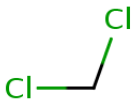
Preliminary Information on Manufacturing, Processing, Distribution, Use, and Disposal:

Methylene Chloride

CASRN: 75-09-2



February 2017

Support document
for Docket EPA-HQ-OPPT-2016-0742

This document provides a preliminary public summary of available information collected by EPA's Office of Pollution Prevention and Toxics (OPPT) in the Office of Chemical Safety and Pollution Prevention (OCSPP) on the manufacturing (including importing), processing, distribution in commerce, use, and disposal of this chemical. This is based on existing data available to EPA, including information collected under the Chemical Data Reporting rule, Toxics Release Inventory (if available), information from other Agency databases, other U.S. Government agencies, publicly available information from states, and a review of published literature. In addition, the document includes information reported to EPA by producers and users of the chemical in the United States and in other countries.

This preliminary use information and any additional use information received in the docket by March 15, 2017 will inform efforts to develop the scope of the chemical risk evaluation required under section 6(b)(4) of the Toxic Substances Control Act, and will inform any risk management efforts following risk evaluation.

Mention of trade names in this document does not constitute endorsement by EPA. To verify products or articles containing this chemical currently in commerce, EPA has identified several examples. Any lists are provided for informational purposes only. EPA and its employees do not endorse any of the products or companies.

This document does not contain confidential business information (CBI).

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CONTACTS

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Docket: EPA-HQ-OPPT-2016-0742

MANUFACTURING, PROCESSING AND USE

1. Manufacturing (Including Importing)

For the 2016 Chemical Data Reporting (CDR) period, data reported indicate there are three manufacturers, six importers and one manufacturer and importer of methylene chloride in the United States[1],[2]. Other companies that manufacture or import methylene chloride are confidential business information (CBI). The total volume (in lbs.) of methylene chloride manufactured (including imported) in the United States in 2012 was 230,896,388; in 2013: 230,498,027; in 2014: 248,241,495; in 2015: 263,971,494.

For the 2015 Toxics Release Inventory (TRI), 272 facilities reported releases of methylene chloride[3]. Of these, 21 facilities reported manufacture in the United States, 8 reported import, 146 reported processing, and 202 reported other uses (some sites reported in multiple categories)[4]. A total of 153,707,292 lbs. was reported as released.

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[1] Manufacturers (including importers) are required to report under CDR if they meet certain production volume thresholds, generally 25,000 lb or more of a chemical substance at any single site. Reporting is triggered if the annual reporting threshold is met during any of the calendar years since the last principal reporting year. In general, the reporting threshold remains 25,000 lb per site. However, a reduced reporting threshold (2,500 lb) now applies to chemical substances subject to certain TSCA actions. https://www.epa.gov/chemical-data-reporting/how-report-under-chemical-data-reporting

[2] Manufacture in the context of CDR means to manufacture, produce, or import for commercial purposes. Manufacture includes the extraction, for commercial purposes, of a component chemical substance from a previously existing chemical substance or complex combination of chemical substances. (40 CFR 711.3)
https://www.epa.gov/sites/production/files/2015-12/documents/cdr_fact_sheet_importers_final_dec2015_0.pdf

Similarly, the term "manufacture" in the context of TRI means to produce, prepare, compound, or import an EPCRA Section 313 chemical. The term "manufacture" also includes coincidental production of an EPCRA Section 313 chemical (e.g., as a byproduct or impurity) as a result of the manufacture, processing, otherwise use or disposal of another chemical or mixture of chemicals. https://www.epa.gov/sites/production/files/documents/ry2012rfi.pdf

[3] A facility must report to the TRI program if it meets all three of the following criteria: 1) is in a specific industry sector, 2) employs 10 or more full-time equivalent employees, and 3) manufactures, processes, or otherwise uses a TRI-listed chemical in quantities above applicable threshold levels for a given chemical in a given year. https://www.epa.gov/toxics-release-inventory-tri-program/basics-tri-reporting

[4] The term "process" in the context of CDR and TRI means the preparation of a chemical substance or mixture, after its manufacture, for distribution in commerce—
(A) in the same form or physical state as, or in a different form or physical state from, that in which it was received by the person so preparing such substance or mixture, or
(B) as part of an article containing the chemical substance or mixture.
http://uscode.house.gov/view.xhtml?path=/prelim@title15/chapter53&edition=prelim

The term "otherwise use" under TRI means any use of an EPCRA Section 313 chemical, including an EPCRA Section 313 chemical contained in a mixture or other trade name product or waste, that is not covered by the terms manufacture or process. See the definition of "otherwise use" for additional details on applicability of otherwise use with regard to disposal, stabilization, and treatment for destruction. https://www.epa.gov/sites/production/files/2016-01/documents/ry_2015_tri_reporting_forms_and_instructions.pdf

Manufacturing Process

The following manufacturing processes for methylene chloride have been reported:

- Reaction of hydrogen chloride and methanol result in methyl chloride. Excess methyl chloride then reacts with added chlorine to produce methylene chloride, chloroform, and carbon tetrachloride as coproducts. Reactors with different feeds are also used. At low temperature and high pressure, the reaction is more selective to methylene chloride.
- Reaction of excess methane with chlorine at high temperatures or under catalytic or photolytic conditions produces methyl chloride, chloroform and carbon tetrachloride as coproducts. Temperature and raw material flow rates are used to maximize the production of the product desired. The liquid chloromethane stream, which contains the methylene chloride and the coproducts passes through a fractionating column after washing.

Sources:
Holbrook MT; Methylene Chloride. Ullmann's Encyclopedia of Industrial Chemistry 7th ed. (1999-2014). NY, NY: John Wiley & Sons. Online Posting Date: August 15, 2003 (From HSBD database).
http://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+hsdb:@term+@DOCNO+66
http://webnet.oecd.org/HPV/UI/handler.axd?id=b8ea971c-0c2c-4976-8706-a9a68033daa0
https://cfpub.epa.gov/ncea/iris/iris_documents/documents/toxreviews/0070tr.pdf

2. Processing

For the 2016 CDR period, data reported indicate that methylene chloride is processed for the following:

- As a reactant (with a function claimed CBI) in the petrochemical manufacturing sector
- Formulations, mixtures, or reaction products, as a solvent for cleaning or degreasing, in the following sectors:
    - Basic organic chemical manufacturing
    - Soap, cleaning compound, and toilet preparation manufacturing
- Incorporated or used in a non-incorporative activity as a solvent for cleaning or degreasing:
    - As a solvent that become part of product formulation or mixture, in:
        - Paint and coating manufacturing
        - Other chemical product and preparation manufacturing
    - As a chemical processing or manufacturing aid in:
        - Plastic material and resin manufacturing
        - All other chemical product and preparation manufacturing
        - Plastics product manufacturing
        - Miscellaneous manufacturing
        - CBI sector
- Also used in a non-incorporative activity (e.g. as a chemical processing or manufacturing aid) as a solvent which becomes part of product formulation or mixture in the chemical product and preparation manufacturing sector
- Incorporation and used in a non-incorporative activity as a laboratory chemical in:
    - Chemical product and preparation manufacturing
    - Sectors that are CBI

- Incorporation into adhesives and sealant chemicals in the adhesive manufacturing sector
- Intermediate in pesticide, fertilizer and other agricultural chemical manufacturing
- Incorporated into formulation, mixture, or reaction product, (however the exact use is not known or reasonable ascertainable) in the oil and gas drilling, extraction, and support activities sector
- A paint additive and coating additive in a sector claimed CBI
- Repackaging as a solvent that is part of product formulation or mixture (and other CBI functions), in the chemical product and preparation manufacturing sector
- Used as non-incorporative activity (e.g. as a chemical processing or manufacturing aid) as a processing aid, specific to petroleum production in the chemical product and preparation manufacturing sector, as well as in the following sectors:
    - All other basic organic chemical manufacturing
    - Plastic material and resin manufacturing
    - Pesticide, fertilizer, and other agricultural chemical manufacturing

Methylene chloride is considered a very stable compound, however, small amounts of stabilizer are usually added during processing of methylene chloride into products. Stabilizers reported include: cyclohexane, propylene oxide (commercial aerosols & reagent grades). Other reported stabilizers include 2-methyl-2-butene, ethanol or methanol, and phenol, amines, 4-cresol, hydroquinone, 1-naphthol, nitromethane + 1,4-dioxane, resorcinol, and thymol.
Sources:
Kirk-Othmer Encyclopedia of Chemical Technology. 4th ed. Volumes 1: New York, NY. John Wiley and Sons, 1991-Present., p. V5 1044
IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans. Geneva: World Health Organization, International Agency for Research on Cancer, 1972-PRESENT. (Multivolume work). Available at: http://monographs.iarc.fr/ENG/Classification/index.php p. V41 45 (1986)
WHO; Environ Health Criteria: Methylene chloride p.15 (1984) http://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+hsdb:@term+@DOCNO+66 (From HSDB database).

