ADVANCED CHEMTECH

SAFETY DATA SHEET

Revision Date 08/04/2023

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name	: TFA
Product Number	: RA8402
Brand	: Advanced ChemTech
CAS-No.	: 76-05-1

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company	: Advanced ChemTech 5609 Fern Valley Rd, Louisville, KY 40228 USA
Telephone	: +1 833-317-5620
Fax	: +1 502-968-1000

1.4 Emergency telephone number : +1 800-424-9300 Chemtrec

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Inhalation (Category 4), H332
Skin corrosion (Category 1A), H314
Serious eye damage (Category 1), H318
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412
For the full text of the H-Statements mentioned in this Section, see Section 16

2.2 GHS Label elements, including precautionary statements:

Pictogram

Signal word	Danger
Hazard statement(s)	
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H412	Harmful to aquatic life with long lasting effects.
Precautionary statement(s)	
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P363	Wash contaminated clothing before reuse.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS – none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	: Trifluoroacetic Acid
Formula	: $C_2HF_3O_2$
Molecular Weight	: 114.02g/mole
CAS-No.	: 76-05-1

Component	Classification	Concentration
Trifluoroacetic acid		
	Acute Tox. 4; Skin Corr. 1A; Eye Dam. 1; Aquatic Acute 3; Aquatic Chronic 3; H314, H318, H332, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician
In case of skin contact: Wash off with soap and plenty of water. Consult a physician.
In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.Continue rinsing eyes during transport to hospital.
If swallowed: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician

4.2 **Most important symptoms and effects, both acute and delayed:** The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11

4.3 **Indication of any immediate medical attention and special treatment needed:** No data available

5. FIREFIGHTING MEASURES

5.1 **Extinguishing media**

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 **Special hazards arising from the substance or mixture:** Carbon oxides, Hydrogen fluoride

5.3 **Advice for firefighters:** Wear self contained breathing apparatus for fire fighting if necessary.

5.4 **Further information:** No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 **Personal Precautions, protective equipment, and emergency procedure:** Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.

6.2 **Environmental precautions:** Do not let product enter drains.

6.3 **Methods and materials for containment and cleaning up:** Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 **Reference to other sections:** For disposal see section 13.

7. HANDLING AND STORAGE

7.1 **Precautions for safe handling:** Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. For precautions see section 2.2.

7.2 **Conditions for safe storage, including any incompatibilities:** Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Hygroscopic Store under inert gas. Storage class (TRGS 510): Non-combustible, corrosive hazardous materials

7.3 **Specific end use(s):** Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 **Control parameters**

Components with workplace control parameters: Contains no substances with occupational exposure limit values.

8.2 **Exposure controls**

Appropriate engineering controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection: Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection: Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)

Control of environmental exposure: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 **Information on basic physical and chemical properties**

a) Appearance	Form: Clear, colorless liquid
b) Odor	pungent
c) Odor Threshold	no data available
d) pH	1.0 at 1 g/l at 20 °C (68 °F)
e) Melting point/freezing point	Melting point/range: -15.4 °C (4.3 °F) - lit.
f) Initial boiling point and boiling range	72.4 °C (162.3 °F) - lit.
g) Flash point	> 100 °C (> 212 °F) - closed cup - Tested according to Annex V of Directive 67/548/EEC.
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/lower flammability or explosive limits	no data available
k) Vapor pressure	130.0 hPa (97.5 mmHg) at 20.0 °C (68.0 °F) 142.7 hPa (107.0 mmHg) at 25.0 °C (77.0 °F)
l) Vapor density	no data available
m) Relative density	1.489 g/cm3 at 20 °C (68 °F)
n) Water solubility	soluble
o) Partition coefficient: n- octanol/water	log Pow: -2.10
p) Auto-ignition temperature	no data available
q) Decomposition temperature	no data available
r) Viscosity	no data available
s) Explosive properties	no data available
t) Oxidizing properties	no data available

9.2 **Other safety information:** no data available

10. STABILITY AND REACTIVITY

10.1 **Reactivity:** No data available

10.2 **Chemical stability:** Stable under recommended storage conditions.

10.3 **Possibility of hazardous reactions:** No data available

10.4 **Conditions to avoid:** No data available

10.5 **Incompatible materials:** Strong bases, Metals, Oxidizing agents, Alcohols, Epoxides, Steel (all types and surface treatments), Aluminum, Exothermic in contact with water, Reacts violently with:, Alkali metals

10.6 **Hazardous decomposition products:** Other decomposition products - no data available**.** In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 **Information on toxicological effects**

Acute toxicity: No data available

Inhalation: LC50 Inhalation - Rat - 10,000 mg/m3 Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Conjunctive irritation. Behavioral:Somnolence (general depressed activity). Lungs, Thorax, or Respiration:Dyspnea

Dermal: No data available

Skin corrosion/irritation: No data available

Serious eye damage/eye irritation: No data available

Respiratory or skin sensitization: No data available

Germ cell mutagenicity: No data available

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: No data available

Specific target organ toxicity - single exposure: No data available

Specific target organ toxicity - repeated exposure: No data available

Aspiration hazard: No data available

Additional Information: RTECS: AJ9625000 Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting Liver - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 **Toxicity:** Toxicity to fish LC50 - Danio rerio (zebra fish) - > 1,000 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 55.00 mg/l - 24 h
Toxicity to algae - Desmodesmus subspicatus (Scenedesmus subspicatus) - > 100 mg/l - 72 h (OECD Test Guideline 201)

12.2 **Persistence and degradability:** Biodegradability Result: Not readily biodegradable. OECD Test Guideline 301D) Remarks: No data available

12.3 **Bioaccumulative potential:** No bioaccumulation is to be expected (log Pow <= 4).

12.4 **Mobility in soil:** No data available

12.5 **Results of PBT and vPvB assessment:** PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 **Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 **Waste treatment methods**

Product: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging: Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 2699 Class: 8 Packing group: I
Proper shipping name: Trifluoroacetic acid
Reportable Quantity (RQ):
Poison Inhalation Hazard: No

IMDG

UN number: 2699 Class: 8 Packing group: I EMS-No: F-A, S-B
Proper shipping name: TRIFLUOROACETIC ACID

IATA

UN number: 2699 Class: 8 Packing group: I
Proper shipping name: Trifluoroacetic acid

15. REGULATORY INFORMATION

SARA 302 Components: SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards: Acute Health Hazard, Chronic Health Hazard

Massachusetts Right to Know Components: No components are subject to the Massachusetts Right toKnow Act.

Pennsylvania Right to Know Components

TFA	CAS-No.	Revision Date
	76-05-1	

New Jersey Right to Know Components

TFA	CAS-No.	Revision Date
	76-05-1	

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Eye Dam.	Serious eye damage
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H402	Harmful to aquatic life

HMIS Rating

Health hazard:	3
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	3
Fire Hazard:	0
Reactivity Hazard:	0

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Advanced ChemTech shall not be liable for any damage resulting in the handling or from contact with the above product.