

MATERIAL SAFETY DATA SHEET

TRICHLOROETHYLENE

1. Chemical Product And Company Identification

Product Name	Trichloroethylene
Chemical Name:	Trichloroethylene
Common Names/Synonyms:	Trichloroethylene, Trichlor
Company Identification: (INDIA)	Veritas House, 70 Mint Road, Fort, Mumbai - 400 001. INDIA
For information in the INDIA, call:	Tel: +91 - 22 - 2275 5555 / 6184 0000, Fax: +91 - 22 - 2275 5556 / 6184 0001

2. Composition, Information on Ingredients

Ingredient	Trichloroethylene
% Volume	> 99
PEL-OSHA	100 ppm TWA, 200 ppm Ceiling, 300 ppm 5-minute Peak
TLV-ACGIH	50 ppm TWA, A5, 100 ppm STEL
LD50 or LC50	LC50 = 8450 ppm (Mouse)
Formula	C2HCl3
CAS	79-01-6

3. Hazards Identification

EMERGENCY OVERVIEW

Direct contact with liquid form is irritating to the eyes, skin and mucous membranes. Inhaled vapor has an anesthetic or narcotic effect at high concentrations. Exposure to flame or arc will cause slow burning and decomposition into phosgene and hydrochloric acid.

Route Of Entry:

Skin Contact	Yes
Skin Absorption	No
Eye Contact	Yes
Inhalation	Yes
Ingestion	Yes

Health effects:

Exposure limits:	Yes
Irritant	Yes
Sensitization:	No
Teratogen:	Yes
Reproductive hazard:	Yes
Mutagen :	Yes
Synergistic effects:	other agents that depress the central nervous system
Eye effects:	Trichloroethylene is irritating to the eyes.
Skin effects:	Irritating to the skin and mucosal tissues.
Ingestion effects:	Mildly toxic by ingestion with effects similar to inhalation.

Inhalation effects: inhalation has an anesthetic or narcotic effect causing headache, dizziness, and possibly nausea. At higher Concentrations it can cause unconsciousness. Prolonged exposure to high concentrations has resulted in death from cardiac failure.

Prolonged exposure above the exposure limits may result in toxicity to the liver and kidneys.

4. First Aid Measures

Eyes:	Flush eyes with large amounts of water for at least 15 minutes
Skin:	Remove contaminated clothing and flush affected area with water. If irritation persists, a physician should see the patient promptly
Ingestion:	Prompt medical attention is mandatory in all cases of ingestion. If conscious: drink large quantities of water. Do not induce vomiting
Inhalation:	Prompt medical attention is mandatory in all cases of overexposure. Rescue personnel should be equipped with self-contained breathing apparatus. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area and given artificial resuscitation and supplemental oxygen. Medical assistance should be sought immediately. Further treatment should be symptomatic and supportive. The physician should be instructed not to use adrenaline as a stimulant in cases of trichloroethylene poisoning.

5. Fire Fighting Measures

Conditions Of Flammability:	Not Flammable
Flash Point:	None
Autoignition Temperature:	420° C Lel(%): 7.8 Uel(%): 52
Hazardous Combustion Products:	Phosgene And Hydrogen Chloride
Sensitivity To Mechanical Shock:	None
Sensitivity To Static Discharge:	Not Available
Fire And Explosion Hazards:	Vapor Is Non-Flammable Under Test Conditions, But Can Be Made To Burn Mildly If A Strong Flame Is Applied In Air
Extinguishing Media:	Water, Carbon Dioxide Or Dry Chemical
Fire Fighting Instruction:	Fire Fighters Should Use Self-Contained Breathing Apparatus To Protect Them From Toxic Combustion Products. If Possible, Stop The Flow Of Gas. Use Water Spray To Cool Adjacent Areas

6. Accidental Release Measures

Evacuate all personnel from affected area. Vapors are heavier than air and will accumulate in low lying areas. Use appropriate protective equipment. Recover spilled material in absorbents such as sawdust or vermiculite. If a leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is in container of container valve, contact the appropriate emergency telephone number listed in section 1.

