



CHLOROFORM-D "100%" (D, 99.96%) +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: 6/2/2011 Revision date: 4/18/2023 Supersedes: 1/5/2018 Version: 5.1

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : CHLOROFORM-D "100%" (D, 99.96%) +0.05% V/V TMS
CAS-No. : 67-66-3
Product code : DLM-29TB
Formula : CHCl₃

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

Acute toxicity (oral) Category 4	H302	Harmful if swallowed
Acute toxicity (inhalation) Category 3	H331	Toxic if inhaled
Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2A	H319	Causes serious eye irritation
Carcinogenicity Category 1B	H350	May cause cancer (Dermal, Inhalation, oral)
Reproductive toxicity Category 2	H361	Suspected of damaging fertility, Suspected of damaging the unborn child. (Dermal, Inhalation, oral)
Specific target organ toxicity – Single exposure, Category 3, Narcosis	H336	May cause drowsiness or dizziness
Specific target organ toxicity (repeated exposure) Category 1	H372	Causes damage to organs (central nervous system, kidneys, liver) through prolonged or repeated exposure (Dermal, Inhalation, oral)
Hazardous to the aquatic environment – Acute Hazard Category 3	H402	Harmful to aquatic life

Full text of H statements : see section 16

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2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US)



Signal word (GHS US)

: Danger

Hazard statements (GHS US)

: H302 - Harmful if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H331 - Toxic if inhaled
H336 - May cause drowsiness or dizziness
H350 - May cause cancer (Dermal, Inhalation, oral)
H361 - Suspected of damaging fertility, Suspected of damaging the unborn child. (Dermal, Inhalation, oral)
H372 - Causes damage to organs (central nervous system, kidneys, liver) through prolonged or repeated exposure (Dermal, Inhalation, oral)
H402 - Harmful to aquatic life

Precautionary statements (GHS US)

: P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe dust, fume, gas, mist, spray, vapors.
P261 - Avoid breathing dust, fume, gas, mist, spray, vapors.
P264 - Wash hands, forearms and face 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.
P301+P312 - If swallowed: Call a doctor, a POISON CENTER if you feel unwell.
P302+P352 - If on skin: Wash with plenty of water.
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P311 - Call a doctor, a POISON CENTER.
P312 - Call a doctor, a POISON CENTER if you feel unwell.
P314 - Get medical advice/attention if you feel unwell.
P321 - Specific treatment (see Hazardous component(s) for labeling on this label).
P330 - Rinse mouth.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

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SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
CHLOROFORM-D "100%" (D, 99.96%)	CAS-No.: 865-49-6	99.95	Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Inhalation), H331 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Carc. 2, H351 Repr. 2, H361 STOT SE 3, H336 STOT RE 1, H372 Aquatic Acute 3, H402
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

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: Evacuate danger area. Suspected of causing cancer (if inhaled, in contact with skin, if swallowed). IF exposed or concerned: Get medical advice/attention.
First-aid measures after inhalation	: When symptoms occur: go into open air and ventilate suspected area. If not breathing, give artificial respiration. Get medical advice/attention. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
First-aid measures after skin contact	: Wash with plenty of soap and water. Get immediate medical advice/attention. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Wash with plenty of soap and water, Get immediate medical advice/attention. Get medical advice/attention. Specific treatment (see Hazard pictograms (CLP) on this label).
First-aid measures after eye contact	: Rinse cautiously with water for several minutes.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Rinse mouth out with water. Get medical advice/attention. Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

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

Potential Adverse human health effects and symptoms	: 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. Harmful if swallowed.
Symptoms/effects after inhalation	: Toxic if inhaled. May cause respiratory irritation. May cause drowsiness or dizziness.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO2).

5.2. Specific hazards arising from the chemical

No additional information available

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Fight fire with normal precautions from a reasonable distance. Wear a self contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear recommended personal protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Prevent entry to sewers and public waters. Do not allow to enter drains or water courses. Avoid release to the environment.

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.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Avoid all eye and skin contact and do not breathe vapor and mist. Keep away from sources of ignition - No smoking.

Precautions for safe handling : Provide adequate ventilation to minimize dust and/or vapor concentrations. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust, fume, gas, mist, spray, vapors. Use only outdoors or in a well-ventilated area. Do not breathe dust, fume, gas, mist, spray, vapors.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling.

