

**Product Names** Dibutylmagnesium, DBM

**Formula** (C<sub>4</sub>H<sub>9</sub>)<sub>2</sub>Mg

**Appearance** Colorless to yellow solution

**Application** DBM is a hydrocarbon soluble, non-pyrophoric dialkylmagnesium compound. In order to increase hydrocarbon solubility, there is a 10 mole% n-octyl group also present. DBM is used to metalate amines, alcohols, and other acidic substrates to afford the corresponding magnesium compounds. DBM is also an excellent indirect source of anhydrous MgCl<sub>2</sub> or MgBr<sub>2</sub>, when reacted with the appropriate anhydrous acid or halogenating reagent. DBM is used as a promoter for Ziegler-Natta polyolefin catalyst systems. For leading references, consult 1) *Polymer* **1995**, 36, 2995; 2) *Polymer International*, John Wiley & Sons: **2002**; Vol. 51 (8), pp 729-737.

**Product Specification**

	<u>Guaranteed*</u>
Dibutylmagnesium, wt%	14.0 +/- 1.0
Lithium, mg/l	100 max.
Chloride, wt %	0.20 max.
Turbidity, NTU's	75 max

*\*This product can be made to agreed upon customer specifications*

**Solvent** Commercial hexanes

**Physical Properties**

Molecular weight	145
Density @20°C	0.705 g/cm <sup>3</sup> at 14 wt %
Contained DBM	99 g/L (.82 lb/gal)
Pyrophoricity	Non-pyrophoric

**Solubility** DBM in hexanes is moderately soluble in aliphatic, cycloaliphatic, and aromatic hydrocarbon. It is highly soluble in etheral solvents, or mixtures of etheral and hydrocarbon solvents.

**Thermal Stability** DBM in hexanes is stable indefinitely at 20°C, if kept sealed under an inert atmosphere.



**Toxicity/Safety Data**

Flammable liquid. Water reactive. In case of fire do not use water or carbon dioxide. Reacts violently with water to give off flammable fumes and corrosive dusts. Clear, colorless to pale yellow solution with gasoline-like odor.

Corrosive to eyes (may cause blindness), skin, nose, throat and stomach. Inhalation of vapors may cause dizziness, nausea, anesthesia, numbness, burning sensation and motor weakness in fingers and toes, incoordination, and headache. If ingested, may produce a lung aspiration hazard.

*COMPLETE INFORMATION ON TOXICITY AND SAFETY IS CONTAINED IN THE OPTIMA MATERIAL SAFETY DATA SHEET (MSDS) 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. Keep container closed. Keep away from sources of ignition, water, air, acids and oxidizing agents.

**Shipping Containers**

Bulk containers	2000 - 20,000 L (500 - 5000 gallons)
Cylinders	#5 - 420 L
Glass bottles	125 mL, 500 mL, and 1 L

**Shipping Limitations**

Shipments of DBM are described as "Organometallic Substance, Liquid, Water Reactive, Flammable, N.O.S. (DIBUTYLMAGNESIUM IN HEXANE, SOLUTION) 4.3 (3), UN3399, PG I." Shipments require "Dangerous When Wet" and "Flammable" labels.

Post, Parcel, Air	Not acceptable
Sea	Class 4.3 (3) (IMDG)
Road, Rail	Class 4.3 (3) (DOT, RID/ADR)

For shipments within Europe, labeling for supply requirements are:

F	Highly Flammable
N	Dangerous for the Environment
R&S Phrases	See Material Safety Data Sheet

Responsible Care® initiative dictates that all shipments of 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.