

## SAFETY DATA SHEET

Creation Date 24-Sep-2010

Revision Date 15-Jul-2024

Revision Number 6

### 1. Identification

**Product Name** Trifluoroacetic anhydride

**Cat No. :** AC147810000; AC147810025; AC147810250; AC147811000;  
AC147812500; AC147812501; AC147815000

**CAS No** 407-25-0  
**Synonyms** TFAA

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

#### Details of the supplier of the safety data sheet

##### Company

Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

##### **Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

### 2. Hazard(s) identification

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute Inhalation Toxicity - Vapors	Category 4
Skin Corrosion/Irritation	Category 1 A
Serious Eye Damage/Eye Irritation	Category 1
Reproductive Toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	

#### Label Elements

**Signal Word**  
Danger

**Hazard Statements**

Causes severe skin burns and eye damage

May cause respiratory irritation

Harmful if inhaled

Suspected of damaging the unborn child

**Precautionary Statements****Prevention**

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Use only outdoors or in a well-ventilated area

Do not breathe dust/fume/gas/mist/vapors/spray

Wash face, hands and any exposed skin thoroughly after handling

**Response**

Immediately call a POISON CENTER or doctor/physician

**Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

**Skin**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

Wash contaminated clothing before reuse

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

**Ingestion**

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

**Storage**

Store locked up

Store in a well-ventilated place. Keep container tightly closed

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Harmful to aquatic life with long lasting effects

Reacts violently with water

### 3. Composition/Information on Ingredients

Component	CAS No	Weight %
Trifluoroacetic acid anhydride	407-25-0	>95

### 4. First-aid measures

**General Advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Remove and wash

	contaminated clothing and gloves, including the inside, before re-use. Call a physician immediately.
<b>Inhalation</b>	If not breathing, give artificial respiration. Remove from exposure, lie down. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately.
<b>Ingestion</b>	Do NOT induce vomiting. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately.
<b>Most important symptoms and effects</b>	Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation
<b>Notes to Physician</b>	Treat symptomatically

## 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	CO <sub>2</sub> , dry chemical, dry sand, alcohol-resistant foam.
<b>Unsuitable Extinguishing Media</b>	DO NOT USE WATER
<b>Flash Point</b>	No information available
<b>Method -</b>	No information available
<b>Autoignition Temperature</b>	No information available
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

### Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Reacts violently with water.

### Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Gaseous hydrogen fluoride (HF). Fluorine. Thermal decomposition can lead to release of irritating gases and vapors.

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

### NFPA

<b>Health</b>	<b>Flammability</b>	<b>Instability</b>	<b>Physical hazards</b>
3	0	2	W

## 6. Accidental release measures

<b>Personal Precautions</b>	Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
<b>Environmental Precautions</b>	Should not be released into the environment. Do not flush into surface water or sanitary sewer system.
<b>Methods for Containment and Clean Up</b>	Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Do not expose spill to water.

## 7. Handling and storage

<b>Handling</b>	Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Do not allow contact with water.
<b>Storage.</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Keep away from water or moist air. Store under an inert atmosphere. Protect from moisture. Incompatible Materials. Water. Strong oxidizing agents. Strong acids. Strong bases. Alcohols. Metals.

## 8. Exposure controls / personal protection

<b>Exposure Guidelines</b>	This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
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<b>Engineering Measures</b>	Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.
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### Personal Protective Equipment

<b>Eye/face Protection</b>	Tight sealing safety goggles. Face protection shield.
<b>Skin and body protection</b>	Wear appropriate protective gloves and clothing to prevent skin exposure.
<b>Respiratory Protection</b>	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
<b>Recommended Filter type:</b>	Organic gases and vapours filter. Type A. Brown. conforming to EN14387.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

<b>Physical State</b>	Liquid
<b>Appearance</b>	Colorless
<b>Odor</b>	pungent
<b>Odor Threshold</b>	No information available
<b>pH</b>	1 @ 20°C 1% aq.sol
<b>Melting Point/Range</b>	-63.5 °C / -82.3 °F
<b>Boiling Point/Range</b>	39.1 °C / 102.4 °F @ 760 mmHg
<b>Flash Point</b>	No information available
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid,gas)</b>	Not applicable
<b>Flammability or explosive limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Vapor Pressure</b>	43.3 kPa @ 20 °C
<b>Vapor Density</b>	No information available
<b>Specific Gravity</b>	1.510
<b>Solubility</b>	Hydrolyses
<b>Partition coefficient; n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	No information available
<b>Decomposition Temperature</b>	No information available
<b>Viscosity</b>	No information available
<b>Molecular Formula</b>	C4 F6 O3
<b>Molecular Weight</b>	210.03

