

SDS – SAFETY DATA SHEET

1. IDENTIFICATION

Product Identifier: 2,2,2-TRIFLUOROETHYLAMINE

Synonyms: TFEA, 2-Amino-1,1,1-Trifluoroethane

Chemical Formula: CF₃CH₂NH₂

Recommended Use of the Chemical: Industrial Use

Uses Advised Against: Incompatible with strong acids and oxidizing agents

Manufacturer / Supplier: HALOCARBON PRODUCTS CORPORATION

Address: 1100 Dittman Court, North; Augusta, SC 29841; USA

Website: www.halocarbon.com

Email: sds@halocarbon.com

Phone: (803) 278-3504

Emergency CHEMTREC Phone: (800) 424-9300 United States / 001-703-527-3887 International and Maritime

2. HAZARD(S) IDENTIFICATION

Classification of the Substance or Mixture:

Flammable liquids (Category 2)

Acute toxicity, Oral (Category 4)

Skin corrosion (Category 1B)

Serious eye damage (Category 1)

Acute aquatic toxicity (Category 3)

Chronic aquatic toxicity (Category 3)

Risk Phrases:

R12: Extremely flammable.

R22: Harmful if swallowed.

R34: Causes burns.

R52/53: Harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Label Elements:

Signal Word: Danger

Pictogram:



Hazard Statements:

H225: Highly flammable liquid and vapor.

H302: Harmful if swallowed.

H314: Causes severe skin burns and eye damage.

H412: Harmful to aquatic life with long lasting effects.

Precautionary Statements:

P210: Keep away from heat / sparks / open flames / hot surfaces. - No smoking.

P233: Keep container tightly closed.

P240: Ground/bond container and receiving equipment.

P241: Use explosion-proof electrical / ventilating / lighting / equipment.

P242: Use only non-sparking tools.
 P243: Take precautionary measures against static discharge.
 P264: Wash skin 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.
 P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
 P301 + P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303 + P361 + P353: IF ON SKIN (or hair): Remove / take off immediately all contaminated clothing. Rinse skin with water / shower.
 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.
 P321: Specific treatment (see supplemental first aid instructions on this label.)
 P363: Wash contaminated clothing before reuse.
 P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
 P403 + P235: Store in a well-ventilated place. Keep cool.
 P501: Dispose of contents / container to an approved waste disposal plant.

Other Hazards:

Substance Meets the Criteria for PBT According to Regulation (EC) No. 1907/2006 Annex XIII:

PBT: Not available (see Section 12)

Substance Meets the Criteria for vPvB According to Regulation (EC) No. 1907/2006 Annex XIII:

vPvB: Not available (see Section 12)

Other Hazards Which Do Not Result in Classification: Not available

3. COMPOSITION INFORMATION / INGREDIENTS

Ingredient	CAS Number	EC Number	Percent
2,2,2-Trifluoroethylamine	753-90-2	212-041-3	> 99%

4. FIRST-AID MEASURES

Description of First Aid Measures:

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give Oxygen. Seek medical help.

Ingestion: Not an expected route of exposure. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Rinse mouth with water. Seek medical help.

Skin Contact: Wash off with soap and plenty of water. Remove contaminated clothing and shoes immediately. Seek medical help.

Eye Contact: Flush eyes immediately with water for at least 15 minutes. Seek medical help.

Most Important Symptoms and Effects, Both Acute and Delayed:

Potential Acute Health Effects: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated.

Potential Acute Health Effects:

Inhalation: Harmful if inhaled. Material is extremely destructive to tissue of mucous membranes and upper respiratory tract. Cough, shortness of breath, headache, and nausea.

Ingestion: Harmful if swallowed. Material is extremely destructive to tissue of mucous membranes and upper respiratory tract. Cough, shortness of breath, headache, and nausea.

Skin Contact: Harmful if absorbed through the skin. Material is extremely destructive to skin.

Eye Contact: Extremely destructive to eye tissue.

Over-exposure Signs / Symptoms:

Inhalation: None known with respect to humans

Ingestion: None known with respect to humans

Skin Contact: None known with respect to humans

Eye Contact: None known with respect to humans

5. FIRE-FIGHTING MEASURES

Extinguishing Media:

Suitable Extinguishing Media: Use water spray, dry chemical, Carbon Dioxide, or alcohol-resistant foam.

Unsuitable Extinguishing Media: No information available

Special Hazards Arising From the Substance or Mixture:

Hazards From the Substance or Mixture: Carbon oxides, Nitrogen oxides (NOx), Hydrogen Fluoride

Hazardous Thermal Decomposition Products: Thermal decomposition products are toxic and corrosive. See Section 10.

Advice for Fire-Fighters:

Special Precautions for Fire-Fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Use water spray to cool unopened containers.

Special Protective Equipment for Fire-Fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures: Avoid breathing vapors, mist or gas. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

Environmental Precautions: Prevent further leakage or spillage if it is safe to do so. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains.

Methods and Materials for Containment and Cleaning Up: Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with dry lime, sand, or soda ash and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! Wash area after pickup is complete.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Contents of container may be under pressure and may release dangerous aerosol, vapor or fumes when the container is opened. Do not stand directly above the container while opening. Avoid breathing or contact with fumes. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid.) Observe all warnings and precautions listed for the product.