3. Products and Articles

Data reported to CDR for the 2016 submission period indicate that methylene chloride is present in the following products:

- Cleaning and Furniture Care Products (commercial)
- Adhesives and sealants (commercial and not known or reasonable ascertainable if commercial and consumer)
- Paintings and coatings (commercial and consumer)
- Metal products not covered elsewhere (commercial)
- Plastic and rubber products (commercial)
- Toys, playground and sporting equipment (consumer)
- Automotive care products (commercial)
- Lubricants and greases (commercial)
- Other (commercial)

Other commercial and consumer uses are CBI.

Results of a search of products and articles containing methylene chloride are in the table below. EPA has identified the types of products currently in commerce. This list is provided for informational purposes only. EPA and its employees do not endorse any of the products or companies.

Table 1. List of Products and Articles

Trade name	Use of the product as described in the SDS or the company website	% by weight of chemical	Link to references, SDS or industry information
Adhesives			
HMS	Adhesive, industrial use	40 – 70 trade secret	http://multimedia.3m.com/mws/mediawebserver?mwsId=SSSSSuUn_zu8l00xm8tZOYtSNv70k17zHvu9lxtD7SSSSSS--
CAMIE 313B Upholstery Adhesive	Designed to affix urethane foam, fabric, metal and wood	80 - 90	http://www.camie.com/sites/default/files/msds/camie-sds313B.pdf
Closed cell foam spray adhesive DP 2595	Industrial contact insulation adhesive. Formulated for adhering closed cell foam and higher density insulation	40 - 50	http://designpoly.com/wp-content/uploads/ADHESIVE/DP2595/DP-2595-SDS.pdf
Duct liner spray adhesive DP 2590	Pressure sensitive fiberglass duct liner insulation adhesives	30 - 60	http://designpoly.com/wp-content/uploads/ADHESIVE/2590/DP-2590-SDS.pdf
GP1-40BL Adhesive/ DIV01001	Adhesive – consumer product	45 - 55	http://media.diversitech.com/doc/DOC32371.pdf
Quick-Stick™ (cylinder)	For bonding insulation or other materials to smooth, nonporous surfaces	40 - 70	http://ductmate.com/cmp-media/MSDS/quickstick_sds_08-15.pdf
Elgen AE-77	For bonding fiberglass duct liner to metal ductwork. Aerosol spray system	40 - 70	http://www.elgenmfg.com/uploaded/files/msds/sds_AE77.pdf?direct=1
STA'-PUT 1535 Contact Adhesive		55 - 75	http://itwstaput.com/wp-content/uploads/bsk-pdf-manager/119_A-1535_STA-PUT_1535_CONTACT_ADHESIVE.PDF
STA'-PUT S100 Contact Adhesive		55 - 75	http://itwstaput.com/wp-content/uploads/bsk-pdf-manager/128_3210M_STA-PUT_S100_CONTACT_ADHESIVE.PDF
STA'-PUT S120 Contact Adhesive		75 - 90	http://itwstaput.com/wp-content/uploads/bsk-pdf-manager/129_2849M_STA-PUT_S120_CONTACT_ADHESIVE.PDF
STA'-PUT S170/S171 Contact Adhesive		45 - 70	http://itwstaput.com/wp-content/uploads/bsk-pdf-manager/134_CA398_STA-PUT_S170-S171_CONTACT_ADHESIVE.PDF
STA'-PUT S200 Aerosol Adhesive		45 - 70	http://itwstaput.com/wp-content/uploads/bsk-pdf-manager/135_JSP-0290_AEROSOL_STA-PUT_S200_AEROSOL_ADHESIVE.PDF

Trade name	Use of the product as described in the SDS or the company website	% by weight of chemical	Link to references, SDS or industry information
STA'-PUT SPH Contact Adhesive		65 - 80	http://itwstaput.com/wp-content/uploads/bsk-pdf-manager/151_SPH_STA-PUT_SPH_CONTACT_ADHESIVE.PDF
STA'-PUT SPHS Canister Adhesive		55 - 75	http://itwstaput.com/wp-content/uploads/bsk-pdf-manager/152_SPHS_STA-PUT_SPHS_CANISTER_ADHESIVE.PDF
STA'-PUT SPM Aerosol Adhesive		45 - 70	http://itwstaput.com/wp-content/uploads/bsk-pdf-manager/153_70-GP1_AEROSOL_STA-PUT_SPM_AEROSOL_ADHESIVE.PDF
EverStrong ES30 Contact Adhesive – Aerosol and Canister	Industrial adhesive applications	40 – 50	http://www.newstaradhesivesusa.com/wp-content/themes/bizniz/pdfs/SDS/ES30_SDS.pdf
EverStrong ES35 Contact Adhesive – Aerosol & Canister	Industrial adhesive applications	60 - 70	http://www.newstaradhesivesusa.com/wp-content/themes/bizniz/pdfs/SDS/ES35_SDS.pdf
EverStrong ES130 Contact Adhesive – Air Assist Canister	Industrial adhesive applications	80 - 100	http://www.newstaradhesivesusa.com/wp-content/themes/bizniz/pdfs/SDS/ES130_SDS_v1.pdf
EverStrong ES800 Contact Adhesive – Bulk	Industrial adhesive applications	65 - 80	http://www.newstaradhesivesusa.com/wp-content/themes/bizniz/pdfs/SDS/ES800_SDS.pdf
Tensorgrip A20 Plasticizer Resistant Crosslinking Contact Adhesive	Formulated to bond many commonly used substrates found within the aerospace industry i.e. vinyl, rubber, leathers and plastics	30 - 60	http://www.tensorglobal.com/uploads/products/A20%20SDS.pdf
Tensorgrip A40N Non-Flam Low Profile Contact Adhesive	Formulated for bonding aircraft synthetic leather (i.e. ultra leather) and thin fabrics	60 - 100	http://www.tensorglobal.com/uploads/products/A40N%20SDS.pdf
Tensorgrip F30N Non-Flam Pressure Sensitive Foam & Fabric Adhesive	For temporary or permanent bonds especially for porous to non-porous substrates	60 - 100	http://www.tensorglobal.com/uploads/products/F30N%20SDS.pdf
Tensorgrip F70N Non-Flam Agressive Pressure Sensitive Adhesive	Spray adhesive for foam and upholstery	60 - 100	http://www.tensorglobal.com/uploads/products/F70N%20SDS.pdf
Tensorgrip H20N Non-Flam Duct Liner Adhesive	Formulated to bond insulation inside and to the exterior of ductwork	60 - 100	http://www.tensorglobal.com/uploads/products/H20N%20SDS.pdf
Tensorgrip L10AA High Temp Contact Adhesive	Formulated for bonding laminate on porous materials	30 - 60	http://www.tensorglobal.com/uploads/products/L10%20AA%20SDS.pdf

