ALLIANCE CHEMICAL

Safety Data Sheet

Trichloroethylene

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Trichloroethylene

Synonyms/Generic Names: TCE, Trichloroethene

Product Number: 8745

Product Use: Industrial, Manufacturing or Laboratory use

Manufacturer: Alliance Chemical
204 S. Edmond St.
Taylor, TX 76574

For More Information Call: 512-365-6838 (Monday-Friday 8:00-4:30)

In Case of Emergency Call: CHEMTEL (800) 255-3924.

2. HAZARDS IDENTIFICATION

OSHA Hazards: Carcinogen, Irritant, Mutagen, Target organ effect

Target Organs: Liver, Central nervous system, Heart, Lungs

Signal Word: Danger

Pictograms:

GHS Classification:

Skin irritation	Category 2
Eye irritation	Category 2A
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 1B
Specific target organ toxicity-single exposure	Category 2
Acute aquatic toxicity	Category 3
Chronic aquatic toxicity	Category 3

GHS Label Elements, including precautionary statements:

Hazard Statements:

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H371	May cause damage to organs.
H412	Harmful to aquatic life with long lasting effects.

Precautionary Statements:

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/vapors/spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
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+P311	IF exposed or concerned: Call a POISON CENTER/doctor/physician.
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.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local regulations.

Potential Health Effects

Eyes	Causes eye irritation.
Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Ingestion	May be harmful if swallowed.

NFPA Ratings

Health	2
Flammability	1
Reactivity	0
Specific hazard	Not Available

HMIS Ratings

Health	2
Fire	1
Reactivity	0
Personal	H

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Trichloroethylene	>99	79-01-6	201-167-4	C_2HCl_3	131.99 g/mol

4. FIRST-AID MEASURES

Eyes	Rinse with plenty of water for at least 15 minutes and seek medical attention.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin	Flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention.
Ingestion	**Do Not Induce Vomiting!** Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Product may be flammable at high temperatures. Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Use appropriate media for adjacent fire. Cool unopened containers with water.

Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
Specific hazards arising from the chemical	Emits toxic fumes (carbon oxides, hydrogen chloride gas) under fire conditions. (See also Stability and Reactivity section).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.
Methods and materials for containment and cleaning up	Neutralize spill. Absorb spill with noncombustible absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

7. HANDLING AND STORAGE

Precautions for safe handling
See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of aerosols.

Conditions for safe storage, including any incompatibilities
Store in cool, dry well ventilated area. Light sensitive. Handle and store under inert gas. Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

Component	Exposure Limits	Basis	Entity
Trichloroethylene	10 ppm 55 mg/m^3	TLV	ACGIH
	25 ppm 135 mg/m^3	STEL	ACGIH
	10 ppm 45 mg/m^3	PEL	OSHA
	10 ppm 45 mg/m^3	REL	NIOSH

TWA: Time Weighted Average over 8 hours of work.
TLV: Threshold Limit Value over 8 hours of work.
REL: Recommended Exposure Limit
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit during x minutes.
IDLH: Immediately Dangerous to Life or Health
WEEL: Workplace Environmental Exposure Levels
CEIL: Ceiling

Personal Protection

Eyes	Wear chemical safety glasses or goggles.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Wear nitrile or rubber gloves, apron or lab coat.
Other	Not Available

Other Recommendations
Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Clear, colorless liquid.
Odor	Not Available
Odor threshold	20 ppm
pH	Not Available
Melting point/freezing point	-87.1°C (-124.8°F)
Initial boiling point and boiling range	86.7°C (188.1°F)
Flash point	Not Available
Evaporation rate	Not Available
Flammability (solid, gas)	Flammable
Upper/lower flammability or explosive limit	UPPER: 8% (V) LOWER: 10.5% (V)
Vapor pressure	58 mm of Hg (@ 20°C)
Vapor density	4.53 (Air = 1)
Density	1.46(Water = 1)
Solubility (ies)	Easily soluble in methanol, diethyl ether, acetone. Very slightly soluble in cold water.
Partition coefficient: n-octanol/water	log Pow: 2.29
Auto-ignition temperature	410°C (770°F)
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Excess heat.
Incompatible Materials	Strong oxidizing agents, strong bases, magnesium.
Hazardous Decomposition Products	Carbon oxides, hydrogen chloride gas.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Trichloroethylene

Skin	LD50 Dermal - rabbit - > 20,000 mg/kg
Eyes	Not Available
Respiratory	LC50 Inhalation - mouse - 4 h - 8450 ppm
Ingestion	LD50 Oral - rat - 4,920 mg/kg

Carcinogenicity

IARC	2A - Group 2A: Probably carcinogenic to humans (Trichloroethylene).
ACGIH	A3: Animal carcinogen (Trichloroethylene).
NTP	Reasonably anticipated to be a human carcinogen (Trichloroethylene).
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Skin	Irritation, redness, itchiness.
Eyes	Irritation, redness, watering eyes, itchiness.
Respiratory	Irritation, coughing, wheezing.
Ingestion	Irritation, nausea, vomiting, diarrhea, narcrosis.

Chronic Toxicity	May cause damage to organs.
Teratogenicity	Passes through the placental barrier in human. Detected in maternal milk in human.
Mutagenicity	Not Available
Embryotoxicity	Not Available
Specific Target Organ Toxicity	Not Available
Reproductive Toxicity	Not Available
Respiratory/Skin Sensitization	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Trichloroethylene

Aquatic Vertebrate	LC50 - Pimephales promelas (fathead minnow) - 41 mg/l - 96.0 h LOEC - other fish - 11 mg/l - 10.0 d NOEC - Oryzias latipes - 40 mg/l - 10.0 d
Aquatic Invertebrate	EC50 - Daphnia magna (Water flea) - 18.00 mg/l - 48 h
Terrestrial	IC50 - Pseudokirchneriella subcapitata (green algae) - 175.00 mg/l - 96 h

Persistence and Degradability	Not Available
Bioaccumulative Potential	Does not bioaccumulate.
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Waste Product or Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residue.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	UN1710, Trichloroethylene, 6.1, pg III
TDG	UN1710, TRICHLOROETHYLENE, 6.1, PG III
IMDG	UN1710, TRICHLOROETHYLENE, 6.1, PG III
Marine Pollutant	No
IATA/ICAO	UN1710, Trichloroethylene, 6.1, pg III

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Listed: Trichloroethylene
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Acute Health Hazard, Chronic Health Hazard
SARA 312	Acute Health Hazard, Chronic Health Hazard
SARA 313	Listed: Trichloroethylene
WHMIS Canada	Class D-1B: Poisonous and infectious material- Immediate and serious effects- Toxic Class D-2A: Poisonous and infectious material- Other effects- Very toxic Class D-2B: Poisonous and infectious material- Other effects- Toxic

16. OTHER INFORMATION