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7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Store in a well-ventilated place. Keep container tightly closed. Containers which are opened should be properly resealed and kept upright to prevent leakage.
Storage conditions	: Store refrigerated (-5 °C to 5 °C). Protect from light.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

CHLOROFORM-D "100%" (D, 99.96%) +0.05% V/V TMS (67-66-3)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Chloroform
ACGIH OEL TWA [ppm]	10 ppm Confirmed animal carcinogen with unknown relevance to humans.
Remark (ACGIH)	TLV® Basis: Liver & embryo/fetal dam; CNS impair. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
Regulatory reference	ACGIH 2022
USA - OSHA - Occupational Exposure Limits	
Local name	Chloroform (Trichloromethane)
OSHA PEL TWA [2]	2 ppm
OSHA PEL C	240 mg/m ³
OSHA PEL C [ppm]	50 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
CHLOROFORM-D "100%" (D, 99.96%) (865-49-6)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA [ppm]	10 ppm Basis: USA. ACGIH Threshold Limit Values (TLV)
Remark (ACGIH)	Central Nervous system impairment. Liver damage. Embryo/fetal damage. Confirmed animal carcinogen with unknown relevance to humans.
USA - OSHA - Occupational Exposure Limits	
OSHA PEL TWA [1]	9.78 mg/m ³ Basis: USA. Occupational Exposure Limits (OSHA) Table Z-1 Limits for Air Contaminants - 1910.1000
OSHA PEL TWA [2]	2 ppm Basis: USA. Occupational Exposure Limits (OSHA) Table Z-1 Limits for Air Contaminants - 1910-.1000
OSHA PEL C	240 mg/m ³ Basis: USA. Occupational Exposure Limits (OSHA) Table Z-1 Limits for Air Contaminants.
OSHA PEL C [ppm]	50 ppm Basis: USA. Occupational Exposure Limits (OSHA) Table Z-1 Limits for Air Contaminants.
Remark (OSHA)	The value in mg/m ³ is approximate. Ceiling limit is to be determined from breathing-zone air samples. Value: PEL Control Parameters: 2 ppm / 9.78 mg/m ³ Basis: California permissible exposure limits for chemical contaminants (Title 8, Article 107)
USA - NIOSH - Occupational Exposure Limits	
NIOSH REL STEL	9.78 mg/m ³ Basis: USA. NIOSH Recommended Exposure Limits
NIOSH REL STEL [ppm]	2 ppm Basis: USA. NIOSH Recommended Exposure Limits
Remark (NIOSH)	Potential Occupational Carcinogen. See Appendix A.

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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.

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. Wear suitable protective clothing

Respiratory protection:

In case of inadequate ventilation wear respiratory protection. Approved supplied air respirator. Where exposure through inhalation may occur from use, respiratory protection equipment is recommended

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	: Mixture contains one or more component(s) which have the following odour:
Odor threshold	: No data available
pH	: No data available
Melting point	: -64 °C (-83 °F) - lit.
Freezing point	: No data available
Boiling point	: 60.9 °C (141.6 °F) - lit.
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available

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Vapor pressure	: No data available
Relative vapor density at 20°C	: 4.12 - (Air = 1.0)
Relative density	: 1.5 g/cm ³ at 25 °C (77 °F)
Molecular mass	: 120.38 g/mol (Labeled)
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: 1.97
Auto-ignition temperature	: No data available
Decomposition temperature	: Distillable in an undecomposed state at normal pressure.
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
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

Six months after receipt if stored as stated in "Storage" section. Re-QC after six months.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

Strong oxidizing agents, Strong bases, Magnesium, Sodium/Sodium oxides, Lithium.

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)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Toxic if inhaled.

CHLOROFORM-D "100%" (D, 99.96%) +0.05% V/V TMS (67-66-3)	
LD50 oral rat	695 mg/kg
LD50 dermal rabbit	> 20000 mg/kg
LC50 Inhalation - Rat	47702 mg/m ³ 4 h
ATE US (oral)	695 mg/kg body weight
ATE US (gases)	700 ppmV/4h

