LITHIUM t-BUTOXIDE (LTB) 2.0M THF SOLUTION

Product Names
Lithium t-butoxide, Lithium tert-butoxide, Lithium tertiary-butoxide, LTB

Formula
(CH₃)₃CO–Li

Appearance
Clear, light to dark brown solution

Application
LTB is a mild base used mainly in organic synthesis. It can also be used in conjunction with organometallic reagents/catalysts to modify their reactivity and selectivity. This tetrahydrofuran (THF) solution of LTB is very easy to transfer from shipping container to storage or reactor. The solution is flammable and corrosive. Solutions tend to darken when exposed to air. On contact with moisture, LTB is converted to t-butanol and lithium hydroxide, causing the solution to become cloudy.

Product Specification

<table>
<thead>
<tr>
<th>Property</th>
<th>Guaranteed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium t–butoxide, wt%</td>
<td>18.0 +/- 1.0 (2.0 M)</td>
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<tr>
<td>Turbidity</td>
<td>100 NTU’s max.</td>
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</tbody>
</table>

* This product can be made to agreed upon customer specifications

Solvent
Tetrahydrofuran (THF)

Physical Properties
- Molecular weight: 80.06
- Density @20°C: 0.885 g/mL (7.39 lb/gal)
- Contained lithium t–butoxide: 159 g/L (1.33 lb/gal)
- Pyrophoricity: Non–pyrophoric

Solubility
LTB is soluble in hexanes, MTBE, and several other organic solvents.

Thermal Stability
LTB in THF is very stable at room temperature. At 40°C, solutions slowly become hazy with little detectable decomposition. The accidental introduction of oxygen into LTB solutions may cause darkening of color.
LITHIUM T-BUTOXIDE (LTB) 2.0M THF SOLUTION

FMC Product Code No. 621-01

CAS No. 1907-33-1

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.

COMPLETE INFORMATION ON TOXICITY AND SAFETY IS CONTAINED IN
THE FMC 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 2500 – 20000 L
Cylinders #5 – 420 L
Drums 55 gallon
Glass bottles 500 mL

Shipping Limitations
Shipments of LTB are described as "Flammable Liquid, Corrosive, N.O.S.,
(LITHIUM T–BUTOXIDE IN TETRAHYDROFURAN), 3(8), UN2924, PG II."
Shipments require "Flammable Liquid" and "Corrosive" labels.

Post, Parcel
Sea
Road, Rail (USA)
Road, Rail (EU)
Air

Not acceptable
Class 3 (8) (IMDG)
Class 3 (8) (DOT)
Class 3 (8) (RID/ADR)
Class 3 (8) (IATA)

2.5 L maximum per inner glass container.
5.0 L maximum per single/outer container.
Cargo aircraft only.

For shipments within Europe, labeling for supply requirements are:

F Highly Flammable
C Corrosive
R&S Phrases See Material Safety Data Sheet

Responsible Care® initiative dictates that all shipments of lithium chemicals
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.