

OTTO CHEMIE PVT LTD

An ISO 9001 : 2015 & GMP Certified Company
101, Aarkay Ruby Industrial Estate (1B), Opp Shree Narayan Industrial Estate,
Chinchpada, Vasai East, Waliv, Maharashtra 401208. Tel : + 91 98200 41841
Email : info@ottokemi.com Web : www.ottokemi.com

MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1: Product identifiers

Product Name : Trifluoroacetic anhydride, 99%
Product Code: T 2145
CAS-No: 407-25-0

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use : Industrial. For professional use only.

1.3. Details of the supplier of the safety data sheet

Company identification
OTTO CHEMIE PVT LTD
101, Aarkay Ruby Industrial Estate(1B), Opp Shree Narayan Industrial Estate,
Chinchpada, Vasai East, Waliv, Maharashtra 401208.
Email info@ottokemi.com

1.4. Emergency telephone number

Phone no. : + 91 22 2207 0099 (9:00am - 6:00 pm)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Acute toxicity, (Category 4)

Skin corrosion, (Sub-category

H332: Harmful if inhaled.

H314: Causes severe skin burns and eye damage.

1A)

Serious eye damage, (Category

1)

Long-term (chronic) aquatic

H318: Causes serious eye damage.

H412: Harmful to aquatic life with long lasting effects.

hazard, (Category 3)

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal Word

Hazard Statements

H314

H332

H412

Precautionary Statements

P261

P273

P280

P303 + P361 + P353

P304 + P340 + P310

P305 + P351 + P338

Danger

Causes severe skin burns and eye damage.

Harmful if inhaled.

Harmful to aquatic life with long lasting effects.

Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

Avoid release to the environment.

Wear protective gloves/ protective clothing/ eye protection/ face protection.

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. Immediately call a POISON CENTER/ doctor.

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

Reacts violently with water.

Supplemental Hazard information (EU)

EUH014

Reduced Labeling (<= 125 ml)

Pictogram

Signal Word

Hazard Statements

H314

H412

Precautionary Statements

Danger

Causes severe skin burns and eye damage.

Harmful to aquatic life with long lasting effects.

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P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard information (EU)

EUH014

Reacts violently with water.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances

Formula : C4F6O3
Molecular weight : 210,03 g/mol
CAS-No. : 407-25-0
EC-No. : 206-982-9

| Component | Classification | Concentration |
|--------------------------------------|--|---------------|
| trifluoroacetic anhydride | | |
| CAS-No. 407-25-0 EC-No. 206-982-9 | Acute Tox. 4; Skin Corr. 1A; Eye Dam. 1; Aquatic Chronic 3; H332, H314, H318, H412 | <= 100 % |

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

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

Water Foam

5.2 Special hazards arising from the substance or mixture

Carbon oxides

Hydrogen fluoride

Not combustible.

Fire may cause evolution of:

Hydrogen fluoride

Caution! in contact with water product releases:

Organic acids

May not get in touch with: Water

Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

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

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®).

Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Keep workplace dry. Do not allow product to come into contact with water. Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols. Keep workplace dry. Do not allow product to come into contact with water.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed.

Never allow product to get in contact with water during storage.

Recommended storage temperature see product label.

Storage class

Storage class (TRGS 510): 8B: 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

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

8.2 Exposure controls

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact

Material: butyl-rubber

Minimum layer thickness: 0,7 mm

Break through time: 480 min

Material tested: Butoject® (KCL 898)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact

Material: Latex gloves

Minimum layer thickness: 0,6 mm

Break through time: 30 min

Body Protection

protective clothing

Respiratory protection

Recommended Filter type: Filter B-(P3)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Physical state

liquid

b) Color

colorless

c) Odor

pungent

d) Melting

Melting point: -63,5 °C - Regulation (EC) No. 440/2008, Annex, A.1

point/freezing point

e) Initial boiling point

39,15 °C at 1.013 hPa - Regulation (EC) No. 440/2008, Annex, A.2

and boiling range

f) Flammability (solid, gas)