Conditions for Safe Storage, Including Any Incompatibilities: Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Separate from incompatibles. Keep out of reach of children. See Section 10 for additional details related to storage concerns. Recommended storage temperature 2 - 8C (35.6 – 46.4F).

Specific End Uses: Industrial Use

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Airborne Exposure Limits: Contains no substances with occupational exposure limit values. However, a published report put the LC50 for mice at 4.17 mg/l for 2 hours.

Ventilation System: A system of local and / or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved): Self-contained breathing apparatus for emergency use.

Skin Protection: Wear impervious gloves, and protective clothing.

Eye Protection: Use safety glasses with side shields. Maintain eye wash fountain and quick-drench facilities in work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear liquid

Odor: Ammonia odor

Odor Threshold: Not determined

pH: No data available

Melting Point: No data available

Boiling Point / Boiling Range: 37C (98.6F)

Flash Point: -16C (3F) closed cup

Evaporation Rate (BuAC=1): No data available

Flammability: Flammable

Upper / Lower Flammability or Explosive Limits: No data available

Vapor Pressure (mm Hg): 450 mm/Hg 21.1C (70F)

Vapor Density (Air=1): 1.25

Relative Density: 1.245 g/cm³

Solubility: Complete

Partition Coefficient: n-octanol / water: log Pow 0.481

Auto-ignition Temperature: No data available

Decomposition Temperature: No data available

Viscosity: No data available

Explosive Properties: Not determined

Oxidizing Properties: Not determined

Other Information: No specific data

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical Stability: Stable under normal temperature conditions and recommended use

Possibility of Hazardous Reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to Avoid: Heat, flames, sparks, extremes of temperature, direct sunlight, and incompatibles

Incompatible Materials: Strong acids and oxidizing agents

Hazardous Decomposition Products: Halogen acids are formed by thermal decomposition. These include toxic fumes of Carbon Dioxide, Carbon Monoxide, and oxidizing agents. In the event of a fire, see Section 5.

11. TOXICOLOGICAL INFORMATION

Potential Health Effects:

Inhalation: Harmful if inhaled. Material is extremely destructive to tissue of mucous membranes and upper respiratory tract. Cough, shortness of breath, headache, and nausea.

Ingestion: Harmful if swallowed. Material is extremely destructive to tissue of mucous membranes and upper respiratory tract. Cough, shortness of breath, headache, and nausea.

Skin Contact: Harmful if absorbed through the skin. Material is extremely destructive to skin.

Eye Contact: Extremely destructive to eye tissue.

Chronic Exposure: No known effects

Aggravation of Pre-existing Conditions: No known effects

Specific Target Organ Toxicity - Single Exposure (Globally Harmonized System): No data available

Specific Target Organ Toxicity - Repeated Exposure (Globally Harmonized System): No data available

Germ Cell Mutagenicity: No data available

Reproductive Toxicity: No data available

Aspiration Hazard: No data available

Numerical Measures of Toxicity: Cancer Lists: NTP Carcinogen

Ingredient	Known	Anticipated	IARC Category
2,2,2-Trifluoroethylamine (753-90-2)	No	No	None

Acute Toxicity: A preliminary study of mice gave no deaths upon exposure of 1000 ppm Trifluoroethylamine vapor for 30 minutes. A published report put the LC50 for mice at 4.17 mg/l for 2 hours.

12. ECOLOGICAL INFORMATION

Ecotoxicity: No data available

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available

Mobility in Soil: No data available

Results of PBT and vPvB assessment: PBT / vPvB assessment not available as chemical safety assessment not required / not conducted.

Other adverse effects: No data available

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods: Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. TRANSPORT INFORMATION

UN Number: UN2733

UN Proper Shipping Name: AMINES, FLAMMABLE, CORROSIVE, N.O.S. (2,2,2-TRIFLUOROETHYLAMINE)

Packing Group: II

Land Transport ADR/RID and GGVS/GGVE (Cross Border / Domestic)

Transport Hazard Class(es): 3 (8)

Maritime Transport IMDG/GGVSea

Transport Hazard Class(es): 3 (8)

Marine Pollutant: No

Air Transport ICAO-TI and IATA-DGR

Transport Hazard Class(es): 3 (8)

Transport in Bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable

Special Precautions for User: No additional information

15. REGULATORY INFORMATION

Federal, State & International Regulations - Part 1

Ingredient	SARA 302		SARA 313	
	RQ	TPQ	List Chemical	Catg.
2,2,2-Trifluoroethylamine (753-90-2)	No	No	No	No

Federal, State & International Regulations - Part 2

Ingredient	RCRA		TSCA
	CERCLA	261.33	8(d)
2,2,2-Trifluoroethylamine (753-90-2)	No	No	No

Chemical Weapons Convention: No	TSCA 12(b): No		CDTA: No
SARA 311/312: Acute: Yes	Chronic: No	Fire: Yes	Pressure: No
Reactivity: No	Pure / Liquid		

16. OTHER INFORMATION

Effective Date: 05/01/15 – Standardized for GHS / REACH

Previous Revisions: 09/11/07 – First Issue

Disclaimer: Halocarbon believes the information given here to be correct. However, we cannot guarantee its accuracy or be responsible for loss or damage that result from the use of such information.