

1,1,2,2-TETRACHLOROETHANE

GHS Safety Data Sheet

Version No:5.1.1.1

Page 1 of 10

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

1,1,2,2-TETRACHLOROETHANE

OTHER NAMES

C₂H₂Cl₄, Cl₂-(CH)₂-Cl₂, TCE, "ethane, 1, 1, 2, 2-tetrachloro-", "1, 1-dichloro-2, 2-dichloroethane", S-tetrachloroethane, sym-tetrachloroethane, "acetylene tetrachloride", NCI-C03554, "RCRA Waste No. U209", Cellon, Bonoform, Westron

PROPER SHIPPING NAME

1,1,2,2-TETRACHLOROETHANE

PRODUCT USE

■ Dangerous POISON. Available ONLY for industrial and manufacturing purposes.

Solvent, cleansing and degreasing of metals, paint removers, varnishes, lacquers, photographic film, resins and waxes. Used also to extract oils and fats, as an alcohol denaturant, in organic syntheses of insecticides, fumigants and weed killers.

SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V.Ind.Estate,

248, Worli Road,

Mumbai- 400030, India

www.sdfine.com

Telephone: 91- 22 24959898/99

Fax: 91- 22 2493 7232

Email: technical@sdfine.com

Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Acute Toxicity Category 1

Acute Toxicity Category 1

Acute Toxicity Category 3

Chronic Aquatic Hazard Category 2

Eye Irritation Category 2A



EMERGENCY OVERVIEW

HAZARD

DANGER

Determined by using GHS criteria

H301

Toxic if swallowed.

H310

Fatal in contact with skin.

H319

Causes serious eye irritation.

H330

Fatal if inhaled.

continued...

1,1,2,2-TETRACHLOROETHANE

GHS Safety Data Sheet

Version No:5.1.1.1

Page 2 of 10

Section 2 - HAZARDS IDENTIFICATION

H411 Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention

Code	Phrase
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash ... 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 gloves/protective clothing/eye protection/face protection.
P284	Wear respiratory protection.

Response

Code	Phrase
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+P350	IF ON SKIN: Gently wash with plenty of soap and water.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position 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.
P310	Immediately call a POISON CENTER or doctor/physician.
P320	Specific treatment is urgent (see MSDS).
P330	Rinse mouth.
P337+P313	If eye irritation persists: Get medical advice/attention.
P361	Remove/Take off immediately all contaminated clothing.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.

Storage

Code	Phrase
P403+P233	Store in a well- ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal

Code	Phrase
P501	Dispose of contents/container to ...

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
1, 1, 2, 2- tetrachloroethane	79-34-5	>97

Section 4 - FIRST AID MEASURES

SWALLOWED

- IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.
- For advice, contact a Poisons Information Centre or a doctor.
- Urgent hospital treatment is likely to be needed.
- In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.
- Avoid giving milk or oils.
- Avoid giving alcohol.

EYE

- If this product comes in contact with the eyes:
- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.

continued...

1,1,2,2-TETRACHLOROETHANE

GHS Safety Data Sheet

Version No:5.1.1.1

Page 3 of 10

Section 4 - FIRST AID MEASURES

SKIN

- If skin or hair contact occurs:
- Immediately flush body and clothes with large amounts of water, using safety shower if available.
- Quickly remove all contaminated clothing, including footwear.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
- Transport to hospital, or doctor.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.

NOTES TO PHYSICIAN

- for intoxication due to Freons/ Halons;
A: Emergency and Supportive Measures
- Maintain an open airway and assist ventilation if necessary
- Treat coma and arrhythmias if they occur. Avoid (adrenaline) epinephrine or other sympathomimetic amines that may precipitate ventricular arrhythmias. Tachyarrhythmias caused by increased myocardial sensitisation may be treated with propranolol, 1-2 mg IV or esmolol 25-100 microgm/kg/min IV.
- Monitor the ECG for 4-6 hours
- B: Specific drugs and antidotes:
- There is no specific antidote.
- Acute exposures to carbon tetrachloride present, initially, with CNS depression followed by hepatic and renal dysfunction.
- Respiratory depression and cardiac dysrhythmias are an immediate threat to life.
- Since a major fraction of absorbed carbon tetrachloride is exhaled in the first hour, good tidal volumes should be maintained in severely poisoned patients; hyperventilation may be an additional therapeutic modality.
- Ipecac syrup, lavage, activated charcoal or catharsis may all be used in the first 4 hours.
- Treatment regime for carbon tetrachloride may be useful [Gosselin]

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use fire fighting procedures suitable for surrounding area.