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CHLOROFORM-D "100%" (D, 99.96%) +0.05% V/V TMS (67-66-3)	
ATE US (vapors)	3 mg/l/4h
ATE US (dust, mist)	0.5 mg/l/4h
CHLOROFORM-D "100%" (D, 99.96%) (865-49-6)	
LD50 oral rat	908 mg/kg
LD50 dermal rabbit	> 20000 mg/kg
LC50 Inhalation - Rat	47702 mg/m ³ 4 h
ATE US (oral)	908 mg/kg body weight
ATE US (gases)	700 ppmV/4h
ATE US (vapors)	3 mg/l/4h
ATE US (dust, mist)	0.5 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	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: May cause cancer (Dermal, Inhalation, oral).
CHLOROFORM-D "100%" (D, 99.96%) +0.05% V/V TMS (67-66-3)	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen
CHLOROFORM-D "100%" (D, 99.96%) (865-49-6)	
Additional information	: Tumorigenic: Carcinogenic by RTECS criteria. Leukemia.
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen
Reproductive toxicity	: Suspected of damaging fertility, Suspected of damaging the unborn child. (Dermal, Inhalation, oral).
STOT-single exposure	: May cause drowsiness or dizziness.
CHLOROFORM-D "100%" (D, 99.96%) (865-49-6)	
STOT-single exposure	May cause drowsiness or dizziness.
STOT-repeated exposure	: Causes damage to organs (central nervous system, kidneys, liver) through prolonged or repeated exposure (Dermal, Inhalation, oral).
CHLOROFORM-D "100%" (D, 99.96%) (865-49-6)	
STOT-repeated exposure	Causes damage to organs (central nervous system, kidneys, liver) through prolonged or repeated exposure (Dermal, Inhalation, oral).
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available

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Potential Adverse human health effects and symptoms	: 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. Harmful if swallowed.
Symptoms/effects after inhalation	: Toxic if inhaled. May cause respiratory irritation. May cause drowsiness or dizziness.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Harmful to aquatic life.

CHLOROFORM-D "100%" (D, 99.96%) +0.05% V/V TMS (67-66-3)

LC50 - Fish [1]	162 mg/l <i>Leuciscus idus</i> (Golden orfe) - 48 h
EC50 - Crustacea [1]	79 mg/l <i>Daphnia magna</i> (Water flea) - 48 h
ErC50 algae	13.3 mg/l
NOEC chronic fish	0.059 mg/l

CHLOROFORM-D "100%" (D, 99.96%) (865-49-6)

LC50 - Fish [1]	162 mg/l <i>Leuciscus idus</i> (Golden orfe) - 48 h
LC50 - Other aquatic organisms [1]	97 mg/l Other fish - 96 h
EC50 - Crustacea [1]	79 mg/l <i>Daphnia magna</i> (Water flea) - 48 h
EC50 - Other aquatic organisms [1]	500 mg/l No information available - 24 h
LC50 - Fish [2]	121 mg/l <i>Danio rerio</i> (Zebra fish) - 96 h
EC50 - Crustacea [2]	51.6 mg/l <i>Daphnia magna</i> (water flea) - 11 d
ErC50 algae	500 mg/l - 24 h
NOEC (chronic)	122 mg/l <i>Oryzias latipes</i> - 10 d
NOEC chronic fish	24 mg/l <i>Oncorhynchus mykiss</i> (rainbow trout) - 96 h

TETRAMETHYLSILANE 99.9% (75-76-3)

LC50 - Fish [1]	1.9 mg/l Test organisms (species): <i>Oncorhynchus mykiss</i> (previous name: <i>Salmo gairdneri</i>)
EC50 - Crustacea [1]	> 103 mg/l Test organisms (species): <i>Daphnia magna</i>
EC50 72h - Algae [1]	> 0.0079 mg/l Test organisms (species): <i>Desmodesmus subspicatus</i> (previous name: <i>Scenedesmus subspicatus</i>)

12.2. Persistence and degradability

CHLOROFORM-D "100%" (D, 99.96%) +0.05% V/V TMS (67-66-3)

Persistence and degradability	Not available.
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TETRAMETHYLSILANE 99.9% (75-76-3)

Not rapidly degradable

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12.3. Bioaccumulative potential

CHLOROFORM-D "100%" (D, 99.96%) +0.05% V/V TMS (67-66-3)

Partition coefficient n-octanol/water (Log Pow) 1.97

Bioaccumulative potential Not available.

CHLOROFORM-D "100%" (D, 99.96%) (865-49-6)

BCF - Fish [1] -0.11 mg/l *Lepomis macrochirus* (Bluegill) - 14 d

Bioconcentration factor (BCF REACH) 6

Partition coefficient n-octanol/water (Log Pow) 1.97

TETRAMETHYLSILANE 99.9% (75-76-3)

Partition coefficient n-octanol/water (Log Pow) 3.24 Source: ChemIDplus

12.4. Mobility in soil

CHLOROFORM-D "100%" (D, 99.96%) +0.05% V/V TMS (67-66-3)

Ecology - soil Not available.