Trade name	Use of the product as described in the SDS or the company website	% by weight of chemical	Link to references, SDS or industry information
Tensorgrip L10N Non-Flam High Temp Contact Adhesive	Formulated for bonding decorative high pressure laminate	60 - 100	http://www.tensorglobal.com/uploads/products/L10N%20SDS.pdf
Tensorgrip L12-AA Aggressive High Profile Contact Adhesive	For bonding to sheet timber, metal and some hard plastics	30 - 60	http://www.tensorglobal.com/uploads/products/L12-AA%20SDS.pdf
Tensorgrip L71 Plasticizer Resistant Crosslinking Contact Adhesive	Formulated for bonding vinyl, rubber and plastics	30 - 60	http://www.tensorglobal.com/uploads/products/L71%20SDS.pdf
Tensorgrip L72N	Formulated for bonding vinyl, rubber and plastics	30 – 60	http://www.tensorglobal.com/uploads/products/L72N%20SDS.pdf
Tensorgrip M80AA High Temp Contact Adhesive	Multi-purpose marine adhesive for interior boat outfitting	30 – 80	http://www.tensorglobal.com/uploads/products/M80%20AA%20SDS.pdf
Tensorgrip M80N	Spray contact adhesive formulated for marine applications and interior boat outfitting, bonds with a variety of materials	60 - 100	http://www.tensorglobal.com/uploads/products/M80N%20SDS.pdf
Tensorgrip P300AA High Temp General Purpose Contact Adhesive	General purpose contact adhesive with high temperature resistance	30 – 60	http://www.tensorglobal.com/uploads/products/P300%20AA%20SDS.pdf
Tensorgrip P302 Non-Flam High Temp Contact Adhesive	For foam, insulation, and laminate	60 - 100	http://www.tensorglobal.com/uploads/products/P302%20SDS.pdf
Tensorgrip P305 Non-Flam Pressure Sensitive Adhesive	Pressure-sensitive adhesive	30 – 60	http://www.tensorglobal.com/uploads/products/P305%20SDS.pdf
Tensorgrip P309 Non-Flam Pressure-Sensitive Adhesive	Pressure-sensitive adhesive	60 - 100	http://www.tensorglobal.com/uploads/products/P309%20SDS.pdf
Tensorgrip P310AA Pressure Sensitive Adhesive	High solids, pressure sensitive adhesive	30 – 60	http://www.tensorglobal.com/uploads/products/P310AA%20SDS.pdf
Tensorgrip P311 Non-Flam Pressure Sensitive Adhesive	Medium pressure-sensitive adhesive. For temporary or low-stress permanent bonds	60 - 100	http://www.tensorglobal.com/uploads/products/P311%20SDS.pdf
Tensorgrip P801 Plasticizer Resistant Crosslinking Contact Adhesive	Formulated for bonding vinyl, plastics and other substrates susceptible to plasticizer migration	30 – 60	http://www.tensorglobal.com/uploads/products/P801%20SDS.pdf
Tensorgrip P807 Snowflake Single-Sided Crosslinking Contact Adhesive	Formulated to bond vinyl and rubber without causing plasticizer migration	30 – 60	http://www.tensorglobal.com/uploads/products/P807%20SDS.pdf

Trade name	Use of the product as described in the SDS or the company website	% by weight of chemical	Link to references, SDS or industry information
UT-R20 Hardener	Adhesive/cement hardener	60 – 75	http://rematiptop.com/technical/ind/msds/RTT-IND-012%20Rev.%204%20(UT-R20%20Hardener)%20012914AOM.pdf
Parabond M-363 Seam Sealer	Adhesive	50 - 100	http://www.royaladhesives.com/Files/Parabond/Parabond_M-363_Seam_Sealer_USA_MSDS.pdf
SCIGRIP® 3 Solvent Cement for Acrylic	Solvent cement for bonding acrylics	75 – 90	http://www.scigrip.msdss.com/DocumentCenter.aspx?did=da510bbc-b805-4cf9-8fea-331117aaa49b
SCIGRIP® 4 Solvent Cement for Acrylic	Solvent cement for bonding acrylics	30 - 60	http://www.scigrip.msdss.com/DocumentCenter.aspx?did=f0fb26c6-c00e-4f79-ab3c-d3967e35e2d8
Automotive care products			
IDQ ACP-100	Professional formula refrigerant (20 oz)	<1	http://acprocold.com/wp-content/uploads/2014/03/ACP-100-2015-05.pdf
IDQ ACP-101	Professional formula R-134a refrigerant (14oz)	<1	http://acprocold.com/wp-content/uploads/2014/03/ACP-101-2015-05.pdf
IDQ ACP-102	Professional formula R-134a refrigerant	< 1	http://acprocold.com/wp-content/uploads/2014/03/ACP-102-2015-05.pdf
IDQ ACP-102CA	Professional formula refrigerant refill - California (12 oz)	< 1	http://acprocold.com/wp-content/uploads/2014/03/ACP-102CA-2015-06.pdf
IDQ ACP-105	A/C Pro® refrigerant with stop leak	<1	http://acprocold.com/wp-content/uploads/2014/03/ACP-105-2015-05.pdf
IDQ ACP-110	For cars that were manufactured with R-12 (freon).	<1	http://acprocold.com/wp-content/uploads/2014/03/ACP-110-2016-03.pdf
IDQ ACP-307		<1	http://acprocold.com/wp-content/uploads/2014/03/ACP-307-2015-11.pdf
A/C Pro® Rejuvenator A/C System Treatment	A/C system treatment for older vehicles	<3	http://acprocold.com/wp-content/uploads/2014/03/A-C-Pro-Rejuvenator-AC-System-Treatment-2015-09.pdf
IDQ MRL-3	R-134a A/C leak sealer kit – metal and rubber	<1	http://acprocold.com/wp-content/uploads/2016/07/MRL-3-2015-06.pdf
Carb Medic Carburetor Cleaner (Gunk Carburetor Parts Cleaner chlorinated)	Carburetor cleaner	60 - <70	http://www.rscbrands.com/products/msds/M4814.pdf Reference https://hpd.nlm.nih.gov/cgi-bin/household/search?queryx=75-09-2&tbl=TblChemicals&prodcat=all
Gunk Brake Parts Cleaner -chlorinated	Brake cleaner	40 - <50	http://www.rscbrands.com/products/msds/M720.pdf Reference https://hpd.nlm.nih.gov/cgi-bin/household/search?queryx=75-09-2&tbl=TblChemicals&prodcat=all

Trade name	Use of the product as described in the SDS or the company website	% by weight of chemical	Link to references, SDS or industry information
Gunk Carburetor Parts Cleaner chlorinated	Carburetor cleaner	20 - <30	http://www.rscbrands.com/products/msds/M4814H.pdf Reference https://h]pd.nlm.nih.gov/cgi-bin/household/search?queryx=75-09-2&tbl=TblChemicals&prodcat=all
719 Gasket Remover	Remover	60 – 80	http://www.spraywayinc.com/sites/all/themes/theme687/msds/sw719.pdf Reference https://hpd.nlm.nih.gov/cgi-bin/household/search?queryx=75-09-2&tbl=TblChemicals&prodcat=all
Carbon remover			
Carbon Off	Carbon remover	40 – 70	http://www.questspecialty.com/sds/10619_SDS_QS.pdf
Cleaners			
AlbaChem® Superkleen® S.P.I.F.®	Spot cleaning of apparel and textiles	85 - 95	http://albatross-usa.com/MSDS/1070.pdf
Cal-Blast™ (4132-20)	Coil cleaner	60 - 100	http://www.nucalgon.com/assets/SDS/English/4132-20_SDS_ENG.pdf
Cooley Magic (Eradicating Fluid)	Cleaner	>60	https://www.trivantage.com/itemfiles/pdfs/msds/Eradicating_Fluid_MSDS.pdf
Zep Formula 300	For cleaning electric motors, generators, switches, office machinery, process and production equipment and machinery, tools, automotive electrical components, PC boards, and other water-sensitive damaged parts	>=10 - < 20	https://sds.zepinc.com/ehswww/zep/result/direct_link.jsp?P_LANGU=E&P_SYS=2&P_SSN=11337&C001=MSDS&C002=US&C003=E&C013=111385&C123=SDS*
Developer			
JAD Developer – Aerosol	Liquid developer for use with red and fluorescent penetrants. Usually applied by aerosol or using a compressed airgun to give thin and uniform coverage before being given adequate time to develop.	70 – 90	http://www.johnsonandallen.co.uk/media/files/SDS_JAD-DEVELOPER-AEROSOL_201216.pdf
Insulation			
Surround	Cold pipe insulation	30 – 60	http://questspecialty.com/sds/5880_SDS_QSupdated%20to%20Surround.pdf
No Sweat	Cold pipe insulation	30 – 60	https://www.winzerusa.com/ecat/msds/891_7310_7.pdf
Lithographic			
V-1106 Rejuvenator Plus	Lithographic printing cleaner	44.95	http://www.gwjcompany.com/MSDS/Varn/V-1106%20Rejuvenator%20Plus.pdf http://www.cdph.ca.gov/programs/hesis/Documents/lithoIRTA.pdf

