



1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 11/21/2013 Revision date: 5/11/2023 Supersedes: 8/21/2015 Version: 3.2

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : 1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS
CAS-No. : 79-34-5
Product code : DLM-35TB
Formula : C2H2Cl4

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Cambridge Isotope Laboratories, Inc.
50 Frontage Rd
01810
ANDOVER, MA, 01810
USA
T 1-800-322-1174
cilsales@isotope.com - www.isotope.com

1.4. Emergency telephone number

Emergency number : 1-703-741-5970
Chemtrec 1-800-424-9300 24 hours

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Flammable liquids Category 1	H224	Extremely flammable liquid and vapor
Acute toxicity (oral) Category 3	H301	Toxic if swallowed
Acute toxicity (dermal) Category 1	H310	Fatal in contact with skin
Acute toxicity (inhalation) Category 2	H330	Fatal if inhaled
Hazardous to the aquatic environment – Chronic Hazard Category 2	H411	Toxic to aquatic life with long lasting effects

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Danger
Hazard statements (GHS US) : H224 - Extremely flammable liquid and vapor
H301 - Toxic if swallowed
H310+H330 - Fatal in contact with skin or if inhaled
H411 - Toxic to aquatic life with long lasting effects

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Precautionary statements (GHS US) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. heat, hot surfaces, open flames, sparks
P233 - Keep container tightly closed.
P240 - Ground/Bond container and receiving equipment.
P241 - Use explosion-proof electrical, lighting, ventilating equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P260 - Do not breathe dust, fume, gas, mist, spray, vapors.
P262 - Do not get in eyes, on skin, or on clothing.
P264 - Wash Both hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P280 - Wear protective clothing, protective gloves.
P284 - [In case of inadequate ventilation] wear • Respiratory protection.
P301+P310 - If swallowed: Immediately call a doctor.
P302+P352 - If on skin: Wash with plenty of water.
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.
P310 - Immediately call a doctor.
P320 - Specific treatment is urgent (see Hazard pictograms (CLP) on this label).
P321 - Specific treatment (see Hazard pictograms (CLP) on this label).
P322 - Specific treatment (see supplemental first aid instruction on this label)
P330 - Rinse mouth.
P361+P364 - Take off immediately all contaminated clothing and wash it before reuse.
P370+P378 - In case of fire: Use media other than water to extinguish.
P391 - Collect spillage.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to Comply with applicable regulations.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%)	CAS-No.: 79-34-5	99.5	Acute Tox. 3 (Oral), H301 Acute Tox. 1 (Dermal), H310 Acute Tox. 2 (Inhalation), H330 Aquatic Chronic 2, H411
TETRAMETHYLSILANE 99.9%	CAS-No.: 75-76-3	0.05	Flam. Liq. 1, H224

Full text of hazard classes and H-statements : see section 16

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SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
First-aid measures after inhalation	: If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
First-aid measures after skin contact	: Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
First-aid measures after eye contact	: Flush eyes with water as a precaution.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms	: Headache, Nausea, Vomiting, Tremors, Incoordination, Fatigue, Dizziness, Anorexia. Blood - Irregularities - Based on Human Evidence. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Symptoms/effects after inhalation	: Fatal if inhaled.
Symptoms/effects after skin contact	: Fatal in contact with skin.
Symptoms/effects after eye contact	: May cause eye irritation.
Symptoms/effects after ingestion	: Toxic if swallowed.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.
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5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire	: Carbon oxides (CO, CO ₂). hydrogen chloride.
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5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	: Wear self contained breathing apparatus for fire fighting if necessary.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures	: Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
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6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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6.3. Methods and material for containment and cleaning up

- For containment : Clean up any spills as soon as possible, using an absorbent material to collect it. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. For large spills, confine the spill in a dike and charge it with wet sand or earth for subsequent safe disposal.
- Methods for cleaning up : This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Provide adequate ventilation to minimize dust and/or vapor concentrations.
- Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Store in a well-ventilated place. Keep container tightly closed.
- Storage conditions : Store at room temperature away from light and moisture.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS (79-34-5)

USA - ACGIH - Occupational Exposure Limits

Local name	1,1,2,2-Tetrachloroethane
ACGIH OEL TWA [ppm]	1 ppm Basis: USA. ACGIH Threshold Limit Values (TLV) Remarks: Liver damage. Confirmed animal carcinogen with unknown relevance to humans. Danger of cutaneous absorption.
Remark (ACGIH)	TLV® Basis: Liver dam. Notations: Skin; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
Regulatory reference	ACGIH 2022