FIRE/EXPLOSION HAZARD

- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).

Combustion products include: carbon dioxide (CO₂), hydrogen chloride, phosgene, other pyrolysis products typical of burning organic material.

May emit poisonous fumes.

FIRE INCOMPATIBILITY

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

continued...

1,1,2,2-TETRACHLOROETHANE

GHS Safety Data Sheet

Version No:5.1.1.1
Page 4 of 10

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- DO NOT allow clothing wet with material to stay in contact with skin.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.

PACKAGING MATERIAL INCOMPATIBILITIES

Chemical Name	Container Type
	" Acetal (Delrin)" , " Buna N (Nitrile)" , " Cast iron" , EPDM, Hypalonr, " Natural rubber" , Neoprene, NORYLr, Polyurethane, Silicone

SUITABLE CONTAINER

- DO NOT use aluminium or galvanised containers.
- Glass container is suitable for laboratory quantities.
- Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.
- Packing as recommended by manufacturer.

For low viscosity materials

- Drums and jerricans must be of the non-removable head type.
- Where a can is to be used as an inner package, the can must have a screwed enclosure. <</>.

All inner and sole packagings for substances that have been assigned to Packaging Groups I or II on the basis of inhalation toxicity criteria, must be hermetically sealed.

STORAGE INCOMPATIBILITY

■ Haloalkanes:

- are highly reactive:some of the more lightly substituted lower members are highly flammable; the more highly substituted may be used as fire suppressants, not always with the anticipated results.
- may react with the lighter divalent metals to produce more reactive compounds analogous to Grignard reagents.
- may produce explosive compounds following prolonged contact with metallic or other azides
- may react on contact with potassium or its alloys - although apparently stable on contact with a wide rage of halocarbons, reaction products may be shock-sensitive and may explode with great violence on light impact; severity generally increases with the degree of halocarbon substitution and potassium-sodium alloys give extremely sensitive mixtures .

Tetrachloroethane:

- decomposes slowly on contact with water or moisture forming trichloroacetic acid and hydrochloric acid
- reacts violently with nitric acid (producing carbon dioxide), nitrates, strong oxidisers, strong alkalis, powdered chemically active metals such as aluminium, barium, beryllium, lithium, sodium and zinc and 2,4-dinitrophenyl sulfide
- Avoid strong bases. Reacts violently with sodium, potassium, nitrates
- is incompatible with nitrogen tetroxide, finely divided metals.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.

continued...

1,1,2,2-TETRACHLOROETHANE

- Store away from incompatible materials and foodstuff containers.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- 1, 1, 2, 2- tetrachloroethane:

CAS:79- 34- 5

MATERIAL DATA

1,1,2,2-TETRACHLOROETHANE:

- for 1,1,2,2-tetrachloroethane:

Odour Threshold Value: 7.3 ppm (detection)

IDLH Level: 100 ppm

Tetrachloroethane is about 9 times more toxic than carbon tetrachloride and is one of the more hepatotoxic chlorinated hydrocarbon solvents. The substance is reportedly toxic to humans and animals exposed at less than 10 ppm.

PERSONAL PROTECTION



EYE

- Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure
- Chemical goggles whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted
- Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.
- Alternatively a gas mask may replace splash goggles and face shields.

HANDS/FEET

- Elbow length PVC gloves.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

OTHER

- Overalls.
- Eyewash unit.
- Barrier cream.
- Skin cleansing cream.

ENGINEERING CONTROLS

■ Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

1,1,2,2-TETRACHLOROETHANE

GHS Safety Data Sheet

Version No:5.1.1.1
Page 6 of 10

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

A clear liquid.

PHYSICAL PROPERTIES

Liquid.
Does not mix with water.
Sinks in water.
Toxic or noxious vapours/gas.

State	Liquid	Molecular Weight	169.85
Melting Range (°C)	- 43	Viscosity	Not Available
Boiling Range (°C)	147	Solubility in water (g/L)	Immiscible
Flash Point (°C)	Not Available	pH (1% solution)	Not applicable
Decomposition Temp (°C)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°C)	Not available	Vapour Pressure (kPa)	Not available
Upper Explosive Limit (%)	Not available	Specific Gravity (water=1)	1.62
Lower Explosive Limit (%)	Not available	Relative Vapour Density (air=1)	>1
Volatile Component (%vol)	100	Evaporation Rate	Fast

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of elevated temperatures.
- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

Health hazard summary table:

