**Section 1 - IDENTIFICATION**

Manufacturer Information

SPECIALTY CHEMICAL PRODUCTS
1407 Pennsylvania Ave.
South Houston, TX 77587

General Information: 713-944-0900

Emergency #: 1-800-424-9300 (CHEMTREC)

Product Identifier: HALOCARBON 14

Trade Names/Synonyms

- TETRAFLUOROMETHANE;
- MTG MSDS 40;
- CARBON TETRAFLUORIDE;
- CARBON FLUORIDE (CF4);
- CARBON FLUORIDE;
- FC 14;
- PERFLUOROMETHANE;
- R 14;
- R 14 (REFRIGERANT);
- METHANE,
- TETRAFLUORO-;
- FREON 14;
- TETRAFLUOROCARBON;
- UN 1982;
- CF4;
- RTECS: FG4920000

Chemical Family

- halogenated,
- aliphatic

Product Use

- industrial

Restrictions on Use

- none known

**Section 2 - HAZARDS IDENTIFICATION**

GHS Classification

- Gas under pressure, liquefied gas

GHS LABEL ELEMENTS

Symbol(s)

- 

Signal Word

- WARNING

Hazard Statement(s)

- Contains gas under pressure; may explode if heated

Precautionary Statement(s)

- Protect from sunlight. Store in a well-ventilated place.

**Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>CAS</th>
<th>Component</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-73-0</td>
<td>HALOCARBON 14</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Component Related Regulatory Information
This product may be regulated, have exposure limits or other information identified as the following: Fluorides.

* * *Section 4 - FIRST AID MEASURES* * *

Inhalation
If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

Skin
If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

Eyes
Wash eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of chemical remains. Get medical attention immediately.

Ingestion
If a large amount is swallowed, get medical attention.

Note to Physicians
For inhalation, consider oxygen.

Symptoms: Immediate
suffocation

Symptoms: Delayed
No data available.

* * *Section 5 - FIRE FIGHTING MEASURES* * *

See Section 9 for Flammability Properties

Specific Hazards Arising from the Chemical
Negligible fire hazard.

Extinguishing Media
carbon dioxide, regular dry chemical
Large fires: Use regular foam or flood with fine water spray.

Unsuitable Extinguishing Media
None known.

Protective Equipment and Precautions for Firefighters
Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Fire Fighting Measures
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.

Hazardous Combustion Products
Combustion: halogenated compounds, hydrogen fluoride

* * *Section 6 - ACCIDENTAL RELEASE MEASURES* * *

Personal Precautions
Wear personal protective clothing and equipment, see Section 8.
**Environmental Precautions**
Avoid release to the environment.

**Methods for Containment**
Reduce vapors with water spray. Eliminate all ignition sources if safe to do so. Keep unnecessary people away, isolate hazard area and deny entry.

**Cleanup Methods**
Avoid heat, flames, sparks and other sources of ignition. Ventilate closed spaces before entering. Damaged cylinders should be handled only by specialists.

**Section 7 - HANDLING AND STORAGE**

**Handling Procedures**
Avoid breathing gas. Use only with adequate ventilation.

**Storage Procedures**

**Incompatibilities**
metals

**Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Component Exposure Limits**
HALOCARBON 14 (75-73-0)
- ACGIH: 2.5 mg/m³ TWA (as F, related to Fluorides)
- OSHA (Final): 2.5 mg/m³ TWA (as F); 2.5 mg/m³ TWA (dust, related to Fluorides)
- OSHA (Vacated): 2.5 mg/m³ TWA (related to Fluorides)

**Component Biological Limit Values**
HALOCARBON 14 (75-73-0)
- ACGIH: 2 mg/L Medium: urine Time: prior to shift Parameter: Fluoride (background, nonspecific); 3 mg/L Medium: urine Time: end of shift Parameter: Fluoride (background, nonspecific, related to Fluorides)

**Engineering Controls**
Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

**PERSONAL PROTECTIVE EQUIPMENT**

**Eyes/Face**
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.

**Protective Clothing**
For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

**Glove Recommendations**
Wear insulated gloves.

**Respiratory Protection**
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.

*For Unknown Concentrations or Immediately Dangerous to Life or Health -*
**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**

- **Physical State**: Gas
- **Color**: colorless
- **Odor**: odorless
- **pH**: Not available
- **Boiling Point**: -128 °C
- **Evaporation Rate**: Not available
- **Vapor Density (air = 1)**: 3.05
- **Water Solubility**: 0.0015 % @ 25 °C
- **Auto Ignition**: Not available
- **Molecular Weight**: 88.01

**Appearance**: Not available

**Physical Form**: gas

**Odor Threshold**: Not available

**Melting/Freezing Point**: -187 °C

**Decomposition**: Not available

**Vapor Pressure**: 799 mmHg @ -127 °C

**Specific Gravity (water=1)**: 1.89 @ -183 °C

**Log KOW**: 1.18

**Viscosity**: 0.170 cP @ -60 °C

**Molecular Formula**: C-F4

**Section 10 - STABILITY AND REACTIVITY**

- **Chemical Stability**: Stable at normal temperatures and pressure.

