

ISOBUTYLLITHIUM 20% IN HEXANES (IBL)

CAS No. 920-36-5

QS-PDS-005 Revision: 01

FMC Product Code No. 643-144

Product Names Isobutyl lithium, 2-Methyl-1-propyl lithium, 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 |

Air Treatment Construction Energy Fine Chemicals Glass & Ceramics Greases & Lubricants Polymers Pool Water Treatment

| | | | | | | |
|----------------|--|---|---|--|--|--|
| MARKETS SERVED | NORTH AMERICA AND HEADQUARTERS FMC Lithium Seven LakePointe Plaza 2801 Yorkmont Road, Suite 300 Charlotte, NC 28208 P: +1.704.426.5300 F: +1.704.426.5370 | EUROPE FMC Chemicals Commercial Road Bromborough Merseyside CH62 3NL, England P: +44.151.482.7356 F: +44.151.482.7361 | JAPAN FMC Lithium 9F, Aoyama Building 1-2-3, Kita-Aoyama Minato-ku, Tokyo 107-0061, Japan T: +81.3.3402.3716 F: +81.3.3402.3700 | CHINA FMC Lithium 15F Far East International Plaza No. 317 Xianxia Road Shanghai 200051 P. R. China T: +86.21.6235.1919 T: +86.21.6235.1917 | INDIA FMC India Private Limited Embassy Star 8, Palace Road High Grounds Bangalore 560052, India T: +91.80.2238.4311 F: +91.80.2238.5255 | TAIWAN FMC Lithium 9F-1, 263 Tun Hwa S. Rd. Sec. 1 Taipei, Taiwan T: +866.2.2705.4400 F: +866.2.2702.7460 |
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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 FMC 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.