USA - OSHA - Occupational Exposure Limits

Local name	1,1,2,2-Tetrachloroethane
OSHA PEL TWA [1]	35 mg/m³ Basis: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants. Remarks: Skin designation. The value in mg/m3 is approximate.
OSHA PEL TWA [2]	5 ppm Basis: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants. Remarks: Skin designation.
OSHA PEL C	7 mg/m³ Basis: California permissible exposure limits for chemical contaminants (Title 8, Article 107) Remarks: Skin.
OSHA PEL C [ppm]	1 ppm Basis: California permissible exposure limits for chemical contaminants (Title 8, Article 107) Remarks: Skin.
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

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1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS (79-34-5)	
USA - NIOSH - Occupational Exposure Limits	
NIOSH REL TWA	7 mg/m ³ Basis: USA. NIOSH Recommended Exposure Limits Remarks: Potential Occupational Carcinogen. See Appendix C. See Appendix A. c
NIOSH REL TWA [ppm]	1 ppm Basis: USA. NIOSH Recommended Exposure Limits Remarks: Potential Occupational Carcinogen. See Appendix C. See Appendix A. Basis: USA. NIOSH Recommended Exposure Limits Remarks: Potential Occupational Carcinogen. See Appendix C. See Appendix A. Basis: USA. NIOSH Recommended Exposure Limits Remarks: Potential Occupational Carcinogen. See Appendix C. See Appendix A. Potential for dermal absorption.
1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) (79-34-5)	
USA - ACGIH - Occupational Exposure Limits	
Local name	1,1,2,2-Tetrachloroethane
ACGIH OEL TWA [ppm]	1 ppm Basis: USA. ACGIH Threshold Limit Values (TLV) Remarks: Liver damage. Confirmed animal carcinogen with unknown relevance to humans. Danger of cutaneous absorption.
Remark (ACGIH)	TLV® Basis: Liver dam. Notations: Skin; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
Regulatory reference	ACGIH 2022
USA - OSHA - Occupational Exposure Limits	
Local name	1,1,2,2-Tetrachloroethane
OSHA PEL TWA [1]	35 mg/m ³ Basis: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants. Remarks: Skin designation. The value in mg/m ³ is approximate.
OSHA PEL TWA [2]	5 ppm Basis: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants. Remarks: Skin designation.
OSHA PEL C	7 mg/m ³ Basis: California permissible exposure limits for chemical contaminants (Title 8, Article 107) Remarks: Skin.
OSHA PEL C [ppm]	1 ppm Basis: California permissible exposure limits for chemical contaminants (Title 8, Article 107) Remarks: Skin.
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
USA - NIOSH - Occupational Exposure Limits	
NIOSH REL TWA	7 mg/m ³ Basis: USA. NIOSH Recommended Exposure Limits Remarks: Potential Occupational Carcinogen. See Appendix C. See Appendix A. c
NIOSH REL TWA [ppm]	1 ppm Basis: USA. NIOSH Recommended Exposure Limits Remarks: Potential Occupational Carcinogen. See Appendix C. See Appendix A. Basis: USA. NIOSH Recommended Exposure Limits Remarks: Potential Occupational Carcinogen. See Appendix C. See Appendix A. Basis: USA. NIOSH Recommended Exposure Limits Remarks: Potential Occupational Carcinogen. See Appendix C. See Appendix A. Potential for dermal absorption.
TETRAMETHYLSILANE 99.9% (75-76-3)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.

8.2. Appropriate engineering controls

- Appropriate engineering controls : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
- Environmental exposure controls : Avoid release to the environment.

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8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.

Materials for protective clothing:

Wear suitable protective clothing and gloves

Hand protection:

Wear suitable protective clothing and gloves

Eye protection:

Wear eye protection. Chemical goggles or face shield with safety glasses

Skin and body protection:

Wear suitable protective clothing, gloves and eye/face protection

Respiratory protection:

In case of inadequate ventilation wear respiratory protection. Approved supplied air respirator

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid, clear.
Color	: Colorless
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
Melting point	: -43 °C (-45 °F) - lit.
Freezing point	: No data available
Boiling point	: 147 °C (297 °F) - lit.
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: 10.7 hPa (8.0 mmHg) at 20.0 °C (68.0 °F)
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Density	: 1.586 g/ml at 25°C (77°F)
Molecular mass	: 169.86 g/mol (Labeled)
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: 5
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available

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Oxidizing properties : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable if stored under recommended conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Not available.

10.5. Incompatible materials

Strong oxidizing agents, Sodium/sodium oxides, Strong bases, Potassium. Nitrates, 2,4-dinitrophenyl disulfide.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO₂). Hydrogen chloride gas.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Toxic if swallowed.
Acute toxicity (dermal) : Fatal in contact with skin.
Acute toxicity (inhalation) : Fatal if inhaled.

