

SAFETY DATA SHEET

Creation Date 23-Jun-2008

Revision Date 24-Dec-2021

Revision Number 5

1. Identification

Product Name 0.01%-0.05%Trifluoroacetic acid blended into acetonitrile

Cat No. : HB9812-4; HB9812-RS19; HB9812-RS200

Synonyms No information available

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

Emergency Telephone Number CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 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)

| | |
|------------------------------------|------------|
| Flammable liquids | Category 2 |
| Acute oral toxicity | Category 4 |
| Acute dermal toxicity | Category 4 |
| Acute Inhalation Toxicity - Vapors | Category 4 |
| Serious Eye Damage/Eye Irritation | Category 2 |

Label Elements

Signal Word
Danger

Hazard Statements
Highly flammable liquid and vapor
Causes serious eye irritation
Harmful if swallowed, in contact with skin or if inhaled



Precautionary Statements

Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting equipment
Use only non-sparking tools
Take precautionary measures against static discharge

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell

Skin

Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Fire

In case of fire: Use CO₂, dry chemical, or foam for extinction

Storage

Store in a well-ventilated place. Keep cool

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

None identified

3. Composition/Information on Ingredients

| Component | CAS No | Weight % |
|----------------------|---------|-----------|
| Acetonitrile | 75-05-8 | > 99.95 |
| Trifluoroacetic acid | 76-05-1 | .01 - .05 |

4. First-aid measures

General Advice

If symptoms persist, call a physician.

Eye Contact

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

| | |
|--|--|
| Skin Contact | Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician. |
| Inhalation | Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur. |
| Ingestion | Clean mouth with water and drink afterwards plenty of water. |
| Most important symptoms and effects | Difficulty in breathing. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting |
| Notes to Physician | Treat symptomatically |

5. Fire-fighting measures

| | |
|---|---|
| Suitable Extinguishing Media | Water spray, carbon dioxide (CO ₂), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers. |
| Unsuitable Extinguishing Media | Do not use a solid water stream as it may scatter and spread fire |
| Flash Point | 6 °C / 42.8 °F |
| Method - | No information available |
| Autoignition Temperature | 524 °C / 975.2 °F |
| Explosion Limits | |
| Upper | 16.00% |
| Lower | 4.4% |
| Sensitivity to Mechanical Impact | No information available |
| Sensitivity to Static Discharge | No information available |

Specific Hazards Arising from the Chemical

Flammable. Thermal decomposition can lead to release of irritating gases and vapors. Containers may explode when heated. Vapors may travel to source of ignition and flash back. Vapors may form explosive mixtures with air.

Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO₂). Nitrogen oxides (NO_x). Hydrogen cyanide (hydrocyanic acid).

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.

NFPA

| | | | |
|---------------|---------------------|--------------------|-------------------------|
| Health | Flammability | Instability | Physical hazards |
| 2 | 4 | 0 | N/A |

6. Accidental release measures

| | |
|---|---|
| Personal Precautions | Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges. |
| Environmental Precautions | Should not be released into the environment. See Section 12 for additional Ecological Information. |
| Methods for Containment and Clean Up | Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. |

7. Handling and storage

| | |
|-----------------|--|
| Handling | Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Ensure adequate ventilation. Use only |
|-----------------|--|

non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges. Keep away from open flames, hot surfaces and sources of ignition.

Storage.

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Incompatible Materials. Strong oxidizing agents. Strong acids. Reducing Agent.

8. Exposure controls / personal protection

Exposure Guidelines

| Component | ACGIH TLV | OSHA PEL | NIOSH IDLH | Mexico OEL (TWA) |
|--------------|---------------------|---|--|------------------|
| Acetonitrile | TWA: 20 ppm Skin | (Vacated) TWA: 40 ppm (Vacated) TWA: 70 mg/m ³ (Vacated) TWA: 5 mg/m ³ (Vacated) STEL: 60 ppm (Vacated) STEL: 105 mg/m ³ TWA: 40 ppm TWA: 70 mg/m ³ | IDLH: 137 ppm IDLH: 25 mg/m ³ TWA: 20 ppm TWA: 34 mg/m ³ | TWA: 20 ppm |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting equipment. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment**Eye/face Protection**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Tight sealing safety goggles. Face protection shield.

