

Material Safety Data Sheet

1 - Product and Company Information

Product Name TERT-BUTYLMAGNESIUM CHLORIDE SOLUTION,
~1 M IN THF SOLUTION.

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2 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Extremely flammable. Reacts violently with water, liberating extremely flammable gases. May form explosive peroxides. Harmful if swallowed. Causes burns. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.

3 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
TERT-BUTYLMAGNESIUM CHLORIDE SOLUTION, ~1M IN THF	None	None	None

Ingredient Name	Percent	CAS #	EC no	Annex I Index Number
TERT-BUTYLMAGNESIUM CHLORIDE	>= 25 <= 30	677-22-5	211-638-6	None

Symbols: F-C

R-Phrases: 14/15-34

Reacts violently with water, liberating extremely flammable gases.
Causes burns.

tetrahydrofuran, INHIBITOR	>= 76	109-99-9	203-786-5
FREE	<= 78		

Symbols: F+-Xn

R-Phrases: 12-19-22-66-67

Extremely flammable. May form explosive peroxides. Harmful if swallowed. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.

Formula C4H9ClMg

4 - First Aid Measures

AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

AFTER SKIN CONTACT

In case of contact, immediately wash skin with soap and copious amounts of water.

AFTER EYE CONTACT

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

5 - Fire Fighting Measures

CONDITIONS OF FLAMMABILITY

Reacts with water to liberate flammable and/or explosive gas.

EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

Unsuitable: Do not use water.

SPECIAL RISKS

Specific Hazard(s): Extremely flammable. Vapor may travel considerable distance to source of ignition and flash back. Emits toxic fumes under fire conditions. Water reactive material. Explosion Hazards: Vapor may travel considerable distance to source of ignition and flash back.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition. Use nonsparking tools.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Conditions of Storage: Keep tightly closed. Keep away from heat, sparks, and open flame. Store in a cool dry place. Handle and store under nitrogen.

Incompatible Materials: Do not allow contact with water

SPECIAL REQUIREMENTS: Reacts violently with water.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

GENERAL HYGIENE MEASURES

Remove and wash contaminated clothing promptly. Wash thoroughly after handling.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (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.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

Appearance	Physical State: Liquid	
Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	N/A	
Flash Point	- 40,000 °C.	Method: closed cup
Flammability	N/A	
Autoignition Temp	N/A	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	N/A	
SG/Density	0,8280 g/cm3	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions of Instability: May form peroxides of unknown stability.

Conditions to Avoid: Moisture. Light. Heat. Air.

Materials to Avoid: Strong oxidizing agents, Alcohols, Acids Water reactive material.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Hydrogen chloride gas, Magnesium oxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

11 - Toxicological Information

SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Symptoms of exposure may include burning sensation, coughing,

wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

ROUTE OF EXPOSURE

Skin Contact: Causes burns.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes burns.

Inhalation: Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: Harmful if swallowed.

TARGET ORGAN INFORMATION

Central nervous system. Kidneys. Liver. G.I. System. Skeletal muscle.

12 - Ecological Information

No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR

UN#: 3399

Class: 4.3

PG: I

Subrisk: 3

Proper Shipping Name: Organometallic substance,
liquid, water-reactive, flammable

IMDG

UN#: 3399

Class: 4.3

PG: I

Subrisk: 3

Proper Shipping Name: Organometallic substance,
liquid, water-reactive, flammable

Marine Pollutant: No

Severe Marine Pollutant: No

Technical Name: Required

IATA

UN#: 3399

Class: 4.3

PG: I

Subrisk: 3

Proper Shipping Name: Organometallic substance,
liquid, water-reactive, flammable

Inhalation Packing Group I: No

Technical Name: Required

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: F+-C

Extremely Flammable. Corrosive.

R-PHRASES: 12-14/15-19-22-34-66-67

Extremely flammable. Reacts violently with water, liberating extremely flammable gases. May form explosive peroxides. Harmful if swallowed. Causes burns. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.

S-PHRASES: 9-16-26-29-33-36/37/39-43-45

Keep container in a well-ventilated place. Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not empty into drains. Take precautionary measures against static discharges. Wear suitable protective clothing, gloves, and eye/face protection. In case of fire, use dry powder. Never use water. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

COUNTRY SPECIFIC INFORMATION

Germany

WGK: 1

Self-Classification

16 - Other Information

WARRANTY

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. Nanjing Freehoo Chemical Technology Co., Ltd, shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2010 Nanjing Freehoo Chemical Technology Co., Ltd License granted to make unlimited paper copies for internal use only.

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