Material Safety Data Sheet
Trifluoroacetic acid

ACC# 24050

Section 1 - Chemical Product and Company Identification

**MSDS Name:** Trifluoroacetic acid  
**Product Grade:** SQ  
**Catalog Numbers:** 28464  
**Synonyms:** Trifluoroethanoic acid; Perfluoroacetic acid; TFA.  
**Company Identification:**  
Fisher Scientific  
Part of Thermo Fisher Scientific  
Thermo Fisher Scientific India Pvt. Ltd  
403-404, B-wing, Delphi,  
Hiranandani Business Park,  
Powai (E), Mumbai 400076, INDIA.

For information, call: 022 – 6680 3001/2, Call India Toll Free – 1 800 209 7001  
**Emergency Number:** 022-66803004/14

**For CHEMTREC assistance,** call: 800-424-9300 [International]  
**For International CHEMTREC assistance,** call: 703-527-3887 [International]

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>76-05-1</td>
<td>Trifluoroacetic acid</td>
<td>99</td>
<td>200-929-3</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

Appearance: colorless clear liquid.  
**Danger!** Both liquid and vapor can cause severe burns to all parts of the body. Harmful if inhaled. Hygroscopic (absorbs moisture from the air).  
**Target Organs:** Respiratory system, eyes, skin, mucous membranes.
**Potential Health Effects**

**Eye:** Causes severe eye burns. May cause blindness. Causes redness and pain.

**Skin:** Causes skin burns. Causes redness and pain. Prolonged contact may lead to necrosis.

**Ingestion:** Harmful if swallowed. May cause severe and permanent damage to the digestive tract. Causes gastrointestinal tract burns. May cause perforation of the digestive tract. Causes cough, sore throat, chest pain, and lightheadedness.

**Inhalation:** Harmful if inhaled. Causes chemical burns to the respiratory tract. Inhalation may be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema.

**Chronic:** Repeated inhalation may cause chronic bronchitis.

---

### Section 4 - First Aid Measures

**Eyes:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.

**Skin:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

**Ingestion:** If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**Notes to Physician:** Treat symptomatically and supportively.

---

### Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Substance is noncombustible. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated.

**Extinguishing Media:** For small fires, use dry chemical, carbon dioxide, or water spray. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray.

**Flash Point:** Not available.

**Autoignition Temperature:** Not available.

**Explosion Limits, Lower:** Not available.
Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation. Approach spill from upwind. Keep unnecessary and unprotected personnel away. This material is a water pollutant and should not be emptied into drains.

Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Discard contaminated shoes. Keep away from strong bases and metals.

**Storage:** Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances. Corrosives area. Keep containers tightly closed. Store protected from moisture.

Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

**Exposure Limits**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trifluoroacetic acid</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

**OSHA Vacated PELs:** Trifluoroacetic acid: No OSHA Vacated PELs are listed for this chemical.

**Personal Protective Equipment**
**Eyes:** Wear chemical splash goggles and face shield.
**Skin:** Wear appropriate protective gloves to prevent skin exposure.
**Clothing:** Wear appropriate protective clothing to prevent skin exposure.
**Respirators:** A respiratory protection program that meets OSHA’s 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

### Section 9 - Physical and Chemical Properties

**Physical State:** Clear liquid  
**Appearance:** Colorless  
**Odor:** Pungent odor  
**pH:** CA.2 (100 g/L aq. sol.)  
**Vapor Pressure:** 107 mbar @ 25 deg C  
**Vapor Density:** 3.9  
**Evaporation Rate:** Not available.  
**Viscosity:** 0.813 cP @ 25 deg C  
**Boiling Point:** 72 deg C @ 760 mm Hg  
**Freezing/Melting Point:** -15 deg C  
**Decomposition Temperature:** Not available.  
**Solubility:** Miscible.  
**Specific Gravity/Density:** 1.535 g/ml  
**Molecular Formula:** C2HF3O2  
**Molecular Weight:** 114.02

### Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures. Hygroscopic: absorbs moisture or water from the air. Fumes on contact with air.  
**Conditions to Avoid:** Incompatible materials, light, excess heat, exposure to moist air or water.  
**Incompatibilities with Other Materials:** Metals, strong bases, strong oxidizing agents, sulfuric acid, amines, isocyanates, alkylene oxides, epichlorohydrin, reducing agents, acids, caustics (e.g. ammonia, ammonium hydroxide, calcium hydroxide, potassium hydroxide, sodium hydroxide).  
**Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide, hydrogen fluoride gas.  
**Hazardous Polymerization:** Has not been reported

### Section 11 - Toxicological Information
**RTECS#:**
CAS# 76-05-1: AJ9625000

**LD50/LC50:**
CAS# 76-05-1:
  - Inhalation, mouse: LC50 = 13500 mg/m3;
  - Inhalation, rat: LC50 = 10 gm/m3;

**Carcinogenicity:**
CAS# 76-05-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information available.

**Teratogenicity:** No information available.

**Reproductive Effects:** See actual entry in RTECS for complete information.

**Mutagenicity:** See actual entry in RTECS for complete information.

**Neurotoxicity:** No information available.

**Other Studies:**

Section 12 - Ecological Information

**Ecotoxicity:** No data available. No information available.

**Environmental:** May cause long-term adverse effects in the aquatic environment. Harmful to aquatic organisms.

**Physical:** No information available.

**Other:** No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

Section 14 - Transport Information
Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 76-05-1 is listed on the TSCA inventory.

Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.

Section 12b
None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.

SARA Codes
CAS # 76-05-1: immediate.

Section 313
No chemicals are reportable under Section 313.

Clean Air Act:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depleters.
This material does not contain any Class 2 Ozone depleters.

Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.

STATE
CAS# 76-05-1 can be found on the following state right to know lists: New Jersey.

California Prop 65
California No Significant Risk Level: None of the chemicals in this product are listed.
European/International Regulations
European Labeling in Accordance with EC Directives

Hazard Symbols:
  C

Risk Phrases:
  R 35 Causes severe burns.
  R 20 Harmful by inhalation.
  R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:
  S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
  S 27 Take off immediately all contaminated clothing.
  S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
  S 9 Keep container in a well-ventilated place.
  S 28A After contact with skin, wash immediately with plenty of water.
  S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)
CAS# 76-05-1: 2

Canada - DSL/NDSL
CAS# 76-05-1 is listed on Canada's DSL List.

Canada - WHMIS
This product has a WHMIS classification of D1B, E.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List
CAS# 76-05-1 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: October 2013
Revision Date: October 2018

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.