

Safety Data Sheet
according to 1907/2006/EC, Article 31

Revision: 18.08.2010

Printing date 18.08.2010

1 Identification of substance**Product details**

Trade name

Trimethylsulfonium tetrafluoroborate

Stock number:

L00647

Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG
Benzstrasse 3
D-76185 Karlsruhe / GermanyE-mail: gcat@matthey.com
www.alfa-chemcat.com

Informing department:

Product safety department.

Emergency information:

Giftnotruf Universität Mainz / Poison Information Center Mainz
www.giftinfo.uni-mainz.de Telefon:+49(0)6131/19240**2 Hazards identification**

Hazard designation:



C Corrosive

Information pertaining to particular dangers
for man and environment
GHS label elements

R 34 Causes burns.

**Danger**

Prevention:

Response:

H314 - Causes severe skin burns and eye damage.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/information on ingredients

Chemical characterization:

Designation: (CAS#)

Identification number(s):

EINECS Number:

Trimethylsulfonium tetrafluoroborate (CAS# 676-88-0): 100%

211-632-3

4 First aid measures

General information

After inhalation

Instantly remove any clothing soiled by the product.

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contact

Seek immediate medical advice.

Instantly wash with water and soap and rinse thoroughly.

After eye contact

Seek immediate medical advice.

Rinse opened eye for several minutes under running water. Then consult doctor.

After swallowing

Seek immediate medical advice.

5 Fire fighting measures

Suitable extinguishing agents

Special hazards caused by the material, its
products of combustion or flue gases:CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

Can be released in case of fire:

Carbon monoxide and carbon dioxide

Boron oxide

Hydrogen fluoride (HF)

Sulphur oxides (SO_x)

Protective equipment:

Wear self-contained breathing apparatus.

Wear full protective suit.

6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Use neutralizing agent.

Dispose of contaminated material as waste according to item 13.

Ensure adequate ventilation.

Additional information:

See Section 7 for information on safe handling

See section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

7 Handling and storage

Handling

Information for safe handling:

Keep containers tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation/exhaustion at the workplace.

Information about protection against
explosions and fires:

Keep ignition sources away - Do not smoke.

Storage

Requirements to be met by storerooms and
containers:

No special requirements.

Information about storage in one common
storage facility:

Store away from oxidizing agents.

Further information about storage
conditions:

Keep container tightly sealed.

Refrigerate

Store in a locked cabinet or with access restricted to technical experts or their assistants.

8 Exposure controls and personal protectionAdditional information about design of
technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with critical values that require
monitoring at the workplace:

Fluorides (as F)

ACGIH TLV $\frac{\text{mg}}{\text{m}^3}$ 2.5

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Austria MAK	2,5
Belgium TWA	2,5
Finland TWA	2,5
France TWA	2,5
Germany MAK	2,5
Hungary TWA	1; 2-STEL
Netherlands MAC-K	3,5
Norway TWA	0,6
Poland TWA	1; 3-STEL
Sweden NGV	2
Switzerland MAK-W	1,5; 3-KZG-W
United Kingdom TWA	2,5
Russia TWA	2
Denmark TWA	2,5
USA PEL	2,5
No data	

Additional information:**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures should be adhered to in handling the chemicals.
Keep away from foodstuffs, beverages and food.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Avoid contact with the eyes and skin.

Breathing equipment:**Protection of hands:****Material of gloves**

Use breathing protection with high concentrations.
Check protective gloves prior to each use for their proper condition.
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration time of glove material**Eye protection:**

Impervious gloves
Not determined
Safety glasses
Tightly sealed safety glasses.

Body protection:

Face protection
Full face protection
Protective work clothing.

9 Physical and chemical properties:**General Information**

Form:	Crystalline powder
Colour:	White
Smell:	Not determined

Change in condition

Melting point/Melting range:	214-218°C
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

Flash point:

Not applicable

Ignition temperature:

Not determined

Decomposition temperature:

Not determined

Danger of explosion:

Product is not explosive.

Critical values for explosion:

Lower:	Not determined
Upper:	Not determined

Steam pressure:

Not determined

Density

Not determined

Solubility in / Miscibility with

Water:	Soluble
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10 Stability and reactivity**Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

Materials to be avoided:

Oxidizing agents

Dangerous reactions:

No dangerous reactions known

Dangerous products of decomposition:

Carbon monoxide and carbon dioxide
Boron oxide
Hydrogen fluoride
Sulphur oxides (SO_x)

11 Toxicological information**Acute toxicity:****Primary irritant effect:**

Corrosive effect on skin and mucous membranes.

on the skin:

Strong corrosive effect.

on the eye:

No sensitizing effect known.

Sensitization:**Additional toxicological information:**

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
EPA-I: Data are inadequate for an assessment of human carcinogenic potential.

12 Ecological information:**Additional ecological information:****General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water.
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations**Product:****Recommendation**

Hand over to disposers of hazardous waste.
Must be specially treated under adherence to official regulations.
Consult state, local or national regulations for proper disposal.

Uncleaned packagings:**Recommendation:**

Disposal must be made according to official regulations.

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Trade name **Trimethylsulfonium tetrafluoroborate**

Recommended cleaning agent: Water, if necessary with cleaning agent.

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14 Transport information

Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)



ADR/RID-GGVS/E Class: 8 (C4) Corrosive substances.
 Kemler Number: 80
 UN-Number: 3261
 Packaging group: II
 Label: 8
 Designation of goods: 3261 CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (Trimethylsulfonium tetrafluoroborate)
 Limited quantities (LQ): LQ23
 Transport category: 2
 Tunnel restriction code: E

Maritime transport IMDG/GGVSea:



IMDG/GGVSea Class: 8
 UN Number: 3261
 Label: 8
 Packaging group: II
 EMS Number: F-A, S-B
 Marine pollutant: No
 Segregation groups: Acids
 Correct technical name: CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (Trimethylsulfonium tetrafluoroborate)

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 8
 UN/ID Number: 3261
 Label: 8
 Packaging group: II
 Correct technical name: CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (Trimethylsulfonium tetrafluoroborate)

UN "Model Regulation":

UN3261, CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S., 8, II

15 Regulatory information

Designation according to EC guidelines:

Code letter and hazard designation of product:



C Corrosive

Risk phrases:

34 Causes burns.

Safety phrases:

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

National regulations

Information about limitation of use:

For use only by technically qualified individuals.
 Employment restrictions concerning young persons must be observed.

Water hazard class:

Water hazard class 1 (Self-assessment): slightly hazardous for water.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing data specification sheet: Health, Safety and Environmental Department.

Contact: Zachariah Holt

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)