## 10. Stability and reactivity

<b>Reactive Hazard</b>	Yes
<b>Stability</b>	Hygroscopic.
<b>Conditions to Avoid</b>	Incompatible products. Excess heat. Exposure to moist air or water. Exposure to moisture.
<b>Incompatible Materials</b>	Water, Strong oxidizing agents, Strong acids, Strong bases, Alcohols, Metals
<b>Hazardous Decomposition Products</b>	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Gaseous hydrogen fluoride (HF), Fluorine, Thermal decomposition can lead to release of irritating gases and vapors
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	None under normal processing. Reacts violently with water.

## 11. Toxicological information

### Acute Toxicity

#### Product Information

#### Component Information

**Toxicologically Synergistic Products** No information available

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Irritation</b>	Causes severe burns by all exposure routes
<b>Sensitization</b>	No information available
<b>Carcinogenicity</b>	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Trifluoroacetic acid anhydride	407-25-0	Not listed	Not listed	Not listed	Not listed	Not listed

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** Respiratory system

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following

substances which are hazardous for the environment.

<b>Persistence and Degradability</b>	Persistence is unlikely based on information available.
<b>Bioaccumulation/ Accumulation</b>	No information available.
<b>Mobility</b>	Will likely be mobile in the environment due to its volatility.

### 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

#### DOT

<b>UN-No</b>	UN3265
<b>Proper Shipping Name</b>	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
<b>Technical Name</b>	Trifluoroacetic acid anhydride
<b>Hazard Class</b>	8
<b>Packing Group</b>	I

#### TDG

<b>UN-No</b>	UN3265
<b>Proper Shipping Name</b>	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
<b>Hazard Class</b>	8
<b>Packing Group</b>	I

#### IATA

<b>UN-No</b>	UN3265
<b>Proper Shipping Name</b>	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
<b>Hazard Class</b>	8
<b>Packing Group</b>	I

#### IMDG/IMO

<b>UN-No</b>	UN3265
<b>Proper Shipping Name</b>	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
<b>Hazard Class</b>	8
<b>Packing Group</b>	I

### 15. Regulatory information

#### United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Trifluoroacetic acid anhydride	407-25-0	X	ACTIVE	-

#### **Legend:**

**TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)**

Not applicable

**TSCA 12(b)** - Notices of Export

Not applicable

#### International Inventories

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
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Trifluoroacetic acid anhydride	407-25-0	X	-	206-982-9	X	X	X	X	X	KE-34234
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KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

### U.S. Federal Regulations

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

#### **SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)** Not applicable

**Clean Air Act** Not applicable

**OSHA - Occupational Safety and Health Administration** Not applicable

#### **CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**California Proposition 65** This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations** Not applicable

#### **U.S. Department of Transportation**

Reportable Quantity (RQ): N

DOT Marine Pollutant N

DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** This product does not contain any DHS chemicals.

### Other International Regulations

**Mexico - Grade** No information available

**Authorisation/Restrictions according to EU REACH** Not applicable

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Trifluoroacetic acid anhydride	407-25-0	-	-	-

### **Safety, health and environmental regulations/legislation specific for the substance or mixture**

Component	CAS No	OECD HPV	Persistent Organic	Ozone Depletion	Restriction of
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			Pollutant	Potential	Hazardous Substances (RoHS)
Trifluoroacetic acid anhydride	407-25-0	Not applicable	Not applicable	Not applicable	Not applicable

**Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?**

See table for values

Component	OECD PFAS	US (EPA) PFAS	EU (ECHA) PFAS	UK (HSE) PFAS	Chemsec PFAS (Sin List)
Trifluoroacetic acid anhydride (CAS #: 407-25-0)	-	Listed	Listed	Listed	Listed

**PFAS Legend**

Listed = Meets the PFAS definition of the named authority

**Other International Regulations**

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Trifluoroacetic acid anhydride	407-25-0	Not applicable	Not applicable	Not applicable	Not applicable

**16. Other information****Prepared By**

Regulatory Affairs  
Thermo Fisher Scientific  
Email: EMSDS.RA@thermofisher.com

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**Print Date**

15-Jul-2024

**Revision Summary**

This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**