

MATERIAL SAFETY DATASHEET

TCS(Cleaning Solvent)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name : TCS
 Product Use : Cleaning Solvent

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2. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	% Range
Trichloro Ethylene	79-01-6	>95%

3. HAZARD IDENTIFICATION

	GHS Classification	Hazardous statement
Flammable Liquids	Not Classified	
Skin corrosion/irritation	Category 2	H315
Germ cell mutagenicity	Category 2	H341
Carcinogenicity	Category 1B	H350
Specific target organ toxicity – Single exposure	Category 2	H335
Aspiration hazard	Category 1	H304
Chronic aquatic toxicity	Category 3	H412
Signal word: DANGER		

Label Elements

Hazard pictograms (CLP):



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Human Health Hazards

Inhalation:	Causes irritation to respiratory tract. Has a strong narcotic effect with symptoms of mental confusion, light-headedness, fatigue, nausea, vomiting and headache. Causes formation of carbon monoxide in blood which affects cardiovascular system and central nervous system. Continued exposure may cause increased light-headedness, staggering, unconsciousness, and even death.
Skin Contact:	Causes irritation, redness and pain. Prolonged contact can cause burns. Liquid degreases the skin. May be absorbed through skin.
Eye Contact:	Vapors can cause eye irritation. Contact can produce pain, inflammation and temporal eye damage.
Ingestion:	May cause irritation of the gastrointestinal tract with vomiting. If vomiting results in aspiration, chemical pneumonia could follow. Absorption through gastrointestinal tract may produce symptoms of central nervous system depression ranging from light headedness to unconsciousness.
Chronic Exposure:	Can cause headache, mental confusion, depression, liver effects, kidney effects, bronchitis, loss of appetite, nausea, lack of balance, and visual disturbances. Can cause dermatitis upon prolonged skin contact. TCE may cause cancer in humans.

4. FIRST AID MEASURES

Inhalation:	Remove the victim to fresh air. Monitor respiratory function. If there is breathing difficulty, provide oxygen. If necessary, give artificial respiration. Seek medical attention.
Skin contact:	Remove contaminated clothing and shoes. Wash affected area with plenty of water for at least 15 minutes. Wash contaminated clothing and shoes before reuse. Seek medical attention.
Eye contact:	Wash immediately with running water for at least 15 minutes, keeping the eyelids open. Remove contact lenses if present and easily removable.
Ingestion:	Rinse mouth of victim with water. Give plenty of water to drink. DO NOT INDUCE VOMITING.

Seek medical attention. If irritation persists even after the first aid in any of the above case obtain immediate medical advice

5. FIRE FIGHTING MEASURES

Combustible at high temperature only, Auto-Ignition temperature reported at 556°C

Extinguishing media:	CO ₂ , foam, dry chemicals
Protection of fire-fighters:	Use full protective clothing. Self contained breathing apparatus Forbidden extinguishers: DO NOT USE WATER EXTINGUISHERS.
Combustion products:	Halogenated compounds, oxides of carbon, phosgene
Combustion risks:	During combustion the preparation may release toxic or highly toxic gases. Avoid inhaling the fumes. Protective equipment: Use protection for the airways. Cool the containers exposed to the fire with water.

6. MEASURES IN CASE OF ACCIDENTAL RELEASE

Personal precautionary measures:	Wear appropriate protective equipments
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Environmental precautionary measures: Prevent entry to sewers or streams, dike if needed. Prevent contamination of soil. Consult local authorities.

Procedure for clean Up: Clear all personnel from that area- Keep away from sources of ignition - No smoking. Prevent contamination of waterways. Absorb with an inert dry material and place in an appropriate waste disposal container.

7. HANDLING AND STORAGE

Handling: Avoid contact and inhalation of the vapors. Do not eat or drink while working. Do not smoke while working. Keep away from water or from damp surroundings.

Storage conditions: Keep this product in a dry place below 20°C. Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight. Keep away from flame and sparks. Avoid accumulating electrostatic charge. Instructions as regards storage premises: Cool and adequately ventilated.

Suitable Packing materials: Keep in steel containers, glass containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures: Local exhaust recommended. Explosion protected electrical equipment. Take precautionary measures against static discharges.

Respiratory protection: Use an appropriate NIOSH approved respirator

Gloves: Impervious gloves. Butyl rubber gloves. Silver Shield(R).

Skin protection: Skin contact should be prevented through the use of suitable protective clothing, gloves and footwear, selected for conditions of use and exposure potential.

Eyes: Chemical goggles; also wear a face shield if splashing hazard exists.

Hygienic measures: When using do not eat, drink or smoke. Wash hands after working with the substance.

9. PHYSICAL AND CHEMICAL CHARACTERISTICS

1. Physical State	Liquid
2. Color	Colorless
3. Density @ 0°C	1.464 +/- .05 @ 25°C
4. Solubility	Sparingly soluble in water
5. Shelf Life	12 Months, if stored below 20°C
6. Flash Point	Not available
7. Boiling Point	86-89°C

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions

Hazardous Polymerization: Will not occur

Conditions to Avoid: Direct sparks, flames and other sources of ignition. Do not puncture or incinerate containers

Materials to Avoid: Reacts with strong acids, strong bases, alcohols, amines and water.

Hazardous decomposition products: Halogenated compounds, oxides of carbon, phosgene

Caution : Keep tightly sealed.

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11.DISPOSAL CONSIDERATION

Methods of disposal Disposal according to the local legislation. Through incineration; dangerous pressure build ups may occur in closed Container Combustion in an incinerator for chemical waste.

12.TOXICOLOGICAL INFORMATION

ACUTE TOXICITY: This product may be irritating to the eyes, skin, and respiratory system. This product may cause sensitization in previously exposed individuals and result in contact dermatitis. This product may be absorbed through the skin. Acute inhalation may cause central nervous system depression with drowsiness, dizziness, headache, nausea, vomiting, unconsciousness and coma. Death may occur from respiratory arrest or ventricular fibrillation resulting in primary cardiac failure. Liver and kidney damage may also occur.

CHRONIC TOXICITY: CARCINOGENIC EFFECTS: Classified + (Proven.) by OSHA. Classified 2B (Possible for human.) by IARC. Causes damage to the following organs: lungs, the nervous system, liver, mucous membranes, central nervous system (CNS).

13.ECOLOGICAL INFORMATION

General: Toxic with aquatic life with long lasting effect

14.TRANSPORT INFORMATION

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA

PROPER SHIPPING NAME : Trichloro ethylene

HAZARD CLASS : 6.1

UN NUMBER : 1710

PACKAGING GROUP : III

15.REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Other regulations, limitations and prohibitive regulations

VOC (EU) in %: 95.00 %

VOC (EU) in g/l: 970.0 g/l

Chemical safety assessment: A Chemical Safety Assessment has been carried out.

HIMS RATINGS: HEALTH 2; FIRE 1; REACTIVITY 0

NFPA RATINGS: HEALTH 2; FIRE 1; REACTIVITY 0

16.OTHER INFORMATION

All employees or contractors etc. who use this product must have access to this Safety Data Sheet.

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Date of issue : February 20, 2017

History of revision : msds updated to comply with GHs regulations. Replaces MSDS dated March 30, 2014.

Prepared by : Thejo engineering ltd.