Trade name	Use of the product as described in the SDS or the company website	% by weight of chemical	Link to references, SDS or industry information
Blanket & Roller Wash V-133	Lithographic	15.02	http://printingrollers-parts.com/pdf/msds/Varn/VarnMSDS.pdf (page 42)
Copper Plating Solution	Lithographic	9.94	http://printingrollers-parts.com/pdf/msds/Varn/VarnMSDS.pdf (page 68)
Duplicator Wash	Lithographic	23.34	http://printingrollers-parts.com/pdf/msds/Varn/VarnMSDS.pdf (page 86)
V-1106 Rejuvenator Plus	Lithographic	44.95	http://printingrollers-parts.com/pdf/msds/Varn/VarnMSDS.pdf (page 522)
V-1910 Wash Oxd	Lithographic	10.72	http://printingrollers-parts.com/pdf/msds/Varn/VarnMSDS.pdf (page 525)
Varn Swell	Lithographic	88.5	http://printingrollers-parts.com/pdf/msds/Varn/VarnMSDS.pdf (page 549)
Laboratory use			
Pesticide Analyzer Internal Standard Part 5190-0472	GC/MS	>90	http://www.agilent.com/cs/library/msds/5190-0472_NAEnglish.pdf
5275, H572, H570, H485, H077, 4884, 4883, 4881, 4879	Laboratory, research, or manufacturing use	99 - 100	https://www.avantormaterials.com/Documents/MSDS/USA/SAP/SDS000001398_US_EN.PDF
Composite Unleaded Gasoline Solution	For laboratory use only	90 - 100	http://cdn.chemservice.com/product/msdsnew/External/English/S-CSRGO606%20English%20SDS%20US.pdf
Lubricant			
Fehr Multi-Purpose Lube (Blue)	L6970 Door and operator multi-purpose lubricant	30 – 60	http://www.fehr.com/img/product/description/SDS_Fehr%20Brothers%20MP%20L6970.pdf
Kleenwell	Lubricant	60 - 100	http://lasswell.com/kleenwell-safety-data-sheet
MoliGuard	Dry film lubricant containing molybdenum disulfide.	60 - 100	http://questspecialty.questvapco.com/sds/5440-5441-5449_SDS_QS.pdf
Lubri Dry A	Dry lubricant. Contains colloidal molybdenum disulfide. Adheres to all metals, most plastics, glass and rubber and provides lubrication (aerosol)	60 - 100	http://www.supercoproducts.com/SDS/SDS-LUBRI-DRY-A.pdf

Trade name	Use of the product as described in the SDS or the company website	% by weight of chemical	Link to references, SDS or industry information
Novelty articles (toys, gifts, etc.)			
Red Retro Happy Dippy Drinking Bird		unknown	https://www.amazon.com/Retro-Happy-Dippy-Drinking-Bird/dp/B00GYCI2PI/ref=pd_cp_21_4?_encoding=UTF8&pd_rd_i=B00GYCI2PI&pd_rd_r=QQEDQB63YG7MFVARFZP5&pd_rd_w=VOdds&pd_rd_wg=ySCR7&psc=1&refRID=QQEDQB63YG7MFVARFZP5 https://www.amazon.com/Famous-Lucky-Drinking-Bird-Magic/dp/B00L9ICV8Q/ref=sr_1_216?ie=UTF8&qid=1484589250&sr=8-216&keywords=methylene+chloride https://www.amazon.com/Famous-Lucky-Drinking-Bird-Magic/dp/B00L9ICV8Q/ref=sr_1_216?ie=UTF8&qid=1484589250&sr=8-216&keywords=methylene+chloride
Paint and adhesive removers*			
BIX Stripper	Paint remover	15 – 25	http://www.ilrc.ucf.edu/documents/ILRC%2000000263/MSDS%2000000263.pdf Reference http://www.willmarmn.gov/tips-removing-graffiti
Husky 1229 Vandalism Mark & Stain Remover	Graffiti remover	40 – 60	http://canberracorp.com/sites/files/msds/husky_1229_vndlsm_stn_rmvr.pdf
Vandalism Mark & Stain Remover	Cleaner	40 – 60	http://www.clairemfg.com/sites/all/themes/theme623/msds/c870.pdf Reference https://hpd.nlm.nih.gov/cgi-bin/household/search?queryx=75-09-2&tbl=TblChemicals&prodcat=all
Crown Handi-Strip – Semi paste	Remover	35 – 45	https://web.chempliance.com/MSDS/OpenDoc.ashx?DocID=32210
Crown Handi-Strip Liquid	Remover	45 – 55	https://web.chempliance.com/MSDS/OpenDoc.ashx?DocID=35691
Crown Tuff-Strip Semi-Paste Remover	Remover	65 – 75	https://web.chempliance.com/MSDS/OpenDoc.ashx?DocID=32256
Crown Solu-Strip Adhesive Remover	Adhesive remover	85 – 95	https://web.chempliance.com/MSDS/OpenDoc.ashx?DocID=38254
Ruthless	Paint and varnish remover	40 - 70	http://questspecialty.questvapco.com/sds/5580_SDS_QS.pdf
5F5	Paint remover	65 – 70	http://www.savogran.com/removers.html Reference https://hpd.nlm.nih.gov/cgi-bin/household/search?queryx=75-09-2&tbl=TblChemicals&prodcat=all

Trade name	Use of the product as described in the SDS or the company website	% by weight of chemical	Link to references, SDS or industry information
Liquid Kutzit®	Liquid paint remover	20 – 25	http://www.savogran.com/pdfs/Kutzit_MS.pdf Reference https://hpd.nlm.nih.gov/cgi-bin/household/search?queryx=75-09-2&tbl=TblChemicals&prodcat=all
Strypeeze Original®	Semi-paste paint remover	25 – 30	http://www.savogran.com/pdfs/Strypeeze_Orginal_MS.pdf Reference https://hpd.nlm.nih.gov/cgi-bin/household/search?queryx=75-09-2&tbl=TblChemicals&prodcat=all
Superstrip®	Liquid paint remover	80 – 85	http://www.savogran.com/pdfs/SuperStrip_MS.pdf Reference https://hpd.nlm.nih.gov/cgi-bin/household/search?queryx=75-09-2&tbl=TblChemicals&prodcat=all
39913 Urethane Bumper Stripper	Safely removes refinish materials from flexible parts.	70 - 100	https://www.semproducts.com/manage/html/public/content/msds/39913%20Urethane%20Bumper%20StripperUSA.pdf
XXX Bumper Stripper or 77713 Urethane Bumper Stripper	Aerosol material designed to remove refinish materials from flexible parts	70 - 100	https://www.semproducts.com/manage/html/public/content/msds/77713%20Urethane%20Bumper%20StripperUSA.pdf
SP615 – Heavy Duty Paint Remover (with methylene chloride) – Aerosol	Paint remover	62.04	http://www.paintdocs.com/docs/webPDF.jsp?SITEID=SO&doctype=SDS&prodno=S00615000&lang=2
WL541-Dry Weld spatter Protectant (with methylene chloride) – Aerosol		89.4	http://www.paintdocs.com/docs/webPDF.jsp?SITEID=SO&doctype=SDS&prodno=S00541000&lang=2
WL542 – Wet Weld Spatter Protectant (with methylene chloride) – aerosol		94.4	http://www.paintdocs.com/docs/webPDF.jsp?SITEID=SO&doctype=SDS&prodno=S00542000&lang=2
Zar Paint and Varnish Remover	Paint or varnish remover	60 - 100	http://cleaningandmaintenance.ugl.com/wp-content/uploads/2015/06/Zar-Paint-and-Varnish-Remover-SDS.pdf
Goof Off All Purpose Paint Stripper	Paint/varnish remover	30 - 40	http://www.goofoffproducts.com//uploads/general/FG763_SDS-105.32E.pdf
Goof Off Liquid Stripper	Paint/varnish remover	60 - 100	http://www.goofoffproducts.com//uploads/general/FG767_SDS-31051.7BE.pdf
Goof Off Pro Paint Stripper Aerosol	Paint/varnish remover	70 - 95	http://www.goofoffproducts.com//uploads/general/FG764_SDS-4100B.1F.pdf
Jasco / Bix Varnish & Stain Remover	Paint/varnish remover	25 - 40	http://www.jasco-help.com/uploads/documents/GJBV00103_SDS-104.2.pdf
Jasco Spray On Stripper	Paint/varnish remover	25 - 40	http://www.jasco-help.com/uploads/documents/GJBS00213_SDS-31053.1.pdf

