



LITHIUM *t*-BUTOXIDE (LTB) 2.0M THF SOLUTION

CAS No. 1907-33-1

QS-PDS-016 Revision: 01

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

Formula (CH₃)₃CO-Li

Appearance Clear, yellow to 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

	<u>Guaranteed*</u>
Lithium <i>t</i> -butoxide, wt%	18.0 +/- 1.0 (2.0 M)
<i>t</i> -butanol, wt%	15.5 – 22.5
Turbidity	100 NTU's max.

** 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 <i>t</i> -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.

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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 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	2500 – 20000 L
	Cylinders	#5 – 420 L
	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	Not acceptable
Sea	Class 3 (8) (IMDG)
Road, Rail (USA)	Class 3 (8) (DOT)
Road, Rail (EU)	Class 3 (8) (RID/ADR)
Air	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.