



MATERIAL SAFETY DATA SHEET

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1. CHEMICAL PRODUCT

PRODUCT 1,1,1- **SYNONYMS:** None
NAME: TRICHLOROTRIFLUOROETHANE

2. COMPOSITION, INFORMATION ON INGREDIENTS

Ingredient Name	Formula	CAS #	Concentration	Exposure Limits (PPM)			
				ACGIH TLV	OSHA PEL	MAC	Other STEL
1,1,1 TRICHLOROTRIFLUOROETHANE	C2CL3F3	354-58-5	99+%	NE	NE	NE	NE

Note: NE = NONE ESTABLISHED

S/A = SIMPLE ASPHYXIANT

3. HAZARD IDENTIFICATION

*** EMERGENCY OVERVIEW ***

Flammable liquid and vapor.

May cause irritation to eyes, skin, and mucous membranes.

POTENTIAL HEALTH EFFECTS

ROUTES OF ENTRY: Inhalation , Ingestion

ACUTE EFFECTS: Skin and eye irritation may occur. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

CHRONIC EFFECTS: None known

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: None known

OTHER EFFECTS OF OVEREXPOSURE: None

CARCINOGENICITY (US ONLY):

NTP - No

IARC MONOGRAPHS - No

OSHA REGULATED - No

4. FIRST AID MEASURES

INHALATION: Immediately remove victim to fresh air. If breathing is difficult, give oxygen. If



breathing has stopped, give artificial respiration.

EYE CONTACT: Immediately flush eyes, including under the eyelids, gently but thoroughly with plenty of running water for at least 15 minutes.

SKIN CONTACT: Rinse the affected area with flooding amounts of water and then wash it with soap and water.

INGESTION: Do not induce vomiting. Wash out mouth with water. Have conscious and alert person drink 1 to 2 glasses of water. Contact physician immediately.

IN EVENT OF EXPOSURE, CONSULT A PHYSICIAN

NOTE TO PHYSICIAN: None

5. FIRE FIGHTING MEASURES

FLASH POINT: N/Av

AUTOIGNITION TEMPERATURE: N/Av

FLAMMABLE LIMITS: N/Av

LOWER:

UPPER:

EXTINGUISHING MEDIA: Carbon dioxide, foam, or dry chemical. Water spray.

SPECIAL FIRE FIGHTING INSTRUCTION AND EQUIPMENT: Wear self-contained breathing apparatus and full protective clothing. Keep fire exposed cylinders cool with water spray. If possible, stop the product flow.

HAZARDOUS COMBUSTION PRODUCTS: Toxic carbon monoxide may be given off during combustion.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None

6. ACCIDENTAL RELEASE MEASURES

CLEAN UP PROCEDURES: Evacuate and ventilate area. Shut off source if possible and remove source of heat. Absorb with sand or vermiculite and place in closed containers for disposal.

SPECIALIZED EQUIPMENT: None

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING: Secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders.

PRECAUTIONS TO BE TAKEN IN STORAGE: Store in well ventilated areas. Keep valve protection cap on cylinders when not in use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide adequate general and local exhaust ventilation.

EYE / FACE PROTECTION: Safety glasses A safety shower and eyewash station should be readily available.

SKIN PROTECTION: Wear suitable protective clothing.

RESPIRATORY PROTECTION: Use a self-contained breathing apparatus in case of emergency or non-routine use.

OTHER PROTECTIVE EQUIPMENT: Safety shoes when handling cylinders.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless

ODOR: Slight ethereal odor.

PHYSICAL PRESSURE: Liquid

VAPOR PRESSURE: @25 deg. C: 270.7 mm Hg

VAPOR DENSITY (AIR=1): N/Av

BOILING POINT (C): N/Av

SOLUBILITY IN WATER: Insoluble

SPECIFIC GRAVITY (H₂O=1): 1.579 g/cm³

EVAPORATION RATE: N/Av

ODOR THRESHOLD: N/Av

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal storage conditions.

CONDITIONS TO AVOID: Storage in poorly ventilated areas. Storage near a heat source.

MATERIALS TO AVOID: Strong oxidizing agents. Mg and Al may also be reactive.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: Toxic carbon monoxide and hydrogen fluoride. Hydrogen chloride. Phosgene.

11. TOXICOLOGICAL INFORMATION

LETHAL CONCENTRATION (LC₅₀): 65,000 ppm, Rat 1 hour.

LETHAL DOSE 50 (LD50): N/Ap

TERATOGENICITY: N/Ap

REPRODUCTIVE EFFECTS: N/Ap

MUTAGENICITY: N/Ap

12. ECOLOGICAL INFORMATION

No adverse ecological effects are expected.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose of non-refillable cylinders in accordance with federal, state and local regulations. Allow gas to vent slowly to atmosphere in an unconfined area or exhaust hood. If the cylinders are the refillable type, return cylinders to supplier with any valve outlet plugs or caps secured and valve protection caps in place.

14. TRANSPORT INFORMATION

CONCENTRATION: 99+%

DOT DESCRIPTION (US ONLY):

PROPER SHIPPING NAME: Flammable liquids, n.o.s.

HAZARD CLASS: 3 (flammable), Packing group I.

IDENTIFICATION NUMBER: UN1993

REPORTABLE QUANTITIES: None

LABELING: FLAMMABLE LIQUID

ADR / RID (EU Only): 3,31

SPECIAL PRECAUTIONS: Cylinders should be transported in a secure upright position in a well ventilated truck.

15. REGULATORY INFORMATION

OSHA: Process Safety Management: Material is not listed in appendix A of 29 CFR 1910.119 as highly hazardous chemical.

TSCA: Material is listed in TSCA inventory.

SARA: The threshold planning quantity for material is 10,000 lbs.

EU NUMBER: N/Av

NUMBER IN ANNEX 1 OF DIR 67/548: Not listed in annex 1.

EU CLASSIFICATION: N/Av

R: N/Av

S: 24/25

16. OTHER INFORMATION

OTHER PRECAUTIONS: Protect containers from physical damage. Do not deface cylinders or labels. Cylinders should be refilled by qualified producers of compressed gas. Shipment of a compressed gas cylinder which has not been filled by the owner or with his written consent is a violation of federal law (49 CFR).

ABBREVIATIONS: N/Ap - Not Applicable N/Av - Not Available SA - Simple Asphyxiant NE - None Established

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