7. Handling and Storage

Electrical classification: Nonhazardous.

Trichloroethylene can be handled in most common materials of construction. May react violently with aluminum, titanium, magnesium or their alloys. Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (< 300 psig) piping or Systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder.

Protect containers from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 130° f (54° c).

Containers should be stored upright and firmly secured to prevent falling or being knocked over. Use a “first in-first out” inventory system to prevent full cylinders being stored for excessive periods of time. Post “no smoking or open flames” signs in the storage or use area. There should be no source of ignition in the storage or use area.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

8. Exposure Controls, Personal Protection

Engineering Controls:	Use Local Exhaust To Prevent Accumulation Above The Exposure Limit
Eye/Face Protection	Safety Goggles Or Glasses
Skin Protection	Protective Gloves: Polyvinyl Alcohol (PVA), Viton® Or Silver Shield®.
Respiratory Protection	Positive Pressure Air Line With Mask And Escape Bottle, Or Self Contained Breathing Apparatus, Should Be Available For General Use
Other/General Protection	Safety Shoes, Safety Shower, Eyewash “Fountain,” Face shield

9. Physical and Chemical Properties

Physical State	Liquid
Vapor Pressure (20° C.)	57.8
Vapor Density (Air = 1)	4.54
Boiling Point	86-88 Oc
Freezing Point	-86.4 Oc
pH	6.7-7.5
Specific Gravity	1.465
Oil/Water Partition Coefficient	Not Available
Solubility (H2O)	0.11 Weight %
Odor Threshold	82 ppm

Odor And Appearance	Colorless liquid with ether-like odour
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10. Stability and Reactivity

Stability:	Stable
Incompatible Materials:	May React Violently With Aluminum, Barium, Nitrogen Tetraoxide, Lithium, Magnesium, Liquid Oxygen, Potassium Hydroxide, Potassium Permanganate, Sodium Hydroxide Or Titanium. Reacts With Water Under Heat And Pressure To Form Hydrochloric Acid.
Hazardous Decomposition Products:	Thermal Decomposition Yields Phosgene And Hydrogen Chloride.
Hazardous Polymerization:	Will Not Occur.

11. Toxicological Information

Eye effects:	Standard Draize test produced moderate reaction in rabbit (20 mg/24h).
Skin effects:	Standard Draize test produced severe reaction in rabbit (20 mg/24h).
Ingestion effects:	oral Id50 dose of 5650 mg/kg in rats. Systemic effects in humans similar to inhalation.
Inhalation effects:	prolonged inhalation may cause headache and drowsiness. High exposures produce narcosis. Exposure of 110ppm for 8 hours produced hallucinations and distorted perceptions in an exposed individual. A cardiac sensitizer, severe exposures may result in ventricular fibrillation and resultant cardiac failure.
Chronic:	chronic exposure to high concentrations is toxic to the liver and kidneys. Chronic inhalation studies above current exposure limits produced carcinogenic effects in rats and mice. Classified as IARC group 3, inadequate evidence to show carcinogenic effect.
Reproductive:	inhalation and ingestion exposures have produced toxic effects to the reproductive systems and fetus in experimental animals.
Mutations:	genetic changes have been produced in mammalian cell assay systems.

12. Ecological Information

No Data Available.

13. Disposal Considerations

Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to us or authorized distributor for proper disposal.

14. Transport Information

Proper Shipping Name:	Trichloroethylene
Hazard Class:	6.1
Identification Number:	UN 1710
Shipping Label:	Keep away from food
Packing Group	lii

15. Regulatory Information

Acute health hazard
Chronic health hazard

16. Other Information

MSDS Creation Date:	July 26, 2015
Revision #1 Date	

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