Trade name	Use of the product as described in the SDS or the company website	% by weight of chemical	Link to references, SDS or industry information
Klean Strip Adhesive Remover / Klean Strip Premium Stripper (Goof Off Pro Paint Stripper / Goof Off Adhesive Remover) (GO Semi-Paste Pro Stripper, GO Pro Strength Adhesive Remover) (Jasco Premium Paint & Epoxy Remover)	Removal of adhesives, mastics and contact cement from wood, concrete, metal and masonry	60 - 100	http://www.kleanstrip.com/uploads/documents/GKAS94326_SDS-4015.34.pdf http://www.goofoffproducts.com//uploads/general/FG761_SDS-4015.34F.pdf http://www.jasco-help.com/uploads/documents/GJBP00203_SDS-4015.34E.pdf
Klean Strip Aircraft Low Odor Paint Remover	Paint/varnish remover	80 - 90	http://www.wmbarr.com/msds.aspx?catid=16
Klean Strip Aircraft Paint Remover (also in aerosol)	Remove a wide range of finishes from the metal surfaces of automobiles, trucks and cycles	60 - 100	http://www.kleanstrip.com/uploads/documents/GAR343_SDS-3404.18.pdf
Klean Strip Aircraft Paint Remover for Flexible Plastic	Strips paint from flexible automotive parts	60 - 100	http://www.wmbarr.com/msds.aspx?catid=16
Klean Strip Brush Cleaner (Jasco Brush Cleaner)	Clean up of natural and synthetic paint brushes	<1	http://www.kleanstrip.com/uploads/documents/GBC12_SDS-805.18.pdf http://www.jasco-help.com/uploads/documents/GJBC200_SDS-805.18D.pdf
Klean Strip Color Change Stripper		40 - 60	http://www.kleanstrip.com/uploads/documents/GKCC00326_SDS-4014.9.pdf
Klean Strip Fiberglass Paint Remover	Paint/varnish remover	10 - 30	http://www.wmbarr.com/msds.aspx?catid=16
Klean Strip Klean Kutter	Strips varnish, lacquer, shellac and polyurethane from all types of wood	25 - 35	http://www.kleanstrip.com/uploads/documents/QKK5.1_SDS-130.3.pdf
Klean Strip Naked Gun Spray Gun Paint Remover	Spray gun cleaning	30 - 60	http://www.kleanstrip.com/uploads/documents/GSG14_SDS-35M.8.pdf
Klean Strip Peeler	Basecoat and clearcoat remover	60 - 100	http://www.kleanstrip.com/uploads/documents/EFS459_SDS-A223B.1.pdf
Klean Strip Premium Sprayable Stripper	Paint/varnish remover	60 - 100	http://www.kleanstrip.com/uploads/documents/GKS221_SDS-31051.7B.pdf

Trade name	Use of the product as described in the SDS or the company website	% by weight of chemical	Link to references, SDS or industry information
Klean Strip Premium Stripper (aerosol) (Goof Off Pro Paint Stripper Aerosol) (Jasco Premium Paint & Epoxy Remover Aerosol)	Paint/varnish remover	70 - 95	http://www.kleanstrip.com/uploads/documents/ESR72_SDS-4100B.1.pdf http://www.goofoffproducts.com//uploads/general/FG764_SDS-4100B.1F.pdf http://www.jasco-help.com/uploads/documents/EJBP00206_SDS-4100B.1E.pdf
Klean Strip X Stripper	Paint remover	30 – 40	http://www.kleanstrip.com/uploads/documents/GSX6_SDS-105.32.pdf Reference https://hpd.nlm.nih.gov/cgi-bin/household/search?queryx=75-09-2&tbl=TblChemicals&prodcat=all
KWIK Liquid No Wash	Paint/varnish remover	20 - 30	http://www.wmbarr.com/msds.aspx?catid=15
KWIK Marine Paint & Varnish Remover	Removes tough finishes, marine paints, and marine varnishes	60 - 100	http://www.wmbarr.com/msds.aspx?catid=15
Sealant			
Universal Blue	Can be used to replace a traditional gasket or to “dress” it to significantly improve the performance of the gasket	25 - 65	http://hylomar.com/warrick/wp-content/uploads/2013/10/Universal-BlueAerograde-PL32-–Light-Medium-and-Heavy-Grades-SDS_US-English.pdf
101MA Copper Spray-A-Gasket 9 OZ	Metallic copper sealant. Fills minor surface irregularities. Resists automotive fluids, especially gasoline	10 - 30	https://www.permatex.com/wp-content/uploads/tech_docs/sds/01_USA-English/80697.pdf
Solvents			
Blowout	Super compressed gas and solvent for evaporators	60 - 100	http://www.vapcoproducts.com/sds/BLO-SDS-Blowout-Aerosol.pdf
Welding			
Nozzle Kleen #2 Aerosol	Anti-spatter aerosol	>90	http://www.weldaid.com/docs/7022-Nozzle_Kleen_Aerosol(2014).pdf
Radnor Solvent Based Anti-Spatter (Bulk)	Anti-spatter prevents/limits spatter build-up and adhesion	>90	http://www.airgas.com/msds/004118.pdf

Note:

* In January 2017, EPA proposed prohibitions on the use of methylene chloride in commercial and consumer paint and coating removal (82 FR 7464).

4. Distribution

Based on information reported to TRI for 2015, eight facilities manufacture methylene chloride for sale or distribution. Based on information reported to CDR for 2016, there are four facilities manufacturing methylene chloride for wholesale and retail trade.

Some of the products listed above are also available for purchase on line or at retailers. The table below provides some examples of the distributors of the products available. This list is provided for informational purposes only. EPA and its employees do not endorse any of the products or companies.

Table 2. Examples of Products Containing Methylene Chloride Available for Purchase by Consumers

Products	Description and price	References
CAMIE 313B	Upholstery adhesive 1 gal ($32.86)	https://krayden.com/buy/manufacturers/camie/camie-313-b-red-gallon-ca313bglrd.html
Universal Blue	3.5 oz ($31), 12.5 oz ($59.50)	http://www.hylomarsealant.com/_resources/_html/order.html
101MA Copper Spray-A-Gasket	12 oz ($8.49)	http://www.autozone.com/sealants-glues-adhesives-and-tape/gasket-sealant/permatex-9-oz-aerosol-can-copper-spray-a-gasket-hi-temp-adhesive-sealant/520940_0_0/
Cal-Blast™ (4132-20)	20 oz spray ($19.80, $17.18)	https://www.mccombssupply.com/4132-20-nu-calgon-cal-blast-condenser-air-conditioner-coil-cleaner-20-oz-spray/ https://www.bakerdist.com/nu-calgon-4132-20-cal-blast-aerosol-nu413220-14932 (Discontinued in 2012: http://www.supplyhouse.com/Nu-Calgon-4132-20-Cal-Blast-Aerosol-Can-20-oz)
Radnor	Solvent based anti-spatter (Bulk) 1 gallon ($34.35)	http://www.airgas.com/product/Welding-Products/Welding-Support-Equipment/Chemicals---Spatters-%26-Gels/p/RAD64000104
Gunk Carburetor Parts Cleaner	Chlorinated 19 oz ($6.00), 12.5 oz ($3.98) and 6 oz ($4.22)	http://www.gunk.com/products/cat_det.asp http://www.gunk.com/products/cat_det.asp
Gunk Brake Parts Cleaner	Chlorinated 19 oz ($4.72)	http://www.gunk.com/products/cat_det.asp
39913 Urethane Bumper Stripper	17 oz ($14.71, $18.22, $23.75)	https://www.amazon.com/SEM-39913-Urethane-Bumper-Stripper/dp/B000I1NWGA
XXX Bumper Stripper	12 oz ($8.33)	https://www.amazon.com/SEM-77713-XXX-Bumper-Stripper/dp/B003TQH91A
Vandalism Mark & Stain Remover	20 oz can	http://clairemfg.com/content/vandalism-mark-stain-remover
SP615 – Heavy Duty Paint Remover	With methylene chloride – aerosol	http://www.sprayon.com/product-categories/industrial-specialty-products/heavy-duty-paint-remover-with-methylene-chloride-aerosol-sp615
Zar Paint and Varnish Remover		http://cleaningandmaintenance.ugl.com/?page_id=12#/zar-paint-and-varnish-remover
Nozzle Kleen #2	Aerosol 16 oz ($8.54)	https://www.grainger.com/product/WELD-AID-Nozzle-Kleen-2-Aerosol-Spray-24A407
Zep Formula 300	1 case of 4 gallons ($178.29)	https://associatedfuelsystems.com/product/zep-formula-300-1case/

5. Use

Use at Industrial Sites

Data submitted to CDR for the 2016 reporting period include the following uses of methylene chloride at industrial sites:

- As a reactant
- Incorporated into formulation, mixture, or reaction product
- Repackaging
- Used as non-incorporative activity (e.g. as a chemical processing or manufacturing aid)

Data submitted to CDR for the 2016 reporting period and TRI for the 2015 reporting period include the sectors listed in Table 3 as using methylene chloride.