Acute toxicity	Acute Tox. (dermal) 1 Acute Tox. (inhal) 1 Acute Tox. (oral) 3
Skin corrosion/irritation	Not applicable
Serious eye damage/irritation	Eye Irrit. 2A
Respiratory or skin sensitization	Not applicable
Germ cell mutagenicity	Not applicable
Carcinogenicity	Not applicable
Reproductive toxicity	Not applicable
STOT- single exposure	Not applicable
STOT- repeated exposure	Not applicable
Aspiration hazard	Not applicable

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

- Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.
- Eight humans, each of whom had ingested 3 ml tetrachloroethane by mistake, became comatose and arreflexic but recovered without any apparent ill-effects.

EYE

- This material can cause eye irritation and damage in some persons.

continued...

1,1,2,2-TETRACHLOROETHANE

SKIN

■ Skin contact with the material may produce severely toxic effects; systemic effects may result following absorption and these may be fatal.

■ The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis.

The material is unlikely to produce an irritant dermatitis as described in EC Directives .

■ Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.

■ Dermal exposure to tetrachloroethane leads to dryness, scaling, inflammation and purpuric rash.

The calculated human skin permeability coefficient is 9×10^{-3} cm/hr.

■ Open cuts, abraded or irritated skin should not be exposed to this material.

■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.

Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

■ Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce severely toxic effects; these may be fatal.

■ The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models).

Nevertheless inhalation of vapours, fumes or aerosols, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.

■ Inhalation of vapours may cause drowsiness and dizziness.

This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.

■ Acute intoxication by halogenated aliphatic hydrocarbons appears to take place over two stages.

Signs of a reversible narcosis are evident in the first stage and in the second stage signs of injury to organs may become evident, a single organ alone is (almost) never involved.

■ Depression of the central nervous system is the most outstanding effect of most halogenated aliphatic hydrocarbons.

Inebriation and excitation, passing into narcosis, is a typical reaction.

■ Respiratory irritation and pulmonary oedema may follow inhalation exposures.

Human volunteers retain about 97% of inspired tetrachloroethane.

■ Anaesthetics and narcotic effects (with dulling of senses and odour fatigue) are a consequence of exposure to chlorinated solvents.

Individual response varies widely; odour may not be considered objectionable at levels which quickly induce central nervous system effects.

CHRONIC HEALTH EFFECTS

■ There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

Chronic exposure to tetrachloroethane causes jaundice, liver enlargement, fatty degeneration, tissue death and hardening of the liver. Human poisoning can manifest as liver toxicity (gastrointestinal disturbance) or central nervous system symptoms including tremors, vertigo and headache. About half of workers at a penicillin plant who were exposed long-term developed inflammation of the liver. Workers making bangles in India showed a high rate of nervous complaints, with tremors being the most common. Various stomach and general symptoms were described, although jaundice was not seen. Animal testing shows that tetrachloroethane is toxic to the liver, immune system and kidney, and that it may cause cancer.

TOXICITY AND IRRITATION

■ For 1,1,2,2-tetrachloroethane:

A number of suicides from drinking 1,1,2,2-tetrachloroethane have been reported, with unconsciousness occurring within 1 hour and death within 3-20 hours. Autopsy showed gross congestion in the gullet, stomach, kidneys, spleen and windpipe, kidney and lungs, and gross swelling in the lungs and kidney. Deaths have also occurred after inhalation, with extreme liver destruction and fatty degeneration. In animals, exposure to concentrations of 0.1% caused death in 6 hours. 1,1,2,2-tetrachloroethane does not seem to increase heart disease; however it often causes gastric distress including pain, nausea, vomiting, loss of appetite, and loss of weight; this is reversible once exposure ends. Workers exposed in the workplace have also shown changes in blood count. The substance causes jaundice and liver degeneration. It also causes dizziness, headaches, tremors, numbness and drowsiness in workers exposed in the workplace. At higher doses in animal testing, inco-ordination, sleepiness and prostration also occurred. It is inconclusive as to whether 1,1,2,2-tetrachloroethane causes reproductive effects; it has been shown to cause liver cancer in some animal studies.

The substance is classified by IARC as Group 3:

NOT classifiable as to its carcinogenicity to humans.

Evidence of carcinogenicity may be inadequate or limited in animal testing.

CARCINOGEN

1, 1, 2, 2-
tetrachloroethane

International Agency for
Research on Cancer (IARC) -
Agents Reviewed by the IARC
Monographs

Group

2B

Possibly
carcinogenic to
humans

continued...

