

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** n-Butyllithium in Isopar C  
**CHEMICAL FAMILY:** Alkylolithiums  
**MOLECULAR FORMULA:** C<sub>4</sub>H<sub>9</sub>Li  
**GENERAL USE:** Industrial Manufacturing

**MANUFACTURER**  
FMC CORPORATION  
Lithium Division  
P.O. Box 795  
Bessemer City, NC 28016-0795  
**General Information:** (704) 868-5300

**Emergency Telephone Numbers:**  
**CHEMTREC** (800) 424-9300  
**Emergency Phone** (704) 629-5361 (Plant) Call Collect 24 Hr/Day  
**Emergency Phone** (303) 595-9048 (Medical) Call Collect

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

| <u>Chemical Name</u>                            | <u>CAS #</u> | <u>Wt. %</u> |
|---|--------------|--------------|
| n-Butyllithium                                  | 109-72-8     | 10 - 30      |
| Synthetic Isoparaffinic hydrocarbon (Isopar C)* | 64741-66-8   | 70 - 90      |

\* Contains 2,2,4 trimethylpentane, CAS# 540-84-1

### 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

#### IMMEDIATE CONCERNS:

#### POTENTIAL HEALTH EFFECTS:

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.

#### COMMENTS:

(See Section 11, Toxicological Information)

### 4. FIRST AID MEASURES

#### EYES:

Immediately flush with water for at least 15 minutes, lifting the upper and lower eyelids intermittently. See a medical doctor or ophthalmologist immediately.

#### SKIN:

Immediately flush with plenty of water while removing contaminated clothing and/or shoes, and thoroughly wash with soap and water. Obtain immediate medical attention. Contact a medical doctor if necessary.

#### INGESTION:

Quickly wipe material from the mouth and rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.

**INHALATION:**

Remove to fresh air. If breathing discomfort occurs and persists, see a medical doctor. If breathing has stopped, give artificial respiration and see a medical doctor immediately.

**NOTES TO MEDICAL DOCTOR:**

Product is highly alkaline and is corrosive to the eyes, skin and mucous membranes. Consideration should be given to careful endoscopy as stomach or esophageal burns, perforations or strictures may occur. Careful gastric lavage with an endotracheal tube in place should be considered. Observation may be warranted. Treatment is controlled removal of exposure followed by symptomatic and supportive care.

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## **5. FIRE FIGHTING MEASURES**

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**FLAMMABLE LIMITS:**

Not applicable for formulation. For Isopar C: Upper: 6.3 Lower: 0.9 (at 77 F°)

**GENERAL HAZARD:**

Pyrophoric. Flammable liquid.

**EXTINGUISHING MEDIA:**

DO NOT USE WATER OR CARBON DIOXIDE. Use dry chemical.

**HAZARDOUS COMBUSTION PRODUCTS:**

Lithium hydroxide, carbon monoxide, carbon dioxide.

**FIRE FIGHTING PROCEDURES:**

Wear full protective clothing and self-contained breathing apparatus (SCBA) approved for fire fighting. This is necessary to protect against the hazards of heat, products of combustion and oxygen deficiency. Do not breathe smoke, gases or vapors generated.

**AUTOIGNITION TEMPERATURE:**

Not available

**PROPERTIES CONTRIBUTING TO**

Water reactivity (pyrophoricity) of product, and volatility of solvents.

**FLAMMABILITY:**

**FLASH POINT:**

Not applicable. The flashpoint of Isopar C is 18 °C

**SENSITIVITY TO STATIC DISCHARGE:**

Yes

**SENSITIVITY TO IMPACT:**

Not applicable

**COMMENTS:**

(See Section 10, Stability and Reactivity)

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## **6. ACCIDENTAL RELEASE MEASURES**

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**RELEASE NOTES:**

Remove all sources of ignition. Spilled material can catch fire spontaneously on contact with air, moisture, acids or oxidizing materials. Cover spill with dry extinguishant. DO NOT USE WATER OR CARBON DIOXIDE. Contain spill with absorbant. Expose to air until solvent has dissipated. Sweep up and place in approved transport container. Dispose of waste according to local and Federal laws and regulations.

Before cleanup measures begin, review the entire MSDS with particular attention to Section 3, Emergency Overview and Potential Health Effects; and Section 8, Recommended Personal Protective Equipment.

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## **7. HANDLING AND STORAGE**

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**HANDLING:**

KEEP AWAY FROM WATER, AIR AND OXIDIZING MATERIALS. Wear full face protection and gloves. Use in a closed system under argon or nitrogen.

**STORAGE:**

Keep away from heat, sparks and flame. Protect storage container from leaks and physical damage.

