Issue date: 12/2/2003
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Safety Data Sheet

1. Chemical product and company identification

Product name	:	Trifluoroacetic acid

Company information

Name of manufacturer	:	KANTO CHEMICAL CO., INC.
Address	:	2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP
Name of section	:	Business Administration Department, Reagent Division
Telephone number	:	+81-3-6214-1090
Facsimile number	:	+81-3-3241-1047
Mail address	:	BC32@kanto.co.jp
Reference No	:	40578
Recommended use	:	For research use only
Restrictions on use	:	Seek expert judgment when using the product for applications other than those recommended.

2. Hazards identification

GHS classification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Acute toxicity (oral)	Category 3
	Acute toxicity (inhalation:vapors)	Category 3
	Skin corrosion/irritation	Category 1A
	Serious eye damage/eye irritation	Category 1

Hazard pictograms





Signal word	:	Danger
Hazard statements	:	May be corrosive to metals Toxic if swallowed or if inhaled Causes severe skin burns and eye damage

Precautionary statements

Prevention	:	Keep only in original container. Do not breathe mist/vapors. Wash hands, forearms and face thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	:	IF SWALLOWED: Immediately call a POISON CENTER or doctor. IF SWALLOWED: Rinse mouth. Do not induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water . IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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.
Call a POISON CENTER or doctor.
Absorb spillage to prevent material-damage.

Storage : Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or mixture : Substance

Synonyms : TFA

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Trifluoroacetic acid	≥ 99	C2HF3O2	Listed	200-929-3	76-05-1

4. First aid measures

First aid measures

First-aid measures after inhalation : Remove the victim to fresh air, and make him blow his nose and gargle. If necessary, get medical treatment.

First-aid measures after skin contact : Wash the affected areas under running water, get medical treatment as soon as possible.

First-aid measures after eye contact : Wash the affected areas under running water for at least 15 minutes. Get medical treatment.

First-aid measures after ingestion : Rinse mouth with water. Give the victim one or two glasses of water or milk. Do not induce vomiting. Get medical treatment as soon as possible.

Personal Protection in First Aid and Measures : Rescuers should wear proper protective equipment like rubber gloves, goggles.

5. Fire fighting measures

Suitable extinguishing media : This product is noncombustible.

Unsuitable extinguishing media : None

Fire hazard : Thermal decomposition emits harmful, irritant gas or fume.

Firefighting instructions : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.

Personal protection (Emergency response) : Firefighters should wear protective equipment.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

General measures : Wear proper protective equipment and avoid contact with skin and inhalation of vapor. Conduct operations from upwind and evacuate

people downwind. Keep away personnel except for authorized ones from spillage area by stretching ropes.

Environmental precautions

Environmental precautions	:	Attention should be given to avoid discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.

Methods and Equipment for Containment and Cleaning up

For containment	:	Absorb spill with diatomaceous earth or dry sand and place in container. Neutralize residue with calcium hydroxide solution or sodium carbonate solution and then flush with copious amounts of water.

7. Handling and storage

Handling

Technical measures	:	Wear proper protective equipment to avoid contact with skin or inhalation of vapor.
Precautions for safe handling	:	Avoid formation of vapor and aerosols. Do not allow contact with oxidizing substances. The substance is acidic. Avoid contact with alkaline substances.

Storage

Storage conditions	:	As the chemical is hygroscopic, keep the bottle tightly closed and store in a refrigerator (0-6℃).
Material used in packaging/containers	:	Glass, fluorine resin. Because of its corrosive nature, cast iron containers cannot be used.

8. Exposure controls / Personal protection equipment

ACGIH TWA	Not established

Appropriate engineering controls	:	Use with an enclosed system or a local exhaust ventilation.