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS (79-34-5)	
LD50 oral rat	200 mg/kg
ATE US (oral)	200 mg/kg body weight
ATE US (dermal)	5 mg/kg body weight
ATE US (gases)	100 ppmV/4h
ATE US (vapors)	0.5 mg/l/4h
ATE US (dust, mist)	0.05 mg/l/4h
Additional data	LC50 Inhalation - Mouse - 2 h - 4,500 mg/m ³
1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) (79-34-5)	
LD50 oral rat	200 mg/kg
LD50 oral	319 mg/kg
LC50 Inhalation - Rat (Vapours)	4.39 mg/l/4h
ATE US (oral)	200 mg/kg body weight

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1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) (79-34-5)	
ATE US (dermal)	5 mg/kg body weight
ATE US (gases)	100 ppmV/4h
ATE US (vapors)	0.5 mg/l/4h
ATE US (dust, mist)	0.05 mg/l/4h

TETRAMETHYLSILANE 99.9% (75-76-3)	
LD50 oral rat	> 2000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rat	> 2000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: other:
LC50 Inhalation - Rat	> 21.3 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), Guideline: other:

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS (79-34-5)	
IARC group	2B - Possibly carcinogenic to humans

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) (79-34-5)	
IARC group	2B - Possibly carcinogenic to humans

Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Potential Adverse human health effects and symptoms	: Headache, Nausea, Vomiting, Tremors, Incoordination, Fatigue, Dizziness, Anorexia. Blood - Irregularities - Based on Human Evidence. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Symptoms/effects after inhalation	: Fatal if inhaled.
Symptoms/effects after skin contact	: Fatal in contact with skin.
Symptoms/effects after eye contact	: May cause eye irritation.
Symptoms/effects after ingestion	: Toxic if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Very toxic to aquatic life with long lasting effects.

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS (79-34-5)	
LC50 - Fish [1]	20 mg/l Pimephales promelas (fathead minnow) - 96 h
EC50 - Crustacea [1]	9.3 mg/l
NOEC chronic crustacea	6.9 mg/l

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) (79-34-5)	
LC50 - Fish [1]	20 mg/l Pimephales promelas (fathead minnow) - 96 h
EC50 - Crustacea [1]	9.3 mg/l

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS

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1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) (79-34-5)	
NOEC chronic crustacea	6.9 mg/l
TETRAMETHYLSILANE 99.9% (75-76-3)	
LC50 - Fish [1]	1.9 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	> 103 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 0.0079 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)

12.2. Persistence and degradability

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS (79-34-5)	
Persistence and degradability	Not available.
1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) (79-34-5)	
Not rapidly degradable	
Persistence and degradability	Not available.
TETRAMETHYLSILANE 99.9% (75-76-3)	
Not rapidly degradable	

12.3. Bioaccumulative potential

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS (79-34-5)	
BCF - Fish [1]	0.00962 mg/l Lepomis macrochirus (Bluegill) - 14 d
Bioconcentration factor (BCF REACH)	8
Partition coefficient n-octanol/water (Log Pow)	5
1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) (79-34-5)	
BCF - Fish [1]	0.00962 mg/l Lepomis macrochirus (Bluegill) - 14 d
Bioconcentration factor (BCF REACH)	8
Partition coefficient n-octanol/water (Log Pow)	5
TETRAMETHYLSILANE 99.9% (75-76-3)	
Partition coefficient n-octanol/water (Log Pow)	3.24 Source: ChemIDplus

12.4. Mobility in soil

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS (79-34-5)	
Ecology - soil	Not available.
1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) (79-34-5)	
Ecology - soil	Not available.

12.5. Other adverse effects

Other adverse effects : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects.

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SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste)	: Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.
Product/Packaging disposal recommendations	: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
Ecology - waste materials	: Dispose of as unused product.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

DOT NA No	: UN1702
UN-No. (TDG)	: UN1702
UN-No. (IMDG)	: 1702
UN-No. (IATA)	: 1702

14.2. UN proper shipping name

Proper Shipping Name (DOT)	: 1,1,2,2-Tetrachloroethane
Proper Shipping Name (TDG)	: 1,1,2,2-TETRACHLOROETHANE
Proper Shipping Name (IMDG)	: 1,1,2,2-TETRACHLOROETHANE
Proper Shipping Name (IATA)	: 1,1,2,2-Tetrachloroethane

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT)	: 6.1
Hazard labels (DOT)	: 6.1



TDG

Transport hazard class(es) (TDG)	: 6.1
Hazard labels (TDG)	: 6.1



IMDG

Transport hazard class(es) (IMDG)	: 6.1
Hazard labels (IMDG)	: 6.1



IATA

Transport hazard class(es) (IATA)	: 6.1
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Hazard labels (IATA) : 6.1



14.4. Packing group

Packing group (DOT) : II
Packing group (TDG) : II
Packing group (IMDG) : II
Packing group (IATA) : II

14.5. Environmental hazards

Dangerous for the environment : Yes
Marine pollutant : Yes



Other information : No supplementary information available.

