



ISOBUTYLLITHIUM 20% IN HEXANES (IBL)

CAS No. 920-36-5

QS-PDS-005 Revision: 01

Product Names Isobuytllithium, 2-Methyl-1-propyllithium, IBL

Formula $(\text{CH}_3)_2\text{CHCH}_2\text{-Li}$

Appearance Clear, colorless to yellow solution

Application Isobutyl lithium in hexanes is a **DEVELOPMENTAL** product. This organolithium species is an excellent nucleophile for the addition of an isobutyl moiety into an organic or organometallic substrate. A higher yield of the addition product was obtained with IBL versus the corresponding Grignard reagent, see Z. Han, D. Krishnamurthy, D. Pflum, P. Grover, S. A. Wald and C. H. Senanayake, *Org. Lett.*, **2002**, *4*, 4025

Product Specification

	<u>Guaranteed*</u>
Isobutyl lithium, wt%	18.0 – 22.0
Free Alkalinity, wt%	1.2 max
Carbon-bound Lithium, %	95.0 min

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

Solvent Commercial hexanes

Physical Properties		
Molecular weight		64.06
Density @20°C		0.684 g/mL (5.71 lb/gal)
Contained butyllithium		136.8 g/L (1.14 lb/gal)
Pyrophoricity		Pyrophoric

Solubility Isobutyl lithium is miscible in all proportions with aliphatic, aromatic, and ethereal solvents; however, there is some reactivity with the latter two solvent types.

Thermal Stability		
0°C		0.03% loss per day
20°C		0.1% loss per day
40°C		0.18% loss per day



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Toxicity/Safety Data Pyrophoric liquid. Can catch fire if exposed to air. Reacts violently with water to give off flammable gases and corrosive dusts. Corrosive to eyes (may cause blindness), skin, nose, throat and stomach. Can catch fire on contact with body moisture or if exposed to air. Inhalation of vapors may cause dizziness, nausea, anesthesia, numbness, motor weakness in fingers and toes, incoordination, and headache. If ingested, may produce a lung aspiration hazard.

ADDITIONAL INFORMATION ON SAFETY IS CONTAINED IN THE OPTIMA NEW PRODUCT DATA SHEET (NPDS) AVAILABLE FOR THE 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	125 mL, 500 mL and 1L

Shipping Limitations Shipments of IBL are described as "LITHIUM ALKYLs, 4.2 (4.3), UN2445, PG I." Shipments require "Spontaneously Combustible" and "Dangerous When Wet" labels.

Post, Parcel, Air	Not acceptable
Sea	Class 4.2 (4.3) (IMDG)
Road, Rail (USA)	Class 4.2 (4.3) (DOT)
Road, Rail (EU)	Class 4.2 (4.3) (RID/ADR)

For shipments within Europe, labeling for supply requirements are:

F	Highly Flammable
C	Corrosive
N	Hazardous for the environment
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 Butyllithium Safe Handling Guide.