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

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.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

| | |
|----------------------------------|--------------------------|
| Physical State | Liquid |
| Appearance | Clear |
| Odor | aromatic |
| Odor Threshold | No information available |
| pH | No information available |
| Melting Point/Range | ~ -45 °C / -49 °F |
| Boiling Point/Range | No information available |
| Flash Point | 6 °C / 42.8 °F |
| Evaporation Rate | No information available |
| Flammability (solid,gas) | Not applicable |
| Flammability or explosive limits | |
| Upper | 16.00% |
| Lower | 4.4% |

| | |
|--|--------------------------|
| Vapor Pressure | No information available |
| Vapor Density | No information available |
| Specific Gravity | No information available |
| Solubility | Miscible with water |
| Partition coefficient; n-octanol/water | No data available |
| Autoignition Temperature | 524 °C / 975.2 °F |
| Decomposition Temperature | No information available |
| Viscosity | No information available |

10. Stability and reactivity

| | |
|----------------------------------|--|
| Reactive Hazard | None known, based on information available |
| Stability | Stable under normal conditions. |
| Conditions to Avoid | Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition. |
| Incompatible Materials | Strong oxidizing agents, Strong acids, Reducing Agent |
| Hazardous Decomposition Products | Carbon monoxide (CO), Carbon dioxide (CO ₂), Nitrogen oxides (NO _x), Hydrogen cyanide (hydrocyanic acid) |
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions | None under normal processing. |

11. Toxicological information

Acute Toxicity

Product Information

| | |
|-------------|--------------------------------------|
| Oral LD50 | Category 4. ATE = 300 - 2000 mg/kg. |
| Dermal LD50 | Category 4. ATE = 1000 - 2000 mg/kg. |
| Vapor LC50 | Category 4. ATE = 10 - 20 mg/l. |

Component Information

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|----------------------|---|-------------------------|---|
| Acetonitrile | 450-787 mg/kg (Rat) 2460 mg/kg (Rat) | > 2000 mg/kg (Rabbit) | LC50 = 3587 ppm (6.022 mg/l) (Mouse) 4h LC50 = 16,000 ppm (26.8 mg/l) (Rat) 4h |
| Trifluoroacetic acid | 200-400 mg/kg (rat) | Not listed | 10 mg/L/2h (rat) |

Toxicologically Synergistic No information available

Products

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

| | |
|-----------------|--|
| Irritation | Irritating to eyes |
| Sensitization | No information available |
| Carcinogenicity | The table below indicates whether each agency has listed any ingredient as a carcinogen. |

| Component | CAS No | IARC | NTP | ACGIH | OSHA | Mexico |
|----------------------|---------|------------|------------|------------|------------|------------|
| Acetonitrile | 75-05-8 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Trifluoroacetic acid | 76-05-1 | 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 | None known |
| STOT - repeated exposure | None known |
| Aspiration hazard | No information available |
| Symptoms / effects, both acute and delayed | Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting |
| Endocrine Disruptor Information | No information available |
| Other Adverse Effects | The toxicological properties have not been fully investigated. |

12. Ecological information

Ecotoxicity

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|----------------------|------------------|---|--|----------------------------|
| Acetonitrile | Not listed | LC50: = 1850 mg/L, 96h static (Lepomis macrochirus) LC50: = 1000 mg/L, 96h static (Pimephales promelas) LC50: 1600 - 1690 mg/L, 96h flow-through (Pimephales promelas) LC50: = 1650 mg/L, 96h static (Poecilia reticulata) | EC50 = 28000 mg/L 48 h EC50 = 73 mg/L 24 h EC50 = 7500 mg/L 15 h | Not listed |
| Trifluoroacetic acid | Not listed | Zebrafish: LC50: >1000 mg/L/96h | Not listed | daphnia: EC50: 55 mg/L/24h |

Persistence and Degradability Persistence is unlikely

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its water solubility.