12.5. Other adverse effects

Other adverse effects : Avoid release to the environment. Environmental precautions. Disposal must be done according to official regulations.

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 : UN1888

UN-No. (TDG) : Not applicable

UN-No. (IMDG) : 1888

UN-No. (IATA) : 1888

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Chloroform

Proper Shipping Name (TDG) : Not applicable

Proper Shipping Name (IMDG) : CHLOROFORM

Proper Shipping Name (IATA) : Chloroform

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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) : Not applicable

IMDG

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



IATA

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



14.4. Packing group

Packing group (DOT) : III
Packing group (TDG) : Not applicable
Packing group (IMDG) : III
Packing group (IATA) : III

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT

UN-No.(DOT) : UN1888

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DOT Special Provisions (49 CFR 172.102)	: IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). 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, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). 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)	: 203
DOT Packaging Bulk (49 CFR 173.xxx)	: 241
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 220 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

Emergency Response Guide (ERG) Number : 151

IMDG

Limited quantities (IMDG)	: 5 L
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: P001, LP01
IBC packing instructions (IMDG)	: IBC03
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, volatile liquid.Boiling point: 61°C. Non-flammable. When involved in a fire, evolves extremely toxic fumes (phosgene). Toxic if swallowed, by skin contact or by inhalation. Anaesthetic.
MFAG-No	: 151

IATA

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y680
PCA limited quantity max net quantity (IATA)	: 2L
PCA packing instructions (IATA)	: 680
PCA max net quantity (IATA)	: 60L
CAO packing instructions (IATA)	: 680
CAO max net quantity (IATA)	: 220L
ERG code (IATA)	: 6A

CHLOROFORM-D "100%" (D, 99.96%) +0.05% V/V TMS

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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

CHLOROFORM-D "100%" (D, 99.96%) +0.05% V/V TMS (67-66-3)

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

CERCLA RQ	10 lb
RQ (Reportable quantity, section 304 of EPA's List of Lists)	10 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	10000 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
CHLOROFORM-D "100%" (D, 99.96%)	865-49-6	Not present	-	
TETRAMETHYLSILANE 99.9%	75-76-3	Not present	-	

CHLOROFORM-D "100%" (D, 99.96%) (865-49-6)

SARA Section 302 Threshold Planning Quantity (TPQ)	Subject to reporting requirements of United States SARA Section 302
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
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15.2. International regulations

CANADA

CHLOROFORM-D "100%" (D, 99.96%) +0.05% V/V TMS (67-66-3)

Listed on the Canadian DSL (Domestic Substances List)

CHLOROFORM-D "100%" (D, 99.96%) (865-49-6)

Listed on the Canadian DSL (Domestic Substances List)

TETRAMETHYLSILANE 99.9% (75-76-3)

Listed on the Canadian DSL (Domestic Substances List)

CHLOROFORM-D "100%" (D, 99.96%) +0.05% V/V TMS

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EU-Regulations

No additional information available

National regulations

CHLOROFORM-D "100%" (D, 99.96%) +0.05% V/V TMS (67-66-3)

Listed on IARC (International Agency for Research on Cancer)
Listed as carcinogen on NTP (National Toxicology Program)
Listed on INSQ (Mexican National Inventory of Chemical Substances)

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

CHLOROFORM-D "100%" (D, 99.96%) +0.05% V/V TMS (67-66-3)

U.S. - California - Proposition 65 - Carcinogens List	Yes
U.S. - California - Proposition 65 - Developmental Toxicity	Yes
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
No significant risk level (NSRL)	20 µg/day (oral) ; 40 µg/day (inhalation)
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

CHLOROFORM-D "100%" (D, 99.96%) (865-49-6)

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	Yes	Yes	Yes		

Component	State or local regulations
TETRAMETHYLSILANE 99.9%(75-76-3)	U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

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Revision date : 04/18/2023

CHLOROFORM-D "100%" (D, 99.96%) +0.05% V/V TMS

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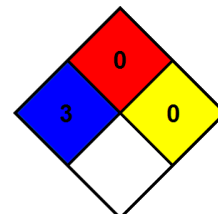
Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the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

Full text of H-phrases	
H224	Extremely flammable liquid and vapor
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H331	Toxic if inhaled
H336	May cause drowsiness or dizziness
H350	May cause cancer
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H402	Harmful to aquatic life

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

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

Health : 2 Moderate Hazard - Temporary or minor injury may occur

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.