- **Conditions to Avoid**: Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.

- **Possibility of Hazardous Reactions**: Will not polymerize.

- **Incompatible Materials**: metals

- **Hazardous Decomposition**: Combustion: halogenated compounds, hydrogen fluoride

**Section 11 - TOXICOLOGICAL INFORMATION**

- **Acute and Chronic Toxicity**

  **Component Analysis - LD50/LC50**
  
  The components of this material have been reviewed in various sources and no selected endpoints have been identified.

  **RTECS Acute Toxicity (selected)**
  
  The components of this material have been reviewed and RTECS publishes no data as of the date on this document.

- **Immediate Effects**: suffocation

- **Delayed Effects**: No data available.

- **Irritation/Corrosivity Data**
  
  No animal testing data available for skin or eyes.

- **RTECS Irritation**
  
  The components of this material have been reviewed and RTECS publishes no data as of the date on this document.
Respiratory Sensitizer
No data available.

Dermal Sensitizer
No data available.

Carcinogenicity

Component Carcinogenicity
HALOCARBON 14 (75-73-0)
ACGIH:  A4 - Not Classifiable as a Human Carcinogen (related to Fluorides)

Mutagenic Data
No data available.

Reproductive Effects Data
No data available.

Tumorigenic Data
No data available.

Specific Target Organ Toxicity - Single Exposure
simple asphyxiant

Specific Target Organ Toxicity -Repeated Exposure
No data available.

Aspiration Hazard
Not applicable.

Medical Conditions Aggravated by Exposure
None known.

***Section 12 - ECOLOGICAL INFORMATION***

Component Analysis - Aquatic Toxicity
No LOLI ecotoxicity data are available for this product's components.

Fish Toxicity
No data available.

Invertebrate Toxicity
No data available.

Algal Toxicity
No data available.

Persistence and Degradability
No data available.

Bioaccumulative Potential
No data available.

Mobility in Environmental Media
No data available.

***Section 13 - DISPOSAL CONSIDERATIONS***

Disposal Methods
Dispose in accordance with all applicable regulations.

Component Waste Numbers
The U.S. EPA has not published waste numbers for this product's components.

***Section 14 - TRANSPORT INFORMATION***

US DOT Information
Shipping Name: Tetrafluoromethane
UN/NA #: UN1982  Hazard Class: 2.2
Safety Data Sheet

Material Name: HALOCARBON 14

Required Label(s): 2.2

IMDG Information
- Shipping Name: Tetrafluoromethane
- UN #: UN1982
- Hazard Class: 2.2

* * *Section 15 - REGULATORY INFORMATION* * *

Component Analysis

U.S. Federal Regulations
None of this product's components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA 311/312 Hazardous Categories

- Acute Health: Yes
- Chronic Health: No
- Fire: No
- Pressure: Yes
- Reactive: No

U.S. State Regulations
The following components appear on one or more of the following state hazardous substances lists:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>HALOCARBON 14 ('related to: Fluorides')</td>
<td>75-73-0</td>
<td>Yes¹</td>
<td>No</td>
<td>Yes¹</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Not regulated under California Proposition 65

Component Analysis - Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>US</th>
<th>CA</th>
<th>EU</th>
<th>AU</th>
<th>PH</th>
<th>JP</th>
<th>KR</th>
<th>CN</th>
<th>NZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>HALOCARBON 14</td>
<td>75-73-0</td>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

* * *Section 16 - OTHER INFORMATION* * *

NFPA Ratings: Health: 1 Fire: 0 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe
Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR’s Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

Other Information

Specialty Chemical Products makes no express or implied warranties, guarantees or representations regarding the product or the information herein, including but not limited to any implied warranty or merchantability or fitness for use. Specialty Chemical Products shall not be liable for any personal injury, property or other damages of any nature, whether compensatory, consequential, exemplary, or otherwise, resulting from any publication, use or reliance upon the information herein.

End of Sheet 00232357