14.6. Special precautions for user

DOT
UN-No. (DOT) : UN1702
DOT Special Provisions (49 CFR 172.102) : IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.
N36 - Aluminum or aluminum alloy construction materials are permitted only for halogenated hydrocarbons that will not react with aluminum.
T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3)
TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.
DOT Packaging Exceptions (49 CFR 173.xxx) : 153
DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 243
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L
DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

TDG
UN-No. (TDG) : UN1702
Explosive Limit and Limited Quantity Index : 0.1 L
Excepted quantities (TDG) : E4
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index : 5 L
Emergency Response Guide (ERG) Number : 151

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IMDG

Limited quantities (IMDG)	: 100 ml
Excepted quantities (IMDG)	: E4
Packing instructions (IMDG)	: P001
IBC packing instructions (IMDG)	: IBC02
Tank instructions (IMDG)	: T7
Tank special provisions (IMDG)	: TP2
EmS-No. (Fire)	: F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE
EmS-No. (Spillage)	: S-A - SPILLAGE SCHEDULE Alfa - TOXIC SUBSTANCES
Stowage category (IMDG)	: A
Stowage and handling (IMDG)	: SW2
Segregation (IMDG)	: SGG10
Flash point (IMDG)	: '
Properties and observations (IMDG)	: Colourless liquid with a chloroform-like odour. Toxic if swallowed, by skin contact or by inhalation.
MFAG-No	: 151

IATA

PCA Excepted quantities (IATA)	: E4
PCA Limited quantities (IATA)	: Y641
PCA limited quantity max net quantity (IATA)	: 1L
PCA packing instructions (IATA)	: 654
PCA max net quantity (IATA)	: 5L
CAO packing instructions (IATA)	: 661
CAO max net quantity (IATA)	: 60L
ERG code (IATA)	: 6L

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS (79-34-5)

Subject to reporting requirements of United States SARA Section 313
Listed on EPA Hazardous Air Pollutant (HAPS)

CERCLA RQ	100 lb
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%)	79-34-5	Present	Active	
TETRAMETHYLSILANE 99.9%	75-76-3	Not present	-	

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) (79-34-5)

Subject to reporting requirements of United States SARA Section 313
Listed on EPA Hazardous Air Pollutant (HAPS)

CERCLA RQ	100 lb
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1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS

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1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) (79-34-5)	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard

TETRAMETHYLSILANE 99.9% (75-76-3)	
Not subject to reporting requirements of the United States SARA Section 313	
SARA Section 311/312 Hazard Classes	Fire hazard

15.2. International regulations

CANADA

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS (79-34-5)
Listed on the Canadian DSL (Domestic Substances List)

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) (79-34-5)
Listed on the Canadian DSL (Domestic Substances List)

TETRAMETHYLSILANE 99.9% (75-76-3)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS (79-34-5)
Listed on IARC (International Agency for Research on Cancer) Listed on INSQ (Mexican National Inventory of Chemical Substances)

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) (79-34-5)
Listed on IARC (International Agency for Research on Cancer) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on TECI (Thailand Existing Chemicals Inventory)

TETRAMETHYLSILANE 99.9% (75-76-3)
CAUTION: This material is supplied for research and development purposes subject to the R&D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a "technically qualified individual" as defined by 40 CFR 720.3(ee). The use of this material for "commercial purposes" as defined by 40 CFR 720.3(r) is not permitted in the United States. Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on TECI (Thailand Existing Chemicals Inventory)

15.3. US State regulations

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS (79-34-5)	
U.S. - California - Proposition 65 - Carcinogens List	Yes
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS

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1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS (79-34-5)	
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
No significant risk level (NSRL)	3 µg/day
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) (79-34-5)					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No	3 µg/day	

Component	State or local regulations
1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%)(79-34-5)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
TETRAMETHYLSILANE 99.9%(75-76-3)	U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date

: 05/11/2023

Other information

: This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Full text of H-phrases	
H224	Extremely flammable liquid and vapor
H301	Toxic if swallowed
H310	Fatal in contact with skin
H330	Fatal if inhaled
H411	Toxic to aquatic life with long lasting effects

NFPA health hazard

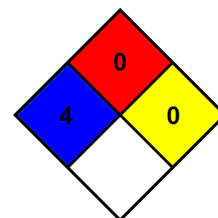
: 4 - Materials that, under emergency conditions, can be lethal.

NFPA fire hazard

: 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity

: 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

1,1,2,2-TETRACHLOROETHANE-D2 (D, 99.5%) + 0.05% V/V TMS

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Health	: 4 Severe Hazard - Life-threatening, major or permanent damage may result from single or repeated overexposures
Flammability	: 0 Minimal Hazard - Materials that will not burn
Physical	: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.