Table 3. List of sectors reporting using methylene chloride

NAICS Code	NAICS Title	Rational for inclusion of NAICS
211 and 213	Oil and Gas Drilling, Extraction, and Support Activities	2016 CDR reporting
212393	Other Chemical and Fertilizer Mineral Mining	2015 TRI reporting
221112	Fossil Fuel Electric Power Generation	2015 TRI reporting
313320	Fabric Coating Mills	2015 TRI reporting
322110	Pulp Mills	2015 TRI reporting
324191	Petroleum Lubricating Oil and Grease Manufacturing	2015 TRI reporting
325110	Petrochemical Manufacturing	2015 TRI reporting
325120	Industrial Gas Manufacturing	2015 TRI reporting
32518	All Other Basic Inorganic Chemical Manufacturing	2016 CDR reporting 2015 TRI reporting
32519	All Other Basic Organic Chemical Manufacturing	2016 CDR reporting
325193	Ethyl Alcohol Manufacturing	2015 TRI reporting
325194	Cyclic Crude, Intermediate, and Gum and Wood Chemical Manufacturing	2015 TRI reporting
325199	All Other Basic Organic Chemical Manufacturing	2015 TRI reporting
325211	Plastic Material and Resin Manufacturing	2016 CDR reporting
325220	Artificial and Synthetic Fibers and Filaments Manufacturing	2015 TRI reporting
3253	Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing	2016 CDR reporting
325320	Pesticide and Other Agricultural Chemical Manufacturing	2015 TRI reporting
3254	Pharmaceutical and Medicine Manufacturing	2016 CDR reporting
325411	Medicinal and Botanical Manufacturing	2015 TRI reporting
325412	Pharmaceutical Preparation Manufacturing	2015 TRI reporting
325413	In-Vitro Diagnostic Substance Manufacturing	2015 TRI reporting
32551	Paint and Coating Manufacturing	2016 CDR reporting 2015 TRI reporting
325211	Plastics material and resin manufacturing	2015 TRI reporting
32552	Adhesive Manufacturing	2016 CDR reporting 2015 TRI reporting
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	2016 CDR reporting
325611	Soap and Other Detergent Manufacturing	2015 TRI reporting

NAICS Code	NAICS Title	Rational for inclusion of NAICS
325612	Polish and Other Sanitation Good Manufacturing	2015 TRI reporting
325998	All Other Chemical Product and Preparation Manufacturing	2016 CDR reporting 2015 TRI reporting
3261	Plastics Product Manufacturing	2016 CDR reporting
326122	Plastics Pipe and Pipe Fitting Manufacturing	2015 TRI reporting
326150	Flexible Polyurethane Foam Fabrication Operations	2015 TRI reporting
326199	All Other Plastics Product Manufacturing	2015 TRI reporting
327310	Cement Manufacturing	2015 TRI reporting
327992	Ground or Treated Mineral and Earth Manufacturing	2015 TRI reporting
331420	Copper Rolling, Drawing, Extruding, and Alloying	2015 TRI reporting
331492	Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except Copper and Aluminum)	2015 TRI reporting
332119	Metal Crown, Closure, and Other Metal Stamping (except Automotive)	2015 TRI reporting
332439	Other Metal Container Manufacturing	2015 TRI reporting
332710	Machine Shops	2015 TRI reporting
332721	Precision Turned Product Manufacturing	2015 TRI reporting
332722	Bolt, Nut, Screw, Rivet, and Washer Manufacturing	2015 TRI reporting
332812	Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	2015 TRI reporting
332813	Electroplating, Plating, Polishing, Anodizing, and Coloring	2015 TRI reporting
332911	Industrial Valve Manufacturing	2015 TRI reporting
332993	Ammunition (except Small Arms) Manufacturing	2015 TRI reporting
332999	All Other Miscellaneous Metal Product Manufacturing	2015 TRI reporting
333314	Optical Instrument and Lens Manufacturing	2015 TRI reporting
333316	Photographic and Photocopying Equipment Manufacturing	2015 TRI reporting
333414	Heating Equipment (except Warm Air Furnaces) Manufacturing	2015TRI reporting
333514	Special Die and Tool, Die Set, Jig, and Fixture Manufacturing	2015 TRI reporting
333999	All Other Miscellaneous General Purpose Machinery Manufacturing	2015 TRI reporting
334516	Analytical Laboratory Instrument Manufacturing	2015 TRI reporting
334517	Irradiation Apparatus Manufacturing	2015 TRI reporting
335	Electrical Equipment, Appliance, and Component Manufacturing	2016 CDR reporting
33637	Motor Vehicle Metal Stamping	2015 TRI reporting
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing	2015 TRI reporting
339	Miscellaneous Manufacturing	2016 CDR reporting
339112	Surgical and medical instrument manufacturing	2015 TRI reporting
339113	Surgical Appliance and Supplies Manufacturing	2015 TRI reporting
339910	Jewelry and Silverware Manufacturing	2015 TRI reporting
33992	Supporting and Athletic Goods Manufacturing	2015 TRI reporting
42, 44, 45, 48 and 49	Wholesale and Retail Trade	2016 CDR reporting
424690	Other Chemical and Allied Products Merchant Wholesalers	2015 TRI reporting
424710	Petroleum Bulk Stations and Terminals	2015 TRI reporting

NAICS Code	NAICS Title	Rational for inclusion of NAICS
51, 52, 53, 54, 55, 56, 61, 62, 71, 72, 81 and 92	Services	2016 CDR reporting
562211	Hazardous waste treatment and disposal	2015 TRI reporting
562213	Solid waste combustors and incinerators	2015 TRI reporting
562920	Materials recovery facilities	2015 TRI reporting
928110	National Security	2015 TRI reporting

Uses of methylene chloride that have been identified at industrial sites include:

- Adhesives and sealant chemicals
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Industry-Uses
- Agent in urethane foam blowing
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Use-and-Manufacturing
- Carrier solvent in the textile industry
  Source: Holbrook MT; Methylene Chloride. Ullmann's Encyclopedia of Industrial Chemistry 7th ed. (1999-2014). NY, NY: John Wiley & Sons. Online Posting Date: August 15, 2003 (From HSDB database) https://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+hsdb:@term+@DOCNO+66
- Extraction solvent for spice oleoresins and hops
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Use-and-Manufacturing
- Film processing
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Consumption
- Industrial and precision cleaning
  Source: http://www.cdph.ca.gov/programs/hesis/Documents/methylenechloride.pdf
- Intermediate
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Industry-Uses
- Laboratory chemicals
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Industry-Uses
- Leather tanning and processing
  Source: https://hazmap.nlm.nih.gov/category-details?table=copytblagents&id=12
- Low pressure refrigerants, air-condition installations and a low temperature heat-transfer medium
  Source: Holbrook MT; Methylene Chloride. Ullmann's Encyclopedia of Industrial Chemistry 7th ed. (1999-2014). NY, NY: John Wiley & Sons. Online Posting Date: August 15, 2003 (From HSDB database) https://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+hsdb:@term+@DOCNO+66
- Metal cleaning and finishing solvent in electronics manufacturing
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Use-and-Manufacturing
- Metal degreasing
  Source: https://hazmap.nlm.nih.gov/category-details?table=copytblagents&id=12
- Miscellaneous solvent uses and other applications
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Consumption
- Other industrial chemical processing
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Consumption