1,1,2,2-TETRACHLOROETHANE

GHS Safety Data Sheet

Version No:5.1.1.1

Page 8 of 10

Section 11 - TOXICOLOGICAL INFORMATION

SKIN

1, 1, 2, 2-tetrachloroethane

GESAMP/EHS Composite List - GESAMP Hazard Profiles

D1: skin irritation/corrosion

2

Section 12 - ECOLOGICAL INFORMATION

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

This material and its container must be disposed of as hazardous waste.

Avoid release to the environment.

Refer to special instructions/ safety data sheets.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
1, 1, 2, 2- tetrachloroethane	LOW	HIGH	LOW	MED

GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles

Name / Cas No / RTECS No	EHS	TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
/ CAS:79-34- 5 /	53	687	2	—	2	NR	3	0	2	0	2	—	2	—	—	SD	2

Legend:

EHS=EHS Number (EHS=GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships) NRT=Net Register Tonnage, A1a=Bioaccumulation log Pow, A1b=Bioaccumulation BCF, A1=Bioaccumulation, A2=Biodegradation, B1=Acuteaquatic toxicity LC/ECIC50 (mg/l), B2=Chronic aquatic toxicity NOEC (mg/l), C1=Acute mammalian oral toxicity LD50 (mg/kg), C2=Acute mammalian dermal toxicity LD50 (mg/kg), C3=Acute mammalian inhalation toxicity LC50 (mg/kg), D1=Skin irritation & corrosion, D2=Eye irritation& corrosion, D3=Long-term health effects, E1=Tainting, E2=Physical effects on wildlife & benthic habitats, E3=Interference with coastal amenities,

For column A2: R=Readily biodegradable, NR=Not readily biodegradable.

For column D3: C=Carcinogen, M=Mutagenic, R=Reprotoxic, S=Sensitising, A=Aspiration hazard, T=Target organ systemic toxicity, L=Lung injury, N=Neurotoxic, I=Immunotoxic.

For column E1: NT=Not tainting (tested), T=Tainting test positive.

For column E2: Fp=Persistent floater, F=Floater, S=Sinking substances.

The numerical scales start from 0 (no hazard), while higher numbers reflect increasing hazard.

(GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships)

Section 13 - DISPOSAL CONSIDERATIONS

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.

Otherwise:

- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- Where possible retain label warnings and MSDS and observe all notices pertaining to the product.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction.
- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Authority for disposal.
- Bury or incinerate residue at an approved site.

continued...

1,1,2,2-TETRACHLOROETHANE

GHS Safety Data Sheet

Version No:5.1.1.1

Page 9 of 10

Section 13 - DISPOSAL CONSIDERATIONS

- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION



Labels Required: TOXIC

HAZCHEM:

2X

Land Transport UNDG:

Class or division: 6.1
UN No.: 1702
Shipping Name: 1,1,2,2-TETRACHLOROETHANE

Subsidiary risk: None
UN packing group: II

Air Transport IATA:

ICAO/IATA Class: 6.1
UN/ID Number: 1702
Special provisions: None

ICAO/IATA Subrisk: None
Packing Group: II

Shipping name: 1,1,2,2-TETRACHLOROETHANE

Maritime Transport IMDG:

IMDG Class: 6.1
UN Number: 1702
EMS Number: F- A, S- A
Limited Quantities: 100 ml
Shipping name: 1,1,2,2-TETRACHLOROETHANE

IMDG Subrisk: P
Packing Group: II
Special provisions: None
Marine Pollutant: Yes

GESAMP hazard profiles for this material can be found in section 12 of the MSDS.

Section 15 - REGULATORY INFORMATION

REGULATIONS

1,1,2,2-tetrachloroethane (CAS: 79-34-5) is found on the following regulatory lists;

"FisherTransport Information", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "India Manufacture, Storage and Import of Hazardous Chemical Rules - Schedule 1: List of Hazardous and Toxic Chemicals", "International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs", "International Council of Chemical Associations (ICCA) - High Production Volume List", "OECD List of High Production Volume (HPV) Chemicals", "Sigma-AldrichTransport Information", "United Nations Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved by Governments"

Section 16 - OTHER INFORMATION

- Classification of the preparation and its individual components has drawn on official and authoritative sources using available literature references.

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

continued...

1,1,2,2-TETRACHLOROETHANE

GHS Safety Data Sheet

Version No:5.1.1.1

Page 10 of 10

Section 16 - OTHER INFORMATION

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

Issue Date: 10-Apr-2018