



MATERIAL SAFETY DATA SHEET

according to the Global Harmonized System

Date of issue: 02/04/2013

Version 1.0

SECTION 1. Identification

Product identifier

Product number 818313
Product name tert-Butyldimethylsilyl trifluoromethanesulfonate for synthesis

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

Identified uses Chemical for synthesis

Details of the supplier of the safety data sheet

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24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification

Flammable liquid, Category 3, H226
Specific target organ systemic toxicity - single exposure, Category 3, H335
Skin corrosion, Category 1B, H314
For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms



Signal Word
Danger

Hazard Statements

H226 Flammable liquid and vapor.
H314 Causes severe skin burns and eye damage.

MATERIAL SAFETY DATA SHEET
according to the Global Harmonized System

Product number 818313
Product name tert-Butyldimethylsilyl trifluoromethanesulfonate for synthesis

Version 1.0

H335 May cause respiratory irritation.

Precautionary Statements

P210 Keep away from heat.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

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

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula	$\text{CF}_3\text{SO}_3\text{Si}(\text{CH}_3)_2\text{C}(\text{CH}_3)_3$	$\text{C}_7\text{H}_{15}\text{F}_3\text{O}_3\text{SSi}$ (Hill)
CAS-No.	69739-34-0	
Molar mass	264.34 g/mol	

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

tert.-butyldimethylsilyl trifluoromethanesulphonate (>= 90 % - <= 100 %)

69739-34-0

SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air. Call in physician.

Skin contact

After skin contact: wash off with plenty of water. Immediately remove contaminated clothing. If available swab with polyethylene glycol 400. Call a physician immediately.

Eye contact

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

Ingestion

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

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Cough, Shortness of breath, Risk of blindness!

Indication of any immediate medical attention and special treatment needed

No information available.

MATERIAL SAFETY DATA SHEET
according to the Global Harmonized System

Product number 818313
Product name tert-Butyldimethylsilyl trifluoromethanesulfonate for synthesis

Version 1.0

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂), Dry powder

Unsuitable extinguishing media

Water, Foam

Special hazards arising from the substance or mixture

Combustible material, Vapors are heavier than air and may spread along floors.

Avoid shock and friction.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapors possible in the event of fire.

Fire may cause evolution of:

Hydrogen fluoride, Sulfur oxides

Advice for firefighters

Special protective equipment for fire-fighters

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

Further information

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

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapors, aerosols.

Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

Do not empty into drains. Risk of explosion.

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.

SECTION 7. Handling and storage

Precautions for safe handling

Keep workplace dry. Do not allow product to come into contact with water.

Observe label precautions.

MATERIAL SAFETY DATA SHEET
according to the Global Harmonized System

Product number 818313
Product name tert-Butyldimethylsilyl trifluoromethanesulfonate for synthesis

Version 1.0

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Store at +2°C to +8°C (+36°F to +46°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Contains no substances with occupational exposure limit values.

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

Eye/face protection

Tightly fitting safety goggles

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:

Acid-resistant protective clothing.

Respiratory protection

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	No strong odor known.
Odor Threshold	No information available.
pH	No information available.

MATERIAL SAFETY DATA SHEET
according to the Global Harmonized System

Product number 818313 Version 1.0
Product name tert-Butyldimethylsilyl trifluoromethanesulfonate for synthesis

Melting point	No information available.
Boiling point/boiling range	149 - 153 °F (65 - 67 °C) at 13 hPa
Flash point	97 °F (36 °C)
Evaporation rate	No information available.
Flammability (solid, gas)	not applicable
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	No information available.
Relative vapor density	No information available.
Relative density	1.151 g/cm ³ at 68 °F (20 °C)
Water solubility	at 68 °F (20 °C) (decomposition)
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	No information available.

SECTION 10. Stability and reactivity

Reactivity

Vapor/air-mixtures are explosive at intense warming.

Chemical stability

heat-sensitive
sensitive to moisture

Possibility of hazardous reactions

Violent reactions possible with:
Water, Alcohols, Strong oxidizing agents, alkalines, acids

Conditions to avoid

Avoid shock and friction.
Heating.

MATERIAL SAFETY DATA SHEET
according to the Global Harmonized System

Product number 818313
Product name tert-Butyldimethylsilyl trifluoromethanesulfonate for synthesis

Version 1.0

A range from approx. 15 Kelvin below the flash point is to be rated as critical.
Exposure to moisture.

Incompatible materials
no information available

Hazardous decomposition products
in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact

Acute oral toxicity

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Acute inhalation toxicity

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:., damage of respiratory tract

Irritating to respiratory system.

Skin irritation

Causes burns.

Eye irritation

Causes serious eye damage.

Risk of blindness!

Specific target organ systemic toxicity - single exposure

May cause respiratory irritation.

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or

MATERIAL SAFETY DATA SHEET
according to the Global Harmonized System

Product number 818313
Product name tert-Butyldimethylsilyl trifluoromethanesulfonate for synthesis

Version 1.0

equal to 0.1% is identified as a carcinogen or potential
carcinogen by ACGIH.

Further information

Quantitative data on the toxicity of this product are not available.
Further data:
Other dangerous properties can not be excluded.
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

No information available.

Persistence and degradability

No information available.

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Other adverse effects

Additional ecological information

Biological effects:
Product reacts with water. After hydrolysis acid effect on fish and plankton.
Further information on ecology
Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

UN number	UN 2920
Proper shipping name	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (TERT-BUTYLDIMETHYLSILYLTRIFLUOROMETHANESULFONAT E)
Class	8 (3)
Packing group	II
Environmentally hazardous	--

Air transport (IATA)

MATERIAL SAFETY DATA SHEET
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UN number UN 2920
Proper shipping name CORROSIVE LIQUID, FLAMMABLE, N.O.S. (TERT-BUTYLDIMETHYLSILYLTRIFLUOROMETHANESULFONATE)
Class 8 (3)
Packing group II
Environmentally hazardous --
Special precautions for user no

Sea transport (IMDG)

UN number UN 2920
Proper shipping name CORROSIVE LIQUID, FLAMMABLE, N.O.S. (TERT-BUTYLDIMETHYLSILYLTRIFLUOROMETHANESULFONATE)
Class 8 (3)
Packing group II
Environmentally hazardous --
Special precautions for user yes
EmS F-E S-C

SECTION 15. Regulatory information

United States of America

Canada

WHMIS Classification

B2 Flammable Liquid
D2B Toxic Material Causing Other Toxic Effects
E Corrosive Material

Flammable Liquid, Respiratory irritant, Corrosive to skin, Corrosive to eyes

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

Notification status

TSCA: Not Listed on TSCA inventory. For Research and Development Use only. Not For Manufacturing or Commercial Purposes.

Ingredients

tert.-butyldimethylsilyl trifluoromethanesulphonate

DSL: This product contains one or several components that are not on the Canadian DSL nor NDSL.

Ingredients

tert.-butyldimethylsilyl trifluoromethanesulphonate

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

MATERIAL SAFETY DATA SHEET
according to the Global Harmonized System

Product number 818313
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Version 1.0

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

H226 Flammable liquid and vapor.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Date of issue: 02/04/2013

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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