, and the leachate testing results show that concentrations in the leachate do not exceed the National Primary Drinking Water Standards for lead and cadmium and the fresh water chronic National Recommended Water Quality Criterion for zinc of 120 µg/l; or

* * * * *

(d) EPA SW-846 Method 1312, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," Third Edition, September 1994, is incorporated by reference into this section with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. It is available at *www.epa.gov/hw-sw846/*. All approved material is available for inspection at the OLEM Docket in the Environmental Protection Agency Docket Center (EPA/DC), West William Jefferson Clinton Bldg., Rm. 3334, 1301 Constitution Ave. NW., Washington, DC. The EPA/DC Public Reading Room hours of operation are 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number of the EPA/DC Public Reading room is (202) 566-1744, and the telephone number for the OLEM Docket is (202) 566-0270. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fedreg.legal@nara.gov* or go to *www.archives.gov/federal-register/cfr/ibr-locations.html*.