- Painting (solvents)
  Source: https://hazmap.nlm.nih.gov/category-details?table=copytblagents&id=12
- Paint additives and coating additives not described by other categories
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Industry-Uses
- Plastic processing
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Consumption
- Printing press cleaning
  Source: http://www.cdph.ca.gov/programs/hesis/Documents/methylenechloride.pdf
- Processing aids, specific to petroleum production
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Industry-Uses
- Propellants and blowing agents
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Industry-Uses
- Solvent for cleaning or degreasing
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Industry-Uses
- Solvent for fiber and plastic
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Consumption
- Solvent in cements for clear plastics and is often blended with other solvents to help dissolve the resin used in contact adhesives
  Source: Holbrook MT; Methylene Chloride. Ullmann's Encyclopedia of Industrial Chemistry 7th ed. (1999-2014). NY, NY: John Wiley & Sons. Online Posting Date: August 15, 2003 (From HSDB database) https://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+hsdb:@term+@DOCNO+66
- Solvent in the manufacture of drugs, pharmaceuticals, and film coatings
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Use-and-Manufacturing
- Solvent in the production of cellulose-acetate-based or cellulose-acetobutyrate-based films
  Source: Stoye D; Solvents. Ullmann's Encyclopedia of Industrial Chemistry 7th ed. (1999-2014). NY, NY: John Wiley & Sons. Online Posting Date: June 15, 2000 (From HSDB database)
  https://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+hsdb:@term+@DOCNO+66
- Solvent which become part of product formulation or mixture
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Industry-Uses

Commercial Uses

Data submitted to CDR for the 2016 reporting period include the following commercial uses:

- Cleaning and Furniture Care Products
- Adhesives and sealants
- Paintings and coatings
- Metal products not covered elsewhere
- Plastic and rubber products
- Automotive care products
- Lubricants and greases
- Other
- CBI

The 2014 Risk Assessment of methylene chloride for paint remover uses identifies the following uses:

- Feedstock of refrigerant HFC-32 (Hydrofluorocarbon-32)
- Process solvent for cellulose acetate
- Plastics processing
  - Welding of plastic parts
  - Production of thermoplastics
- Industrial extraction solvent
- Chemical processor for photographic film

Source: https://www.epa.gov/sites/production/files/2015-09/documents/dcm_opptworkplanra_final.pdf

Other commercial uses reported:

- Lithographic printing
  Source: https://hazmap.nlm.nih.gov/category-details?table=copytblagents&id=12
- Paint stripping and removers
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Use-and-Manufacturing
- Propellant in aerosols for products such as paints, automotive products and insect sprays
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Use-and-Manufacturing
- Taxidermy
  Source: https://hazmap.nlm.nih.gov/category-details?table=copytblagents&id=12
- Sculpting plastics
  Source: https://hazmap.nlm.nih.gov/category-details?table=copytblagents&id=12
- Woodworking
  Source: https://hazmap.nlm.nih.gov/category-details?table=copytblagents&id=12

Based on the list of products above (Table 1), uses of methylene chloride include:

- Adhesives
- Automobile products, including brake cleaners, carburetor cleaners and refrigerants
- Carbon remover
- Cleaners
- Developer
- Insulation
- Lithographic uses, including cleaners
- Laboratory use
- Lubricant
- Paint and adhesive remover
- Sealant
- Anti-spatter in welding

In the database for the Washington State Children's Safe Products Act, manufacturers report methylene chloride used as a solvent in synthetic polymer components of children's products, including toys, dolls, and clothing articles.

Description of Consumer Uses

Data submitted to CDR for the 2016 reporting period include the following consumer uses:

- Adhesives and sealants (not known or reasonable ascertainable if consumer use)
- Paintings and coatings
- Toys, playground and sporting equipment (consumer)
- CBI

The market profile developed for the 2014 Work Plan Chemical Risk Assessment of methylene chloride in paint removers identified the following consumer uses:

- Paint Strippers
    - Paint thinners
    - Paint removers and strippers
    - Varnish removers
    - Graffiti removers
- Aerosol Applications
    - Aerosol paints
    - Automotive products
    - Rust removers
    - Primers
- Cleaners/Protectors
    - Water repellant/protectors
    - Spot removers
    - Specialized electronic cleaners
    - Wood stains
    - Transmission cleaners
    - Battery terminal protector
    - Brake quieter/cleaner
    - Gasket remover
- Adhesives
    - Contact cement
    - Super glues
    - Spray adhesives
    - Adhesive remover
- Miscellaneous
    - Silicone lubricants
    - Outdoor water repellants
    - Herbicides

Source: https://www.epa.gov/sites/production/files/2015-09/documents/dcm_opptworkplanra_final.pdf

Consumer uses reported by other sources include:

- Adhesives and sealants
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Consumer-Uses

- Automotive care products
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Consumer-Uses
- Metal products not covered elsewhere
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Consumer-Uses
- Paints and coatings
  Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Consumer-Uses
- One article, a toy, contains methylene chloride.

While the products that contain methylene chloride seem to be intended for industrial or commercial use, may be available for consumers (see Table 1 and Table 2).

Past and Potential Other Uses

Based on work by the National Institutes of Occupational Health and Safety at industrial sites in the 1990s, past and potential uses of methylene chloride may include:

- Polymer additive manufacturing facility
- Microelectronics and business machine manufacturing facility
- Adhesive of plexiglas
- Making of cabinets
- Offset printing
- Lithographic printing
- Gift, novelties and souvenirs shop (including copper-based novelty gifts)

In addition, methylene chloride was reported as used in the removal of caffeine from coffee; however, due to concern over residual solvent, most decaffeinators no longer use methylene chloride
Source: https://pubchem.ncbi.nlm.nih.gov/compound/6344#section=Use-and-Manufacturing

6. Disposal of Waste and Recycling/Recovery

Methylene chloride is classified as U080 waste (A toxic waste when a discarded commercial chemical product or manufacturing chemical intermediate or an off-specification commercial chemical product or manufacturing chemical intermediate).

According to information submitted to TRI, in 2015, 746,935 pounds of methylene chloride were transferred offsite to landfills and/or other treatment/disposal facilities and 2,645,010 pounds were released to air, water, and land.

USEFUL TYPES OF INFORMATION

This document presents a summary of information currently available to EPA on this chemical. To more fully characterize the manufacturing, processing, distribution, disposal, and use of this chemical, and to inform the development of the scoping document for this chemical, EPA is interested in obtaining information on:

- the functional uses for this chemical;
- what types of products contain this chemical;
- which industry sectors use this chemical;
- what volume of the chemical is used;
- which uses have been discontinued or phased out;
- exposure scenarios for this chemical; and
- in which articles this chemical is found.

APPENDIX: SOURCES CONSULTED

- U.S. EPA *Chemical Inventory*
  https://www.epa.gov/tsca-inventory
- U.S. EPA *ChemView*
  https://java.epa.gov/chemview
- TRI P2 information
  https://www.epa.gov/toxics-release-inventory-tri-program/pollution-prevention-p2-and-tri
- U.S. EPA *HPV HC* (access through Chemical Data Access Tool – CDAT)
  https://java.epa.gov/oppt_chemical_search/
- U.S. EPA *HPVIS* and *HPV HC* (access through Chemical Data Access Tool – CDAT)
  https://java.epa.gov/oppt_chemical_search/
- DfE Alternatives Assessments
  https://www.epa.gov/saferchoice/design-environment-alternatives-assessments
- Safer Chemical Ingredients List
  https://www.epa.gov/saferchoice/safer-ingredients
- Green Chemistry awards
  https://www.epa.gov/greenchemistry/presidential-green-chemistry-challenge-winners
- Greener products and services
  https://www.epa.gov/greenerproducts/identify-greener-products-and-services
- Pollution Prevention
  https://www.epa.gov/p2/pollution-prevention-case-studies
  https://www.epa.gov/p2/grant-programs-pollution-prevention#sra
  https://www.epa.gov/p2/pollution-prevention-tools-and-calculators
- U.S. EPA *InertFinder*
  https://iaspub.epa.gov/apex/pesticides/f?p=101:1:
- U.S. EPA *Pesticide Chemical Search*
  https://iaspub.epa.gov/apex/pesticides/f?p=CHEMICALSEARCH:1:0::NO:1::
- U.S. EPA *Endocrine Disruptor Screening Program*
  https://www.epa.gov/ingredients-used-pesticide-products/endocrine-disruptor-screening-program-tier-1-assessments
- U.S. EPA *Hazardous Waste*
  https://www.epa.gov/hw/learn-basics-hazardous-waste#regulations
- U.S. EPA *Superfund chemical data matrix*
  https://www.epa.gov/superfund/superfund-chemical-data-matrix-scdm-query
- U.S. EPA *Hazardous Air Pollutants*
  https://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications
- U.S. EPA *Significant New Alternatives Policy (SNAP)*
  https://www.epa.gov/snap
- U.S. EPA *Volatile Organic Compounds*
  https://www.epa.gov/indoor-air-quality-iaq/technical-overview-volatile-organic-compounds#definition
- U.S. EPA *Toxic and priority pollutants under the Clean Water Act*
  https://www.epa.gov/eg/toxic-and-priority-pollutants-under-clean-water-act#toxic