No data available

g) Upper/lower flammability or explosive limits

No data available

h) Flash point

No data available

i) Autoignition temperature

No data available

j) Decomposition temperature

No data available

k) pH

No data available

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| | |
|---|---|
| l) Viscosity | Viscosity, kinematic: No data available Viscosity, dynamic: 1,8 mPa.s at 20 °C - OECD Test Guideline 114 |
| m) Water solubility | 10.000 g/l - US-EPA- completely soluble |
| n) Partition coefficient: n-octanol/water | No data available |
| o) Vapor pressure | 433 hPa at 20 °C - Regulation (EC) No. 440/2008, Annex, A.4 |
| p) Density | 49 g/cm ³ at 25 °C |
| Relative density | No data available |
| q) Relative vapor density | No data available |
| r) Particle characteristics | No data available |
| s) Explosive properties | No data available |
| t) Oxidizing properties | none |
| 9.2 Other safety information | |
| Surface tension 72,5 mN/m at 1g/l at 20 °C - OECD Test Guideline 115 | |

SECTION 10: Stability and reactivity

10.1 Reactivity

Reacts violently with water.

10.2 Chemical stability

sensitive to moisture

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Do not allow water to enter container.

Moisture.

10.5 Incompatible materials

Strong oxidizing agents, Strong acids, Strong bases, Alcohols

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Toxicity to Animals:

Oral LD50 Rat: 1500 mg/kg; Dermal LD50 Rabbit: 2000mg/kg

Inhalation LC50 Rat: > 50mg/L.

Chronic Effects on Humans: CARCINOGENIC EFFECTS: Classified None. by NTP, None. by OSHA, None. by NIOSH.

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of inhalation (lung irritant).

Special Remarks on Toxicity

to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Not available.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish static test LC50 - Danio rerio (zebra fish) - > 999 mg/l - 96 h

(OECD Test Guideline 203)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Sodium trifluoroacetate

Toxicity to daphnia

and other aquatic

invertebrates

static test EC50 - Daphnia magna (Water flea) - > 999 mg/l - 48 h

(OECD Test Guideline 202)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Sodium trifluoroacetate

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Toxicity to algae static test NOEC - *Phaeodactylum tricornutum* - 97 mg/l - 72 h
(OECD Test Guideline 201)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Sodium trifluoroacetate
The value is given in analogy to the following substances: trifluoroacetic acid

static test EC50 - *Phaeodactylum tricornutum* - > 97 mg/l - 72 h
(OECD Test Guideline 201)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Sodium trifluoroacetate
The value is given in analogy to the following substances: trifluoroacetic acid

Toxicity to bacteria NOEC - activated sludge - > 1.000 mg/l - 3 h
(OECD Test Guideline 209)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Sodium trifluoroacetate

EC50 - activated sludge - > 1.000 mg/l - 3 h

(OECD Test Guideline 209)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Sodium trifluoroacetate

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

semi-static test NOEC - *Daphnia magna* (Water flea) - >= 25 mg/l - 21 d
(OECD Test Guideline 211)

Remarks: (in analogy to similar products)

semi-static test EC50 - *Daphnia magna* (Water flea) - > 25 mg/l - 21 d
(OECD Test Guideline 211)

Remarks: (in analogy to similar products)

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d

Result: 0 % - Not biodegradable

(OECD Test Guideline 301D)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Sodium trifluoroacetate

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment :

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Biological effects:

Harmful effect due to pH shift.

Hazard for drinking water supplies.

Discharge into the environment must be avoided.

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

No data available

SECTION 14: Transport information

14.1 UN number

ADR/RID: 3265 IMDG: 3265 IATA: 3265

14.2 UN proper shipping name

ADR/RID: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (trifluoroacetic anhydride)
IMDG: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (trifluoroacetic anhydride)
IATA: Corrosive liquid, acidic, organic, n.o.s. (trifluoroacetic anhydride)

14.3 Transport hazard class(es)

ADR/RID: 8 IMDG: 8 IATA: 8

14.4 Packaging group

ADR/RID: I IMDG: I IATA: I

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

Tunnel restriction code : (E)

Further information : No data available

SECTION 15: Regulatory information

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

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

National legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council
O1 OTHER HAZARDS

on the control of major-accident hazards involving dangerous substances.

Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

Section 16: Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

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