| Component | log Pow |
|----------------------|---------|
| Acetonitrile | -0.34 |
| Trifluoroacetic acid | -2.1 |

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.

| Component | RCRA - U Series Wastes | RCRA - P Series Wastes |
|------------------------|------------------------|------------------------|
| Acetonitrile - 75-05-8 | U003 | - |

14. Transport information

DOT

UN-No UN1648
 Proper Shipping Name ACETONITRILE SOLUTION
 Hazard Class 3
 Packing Group II

TDG

UN-No UN1648

| | |
|-----------------------------|-----------------------|
| Proper Shipping Name | ACETONITRILE SOLUTION |
| Hazard Class | 3 |
| Packing Group | II |
| IATA | |
| UN-No | UN1648 |
| Proper Shipping Name | ACETONITRILE SOLUTION |
| Hazard Class | 3 |
| Packing Group | II |
| IMDG/IMO | |
| UN-No | UN1648 |
| Proper Shipping Name | ACETONITRILE SOLUTION |
| Hazard Class | 3 |
| Packing Group | II |

15. Regulatory information

United States of America Inventory

| Component | CAS No | TSCA | TSCA Inventory notification - Active-Inactive | TSCA - EPA Regulatory Flags |
|----------------------|---------|------|---|-----------------------------|
| Acetonitrile | 75-05-8 | X | ACTIVE | - |
| Trifluoroacetic acid | 76-05-1 | X | ACTIVE | - |

Legend:

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

X - Listed

'-' - Not Listed

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 |
|----------------------|---------|-----|-----|-----------|-------|------|------|------|-------|---------------|
| Acetonitrile | 75-05-8 | X | - | 200-835-2 | X | X | X | X | X | KE-00067 |
| Trifluoroacetic acid | 76-05-1 | X | - | 200-929-3 | X | X | X | X | X | KE-34233 X |

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

U.S. Federal Regulations

SARA 313

| Component | CAS No | Weight % | SARA 313 - Threshold Values % |
|--------------|---------|----------|-------------------------------|
| Acetonitrile | 75-05-8 | > 99.95 | 1.0 |

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act)

| Component | CWA - Hazardous Substances | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|--------------|----------------------------|-----------------------------|------------------------|---------------------------|
| Acetonitrile | - | - | X | X |

Clean Air Act

| Component | HAPS Data | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|--------------|-----------|-------------------------|-------------------------|
| Acetonitrile | X | | - |

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA Not applicable

| Component | Hazardous Substances RQs | CERCLA EHS RQs |
|--------------|--------------------------|----------------|
| Acetonitrile | 5000 lb | - |

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

U.S. State Right-to-Know Regulations

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|----------------------|---------------|------------|--------------|----------|--------------|
| Acetonitrile | X | X | X | X | X |
| Trifluoroacetic acid | - | X | - | - | - |

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant Y
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

| Component | 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) |
|----------------------|---|---|---|
| Acetonitrile | - | Use restricted. See item 75. (see link for restriction details) | - |
| Trifluoroacetic acid | - | Use restricted. See item 75. (see link for restriction details) | - |

<https://echa.europa.eu/substances-restricted-under-reach>

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

| Component | CAS No | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|----------------------|---------|----------|------------------------------|---------------------------|--|
| Acetonitrile | 75-05-8 | Listed | Not applicable | Not applicable | Not applicable |
| Trifluoroacetic acid | 76-05-1 | Listed | Not applicable | Not applicable | Not applicable |

| 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) |
|----------------------|---------|---|--|----------------------------|------------------------------------|
| Acetonitrile | 75-05-8 | Not applicable | Not applicable | Not applicable | Not applicable |
| Trifluoroacetic acid | 76-05-1 | Not applicable | Not applicable | Not applicable | Not applicable |

16. Other information

| | |
|-------------------------|---|
| Prepared By | Regulatory Affairs Thermo Fisher Scientific Email: EMSDS.RA@thermofisher.com |
| Creation Date | 23-Jun-2008 |
| Revision Date | 24-Dec-2021 |
| Print Date | 24-Dec-2021 |
| 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