- U.S. EPA *Contaminant Candidate list under the Safe Drinking Water Act*
  https://www.epa.gov/ccl/contaminant-candidate-list-3-ccl-3#chemical-list
- U.S. EPA *IRIS Assessment*
  https://cfpub.epa.gov/ncea/iris2/atoz.cfm
- U.S. EPA *SRS*
  https://iaspub.epa.gov/sor_internet/registry/substreg/searchandretrieve/substancesearch/search.do
- U.S. EPA *Chemical and Product Categories (CPCat) Database*
  https://actor.epa.gov/cpcat/faces/home.xhtml
- U.S. National Library of Medicine *ChemIDplus*
  https://chem.sis.nlm.nih.gov/chemidplus/
- U.S. National Library of Medicine *Hazardous Substance Data Bank (HSBD)*
  https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm
- U.S. Department of Health & Human Services *Household Products Database*
  https://hpd.nlm.nih.gov/index.htm
- OSHA *Chemical Hazards and Toxic Substances*
  https://www.osha.gov/SLTC/hazardoustoxicsubstances/index.html
- NIOSH Workplace Safety and Health Topics *Chemicals*
  http://www.cdc.gov/niosh/topics/chemical.html
- NIOSH *Pocket Guide to Chemical Hazards*
  http://www.cdc.gov/niosh/npg/npgdcas.html
- CPSC *Chemicals*
  http://www.cpsc.gov/en/Research--Statistics/Chemicals/
- CPSC *FHSA*
  https://www.cpsc.gov/Business--Manufacturing/Business-Education/Business-Guidance/FHSA-Requirements/
- Food and Drug Administration *List of Databases*
  http://www.fda.gov/ForIndustry/FDABasicsforIndustry/ucm234631.htm
- NTP (National Toxicology Program) *Substances studied by NTP*
  http://ntpsearch.niehs.nih.gov/?e=True&ContentType=Testing+Status
- Department of Energy *Protective Action Criteria Database*
  http://energy.gov/ehss/protective-action-criteria-pac-aegls-erpgs-teels-rev-29-chemicals-concern-may-2016
- California Department of Toxic Substances Control *Toxics in Products*
  http://www.dtsc.ca.gov/PollutionPrevention/ToxicsInProducts/index.cfm
  http://www.dtsc.ca.gov/SCP/CandidateChemicalsList.cfm
  http://www.dtsc.ca.gov/SCP/WhatIsAPriorityProduct.cfm
- California Office of Environmental Health Hazard Assessment *Proposition 65*
  http://oehha.ca.gov/proposition-65/chemicals
  http://oehha.ca.gov/proposition-65/proposition-65-list
- California Office of Environmental Health Hazard Assessment *Biomonitoring*
  http://biomonitoring.ca.gov/chemicals
- California *permissible exposure limits for chemical contaminants*
  https://www.dir.ca.gov/title8/5155table_ac1.html

- California *hazardous substance list*
  https://www.dir.ca.gov/title8/339.html
- California *Safe Cosmetics Program – list of chemical agents known or suspected to cause cancer or developmental or other reproductive harm.*
  http://www.cdph.ca.gov/programs/cosmetics/Pages/default.aspx
  https://safecosmetics.cdph.ca.gov/search/Default.aspx
- Maine *chemicals of high concern*
  http://www.maine.gov/dep/safechem/highconcern/
- Massachusetts *Toxics Use Reduction Act (TURA) (link includes a link to Higher hazard substances list)*
  http://www.mass.gov/eea/waste-mgnt-recycling/toxics/toxic-use-reduction/toxics-use-reduction-act/
- Massachusetts *Complete list of TURA chemicals*
  http://www.mass.gov/eea/agencies/massdep/toxics/tur/toxics-use-reduction-act-tura-reporting-and-fees.html
- Lowell Center for Sustainable Production *Chemical, Policy and Science Initiative*
  http://www.chemicalspolicy.org/chemicalspolicy.us.state.database.php
- Minnesota Department of Health *Toxic Free Kids Act Chemicals of High Concern*
  http://www.health.state.mn.us/divs/eh/hazardous/topics/toxfreekids/highconcern.html
- Michigan *Environmental Health Topics*
  http://www.michigan.gov/mdhhs/0,5885,7-339-71548_54783_54784_74881-13050--,00.html
- New Hampshire *Regulated Toxic Air Pollutants*
  http://des.nh.gov/organization/commissioner/legal/rules/documents/env-a1400.pdf
- New Jersey *Right to Know Hazardous Substances*
  http://web.doh.state.nj.us/rtkhsfs/rtkhsl.aspx
- Oregon *Priority Persistent Pollutants (in water)*
  http://www.deq.state.or.us/wq/SB737/
- Oregon *Pollutant Profiles*
  http://www.deq.state.or.us/wq/SB737/docs/LegRpAtt420100601.pdf
- Oregon *Reducing Toxics in Oregon*
  http://www.oregon.gov/deq/Pages/ToxicsReduction.aspx
- Oregon *Chemicals of Concern for Children's Health*
  http://public.health.oregon.gov/HealthyEnvironments/HealthyNeighborhoods/ToxicSubstances/Pages/childrens-chemicals-of-concern.aspx
- Pennsylvania Department of Labor and Industry *Hazardous Substance List*
  http://www.pacode.com/secure/data/034/chapter323/chap323toc.html
- Rhode Island *Air Resources – Air Toxics*
  http://www.dem.ri.gov/pubs/regs/regs/air/air22_08.pdf
- Vermont *Chemical Disclosure Program for Children's Products*
  http://www.healthvermont.gov/enviro/chemical/cdp.aspx
- Washington *Chemicals of High Concern to Children*
  http://www.ecy.wa.gov/programs/hwtr/rtt/cspa/chcc.html
- Washington *Children's Safe Products Act*
  http://apps.leg.wa.gov/RCW/default.aspx?cite=70.240

- Washington Department of Labor & Industries *SHARP Publications*
  http://www.lni.wa.gov/Safety/Research/Pubs/default.asp
- National Conference of State Legislatures
  http://www.ncsl.org/research/environment-and-natural-resources/state-chemical-statutes.aspx
- Canada *Chemicals Portal*
  http://chemicalsubstanceschimiques.gc.ca/index-eng.php
- EU *ECHA website*
  https://echa.europa.eu/
- Australia *NICNAS Chemical Information*
  https://www.nicnas.gov.au/chemical-information
- Japan *Chemical Risk Information Platform (CHIRP)*
  http://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop
- OECD *eChemPortal*
  http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- Stockholm Convention on Persistent Organic Pollutants
  http://chm.pops.int/TheConvention/ThePOPs/ListingofPOPs/tabid/2509/Default.aspx
  http://chm.pops.int/TheConvention/ThePOPs/ChemicalsProposedforListing/tabid/2510/Default.aspx
- WHO IPCS (UN)
  http://www.who.int/ipcs/en/
- Other – worker protection information
  http://www.dguv.de/ifa/gestis/gestis-internationale-grenzwerte-fuer-chemische-substanzen-limit-values-for-chemical-agents/index-2.jsp
- DeLima Associates *Consumer Product Information Database (CPID)*
  https://www.whatsinproducts.com/chemicals/index/1
- SRC *FatePointers Search Module PHYSPROP*
  http://esc.syrres.com/fatepointer/search.asp
- Product and company websites