



TERT-BUTYLMAGNESIUM CHLORIDE IN DEE

CAS No. 677-22-5

QS-PDS-057 Revision: 00

Product Names *tert*-Butylmagnesium chloride

Formula C₄H₉MgCl

Appearance Brown/gray liquid

Application *tert*-Butylmagnesium chloride, namely a Grignard reagent, is used primarily to add a *tert*-butyl group to carbonyl groups. This reagent can also be used as a strong base in aprotic solvents. For reviews see: 1) *J.Am.Chem.Soc.* **1967**, 89, 1964; 2) *Synthesis* **1977**, 18; and 3) *Pure Appl. Chem.* **1980**.

Product Specification

tert-Butylmagnesium chloride Guaranteed* 20 – 26 wt.% (1.4 – 1.8 Molar)

* This product can be made to agreed upon customer specifications, including various concentrations and carrier systems.

Solvent Diethyl ether (DEE)

Physical Properties

| | |
|-------------------------------|----------------|
| Molecular weight | 116.87 |
| Density @20°C | 0.80 g/mL |
| Boiling point of pure solvent | 34.5 °C (DEE) |
| Volatiles, % by weight | 74 - 80% |
| Pyrophoricity | Non-pyrophoric |

Solubility Crystallizes at -10°C.

Thermal Stability Stable under recommended storage conditions.



TERT-BUTYLMAGNESIUM CHLORIDE IN DEE

CAS No. 677-22-5

Toxicity/Safety Data

Flammable liquid. Water reactive. In case of fire, do not use water or carbon dioxide.

Corrosive to the eyes (may cause blindness), skin, mucous membranes and upper respiratory tract. Inhalation of vapors may cause dizziness, nausea, anesthesia, numbness, motor weakness in fingers and toes, incoordination, and headache.

ADDITIONAL INFORMATION ON SAFETY IS CONTAINED IN THE OPTIMA NEW PRODUCT DATA SHEET (NPDS) AVAILABLE FOR THIS PRODUCT.

Handling/Storage/Disposal

Use in a closed system under argon or nitrogen. Do not get in eyes, on skin or clothing. Do not breathe vapors or mist.

Store in a cool place. Storage temperature should be -5°C to +30°C. Keep container closed. Keep away from sources of ignition, water, air, acids and oxidizing agents.

Shipping Containers

| | |
|-----------------|-------------------------|
| Bulk containers | 2500 – 20000 L |
| Cylinders | #5 – 420 L |
| Drums | 55 Gal |
| Glass bottles | 125 mL, 500 mL, and 1 L |

Shipping Limitations

Shipments of *tert*-Butylmagnesium chloride in DEE are described as “Organometallic substance, liquid, water-reactive, flammable (*T-BUTYLMAGNESIUM CHLORIDE, DIETHYL ETHER, SOLUTION*) 4.3 (3), UN 3399, PG I.” Shipments require “Dangerous When Wet” and “Flammable Liquid” labels.

| | |
|--------------|--|
| Post, Parcel | Forbidden |
| Sea | Class 4.3 (3) (IMDG) |
| Road, Rail | Class 4.3 (3) (DOT, RID/ADR) |
| Air | Class 4.3 (3) (IATA) |
| | 1.0 L maximum per inner glass container. |
| | 1.0 L maximum per outer container. |
| | Cargo aircraft only |

For shipments within Europe, labeling for supply requirements are:

| | |
|------------|--------------------------------|
| F | Flammable |
| C | Corrosive |
| R&S Phrase | See Material Safety Data Sheet |

Responsible Care® initiative dictates that all shipments must be transported in a DOT-approved vehicle in a responsible manner (i.e., no flat bed trucks).

Additional Resources

Refer to the Organometallics and Reactive Specialty Organics Safe Handling Guide available on-line at www.optimachem.com.