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HALOCARBON 134A- MATERIAL SAFETY DATA SHEET

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24 Hour EMERGENCY CONTACT

U.S- CHEMTREC 1-800-424-9300

CANADA- CANUTEC 613-996-6666

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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Matheson Tri-Gas, Inc.

The telephone numbers listed below are emergency numbers, please contact your local branch for routine inquiries.

USA

959 Route 46 East
Parsippany, New Jersey
07054-0624 USA
Phone: 973-257-1100

CANADA

530 Watson Street
Whitby, Ontario
L1N 5R9 Canada
Phone: 905-668-3570

SUBSTANCE: HALOCARBON 134A

SYMBOL: C₂H₂F₄

TRADE NAMES/SYNONYMS:

ETHANE, 1,1,1,2-TETRAFLUORO-; 1,2,2,2-TETRAFLUOROETHANE; R 134A; QUIK-FREEZE;
E-SERIES(R) FREEZ-IT(R) 2000; C₂H₂F₄; MAT76816

CHEMICAL FAMILY: halogenated, aliphatic

CREATION DATE: Jan 24 1989

REVISION DATE: Mar 16 1999

2. COMPOSITION, INFORMATION ON INGREDIENTS

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COMPONENT: 1,1,1,2-TETRAFLUOROETHANE

CAS NUMBER: 811-97-2

EC NUMBER (EINECS): 212-377-0

PERCENTAGE: 100.0

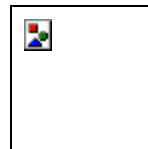
3. HAZARDS IDENTIFICATION

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NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=0 REACTIVITY=0

EC CLASSIFICATION (ASSIGNED):

No classification assigned.



EMERGENCY OVERVIEW:

Color: colorless

Physical Form: gas

Odor: sweet odor

Major Health Hazards: No significant target effects reported.

Physical Hazards: Containers may rupture or explode if exposed to heat.

POTENTIAL HEALTH EFFECTS:

INHALATION:

Short Term Exposure: frostbite

Long Term Exposure: no information is available

SKIN CONTACT:

Short Term Exposure: frostbite

Long Term Exposure: no information is available

EYE CONTACT:

Short Term Exposure: no information on significant adverse effects

Long Term Exposure: no information is available

INGESTION:

Short Term Exposure: no information on significant adverse effects

Long Term Exposure: no information is available

CARCINOGEN STATUS:

OSHA: N

NTP: N

IARC: N

4. FIRST AID MEASURES

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INHALATION:

When safe to enter area, remove from exposure. Use a bag valve mask or similar device to perform artificial respiration (rescue breathing) if needed. Keep warm and at rest. Get medical attention immediately.

SKIN CONTACT:

Wash if needed. If frostbite, freezing, or cryogenic burns occur, warm affected area in warm water. If this is not available, gently wrap affected parts in blankets. Allow circulation to return naturally. Get medical attention immediately.

EYE CONTACT:

It is unlikely that emergency treatment will be required. Wash with large amounts of water or normal saline until no evidence of chemical remains (at least 15-20 minutes). Get medical attention immediately.

INGESTION:

It is unlikely that emergency treatment will be required. Get medical attention, if needed.

NOTE TO PHYSICIAN:

For inhalation, consider oxygen.

5. FIRE FIGHTING MEASURES

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FIRE AND EXPLOSION HAZARDS:

Negligible fire hazard. Containers may rupture or explode if exposed to heat.

EXTINGUISHING MEDIA:

carbon dioxide, regular dry chemical

Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING:

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Use extinguishing agents appropriate for surrounding fire. Cool containers with water spray until well after the fire is out. Apply water from

a protected location or from a safe distance. Do not get water directly on material. Reduce vapors with water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Consider downwind evacuation if material is leaking.

AUTOIGNITION:
>1382 F (>750 C)

6. ACCIDENTAL RELEASE MEASURES

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OCCUPATIONAL RELEASE:

Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.

7. HANDLING AND STORAGE

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Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Avoid contact with light. Store below 49 C. Do not puncture or burn containers, even when empty. Shelf life is 1 year. Keep separated from incompatible substances.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

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EXPOSURE LIMITS:

1,1,1,2-TETRAFLUOROETHANE:

1000 ppm (4184 mg/m³) AIHA recommended TWA

VENTILATION:

Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

EYE PROTECTION:

For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING:

Wear appropriate chemical resistant clothing.

GLOVES:

Wear insulated gloves.

RESPIRATOR:

Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Any self-contained breathing apparatus with a full facepiece.

9. PHYSICAL AND CHEMICAL PROPERTIES

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PHYSICAL STATE: gas

APPEARANCE: clear

COLOR: colorless

ODOR: sweet odor

MOLECULAR WEIGHT: 102.03

MOLECULAR FORMULA: F-C-H₂-C-F₃

BOILING POINT: -17 F (-27 C)

FREEZING POINT: Not available

VAPOR PRESSURE: 4963 mmHg @ 25 C

VAPOR DENSITY (air=1): 3.18

SPECIFIC GRAVITY: Not applicable

DENSITY: 1.21 g/mL @ 25 C

WATER SOLUBILITY: 0.15% @ 25 C

PH: Not applicable

VOLATILITY: 100%

ODOR THRESHOLD: Not available

EVAPORATION RATE: Not applicable

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable

10. STABILITY AND REACTIVITY

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REACTIVITY:

Stable at normal temperatures and pressure.

CONDITIONS TO AVOID:

Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.

INCOMPATIBILITIES:

metals, oxidizing materials

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: halogenated compounds, oxides of carbon

POLYMERIZATION:

Will not polymerize.

11. TOXICOLOGICAL INFORMATION[Up to Table of Contents](#)**1,1,1,2-TETRAFLUOROETHANE:****MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:**

heart or cardiovascular disorders, heart problems, immune system disorders or allergies, respiratory disorders, skin disorders and allergies

ADDITIONAL DATA:

Stimulants such as epinephrine may induce ventricular fibrillation.

12. ECOLOGICAL INFORMATION[Up to Table of Contents](#)

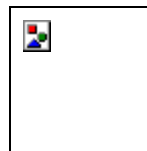
Not available

13. DISPOSAL CONSIDERATIONS[Up to Table of Contents](#)

Dispose in accordance with all applicable regulations.

14. TRANSPORT INFORMATION[Up to Table of Contents](#)**U.S. DOT 49 CFR 172.101. SHIPPING NAME-UN NUMBER; HAZARD CLASS; PACKING GROUP; LABEL:**

Compressed gases, n.o.s. (1,1,1,2-tetrafluoroethane)-UN1956; 2.2; Nonflammable gas



15. REGULATORY INFORMATION[Up to Table of Contents](#)**U.S. REGULATIONS:**

TSCA INVENTORY STATUS: Y

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CERCLA SECTION 103 (40CFR302.4): N

SARA SECTION 302 (40CFR355.30): N

SARA SECTION 304 (40CFR355.40): N

SARA SECTION 313 (40CFR372.65): N

SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40CFR370.21):

ACUTE: N

CHRONIC: N

FIRE: N

REACTIVE: N

SUDDEN RELEASE: Y

OSHA PROCESS SAFETY (29CFR1910.119): N

STATE REGULATIONS:

California Proposition 65: N

EUROPEAN REGULATIONS:

EC NUMBER (EINECS): 212-377-0

16. OTHER INFORMATION

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