Protective equipment

Respiratory protection	:	Chemical cartridge respirator with acids vapor cartage or airline respirator
Hand protection	:	Impervious protective gloves
Eye protection	:	Safety goggles
Skin and body protection	:	Protective clothing, protective boots

9. Physical and chemical properties

Physical state	:	Liquid
Color	:	Colorless - light red
Odor	:	Pungent.
pH	:	1 (10 g/L)
Melting point	:	-15 ° C
Freezing point	:	No data available

Boiling point	:	72 ° C
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability	:	Non flammable.
Vapor pressure	:	11 kPa (20℃)
Relative density	:	No data available
Density	:	1.5 g/cm³ (20℃)
Relative gas density	:	3.9
Solubility	:	Water: Miscible. Organic solvents: Miscible with ether, acetone, ethanol, benzene, carbon tetrachloride, hexane.
Partition coefficient n-octanol/water (log Pow)	:	-2.1
Explosive limits (vol %)	:	No data available
Viscosity, kinematic	:	No data available
Particle characteristics	:	No data available

10. Stability and reactivity

Reactivity	:	It is a non-oxidizing strong acid. Metal corrosive.
Chemical stability	:	It emits smoke. Hygroscopic.
Possibility of hazardous reactions	:	When in contact with acids, alkaline substances, oxidizers, and reducing agents, it reacts violently, producing toxic and corrosive fumes or gases such as hydrogen fluoride.
Conditions to avoid	:	Light, heat. moisture.
Incompatible materials	:	Alkaline substances, acids, oxidizing substances, reducing agent, metals.
Hazardous decomposition products	:	Carbon monoxide, fluorine, hydrogen fluoride.

11. Toxicological information

Acute toxicity (oral)	:	Toxic if swallowed rat LD50=200 mg/kg
Acute toxicity (dermal)	:	Classification not possible
Acute toxicity (inhalation)	:	No classification (gas) Toxic if inhaled (vapor) rat LC50=1516 ppm/4h Classification not possible (dust, mist)
Skin corrosion/irritation	:	Causes severe skin burns From the information that this substance has a pH of 1 (10 g/L), it was classified in category 1A.
Serious eye damage/irritation	:	Causes serious eye damage This substance is classification as category 1A for skin corrosion/irritation. Therefore, it was classified as category 1.
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	Classification not possible
Germ cell mutagenicity	:	Classification not possible
Carcinogenicity	:	Classification not possible

Reproductive toxicity	:	Classification not possible An oral administration test in rats given 75 or 150 mg/kg on day 10 to 20 of gestation reported that changes in biochemical parameters indicating hepatic and renal functions in serum and urine examinations of newborns were observed but no statistically significant effects on litter size, neonatal survival or postnatal growth were not observed. But it was classified as "Classification not possible" due to lack of data because effects on sexual function and fertility are unknown only by this data.
STOT-single exposure	:	Classification not possible
STOT-repeated exposure	:	Classification not possible
Aspiration hazard	:	Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	:	No classification Pseudokirchneriella subcapitata ErC50=237.07 mg/L/72h
Aquatic chronic	:	Classification not possible

Persistence and degradability

No additional information available

Bioaccumulative potential

No additional information available

Mobility in soil

No additional information available

Hazardous to the ozone layer

Ozone	:	Classification not possible

13. Disposal considerations

Ecology - waste materials	:	It is mixed with combustible solvents and incinerated in small quantities in an incinerator equipped with a scrubber. Or entrust approved waste disposal companies with the disposal. The incinerator should be suitable for burning organic halogen compounds. Alkaline solution should be used for cleaning liquid of the scrubber.
Contaminated container and packaging	:	In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

International Regulations

Transport by sea(IMDG)

UN-No. (IMDG)	:	2699
Proper Shipping Name (IMDG)	:	TRIFLUOROACETIC ACID
Packing group (IMDG)	:	I
Transport hazard class(es) (IMDG)	:	8

Air transport(IATA)

UN-No. (IATA)	:	2699

Proper Shipping Name (IATA)	:	Trifluoroacetic acid
Packing group (IATA)	:	I
Transport hazard class(es) (IATA)	:	8
Marine pollutant	:	Not applicable
MFAG-No	:	154

15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

16. Other information

Data sources : Dictionary of Organic Compounds, The society of Synthetic Organic Chemistry, Kodansha Ltd. (1985) .
ICSC Card (2009) .
Encyclopaedia Chimica, Kyoritsu Shuppan Co, Ltd. (1963) .
NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.
Handbook of 17322 Chemical Products, The Chemical Daily Co. (2022) .

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully.The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements.The information herein is only provision of information, and it does not represent a guarantee the properties of the product.The Safety Data Sheet(SDS) is prepared based on JIS Z7253.