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## **8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

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#### **EXPOSURE LIMITS**

| <b><u>Chemical Name</u></b> | <b><u>TWA<br/>(ACGIH)</u></b> | <b><u>STEL/Ceiling<br/>(ACGIH)</u></b> | <b><u>PEL<br/>(OSHA)</u></b> | <b><u>STEL/Ceiling<br/>(OSHA)</u></b> |
|-----------------------------|-------------------------------|--|------------------------------|---------------------------------------|
|-----------------------------|-------------------------------|--|------------------------------|---------------------------------------|

None established.

Note: Exposure limit of 1400 mg/m<sup>3</sup> (300 ppm), based on total hydrocarbon is recommended by ExxonMobil for Isopar C.

#### **ENGINEERING CONTROLS:**

Use in closed system under argon or nitrogen. If personal contact can occur, use local exhaust ventilation (explosion-proof), to keep airborne concentrations below exposure limits.

#### **PERSONAL PROTECTIVE EQUIPMENT**

**Eyes And Face:**

Chemical splash goggles with a face shield.

**Respiratory:**

When engineering controls are not adequate, wear a NIOSH/MSHA respirator approved for protection against organic vapors, dusts and mists.

**Protective Clothing:**

Rubber gloves and rubber clothing.

**Work Hygienic Practices:**

Quick-drench eyewash and safety shower.

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### **9. PHYSICAL AND CHEMICAL PROPERTIES**

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**ODOR:**

Gasoline-like

**APPEARANCE:**

Clear, water-white to pale yellow liquid

**pH:**

Reacts violently with water giving mixture with pH >12

**PERCENT VOLATILE:**

70-90 varies with concentration

**VAPOR PRESSURE:**

Not available

**VAPOR DENSITY:**

Not available

**BOILING POINT:**

208-219 °F (Isopar C)

**MELTING POINT:**

Not available

**SOLUBILITY IN WATER:**

Reacts violently with water

**EVAPORATION RATE(Butyl Acetate = 1):**

4.3 (Isopar C)

**SPECIFIC GRAVITY:**

0.707 g/ml

**MOLECULAR WEIGHT:**

64.06

**COEFF. OIL/WATER:**

Not applicable

**ODOR THRESHOLD:**

Not applicable

**FLAMMABLE LIMITS:**

Not applicable for formulation. For Isopar C: Upper: 6.3 Lower: 0.9 (at 77 F°)

**FLASH POINT:**

Not applicable. The flashpoint of Isopar C is 18 °C

**AUTOIGNITION TEMPERATURE:**

Not available

**EXPLOSIVE PROPERTIES:**

Not explosive

**OXIDIZING PROPERTIES:**

Not an oxidizer

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### **10. STABILITY AND REACTIVITY**

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**CONDITIONS TO AVOID:**

Heat, sparks or flames

**STABILITY:**

Stable

**POLYMERIZATION:**

Will not occur

**HAZARDOUS DECOMPOSITION**

Lithium hydroxide, lithium hydride

**PRODUCTS:**

**INCOMPATIBLE MATERIALS:**

Water, air, oxidizers, carbon dioxide, acids

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### **11. TOXICOLOGICAL INFORMATION**

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**Eye Contact:** No data available for the product.  
n-Butyllithium: Corrosive.

**Skin Contact:** No data available for the product.  
n-Butyllithium: Corrosive.

**Skin Absorption:** No data available for the product.  
n-Butyllithium: Corrosive.

**Ingestion:** No data available for the product.

**Inhalation:** No data available for the product.

**Acute Effects From Overexposure:**

This product contains an alkyl lithium compound which is extremely reactive and corrosive to skin, eyes (may cause blindness), 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. Low viscosity material--if swallowed may enter the lungs and cause lung damage.

**Chronic Effects From Overexposure:**

No data available for product.  
Isopar C: Prolonged contact with Isopar C may cause defatting of the skin and skin irritation.

**Sensitization:** No

**Carcinogenicity:** EH40: Not listed.  
IARC: Not listed.  
NTP: Not listed.  
OSHA: Not considered a carcinogen under OSHA.  
ACGIH: Not listed

**Mutagenicity:** No

**Reproductive Toxicity:** No

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## 12. ECOLOGICAL INFORMATION

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**Ecotoxicological Information:**

Environmental toxicity testing of the product has not been carried out.

**Chemical Fate Information:**

No data available for product.  
n-Butyllithium: n-Butyllithium reacts violently with water to form butane and lithium hydroxide.

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## 13. DISPOSAL CONSIDERATIONS

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**DISPOSAL METHOD:** Dispose of waste according to local and Federal laws and regulations.

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## 14. TRANSPORT INFORMATION

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**PROPER SHIPPING NAME:** Organometallic substance, liquid, pyrophoric, water-reactive (n-butyllithium, hydrocarbon solution)

**CLASSIFICATION:** 4.2, Spontaneously combustible, (4.3, Dangerous When Wet)

**LABELS:** Spontaneously Combustible, Dangerous When Wet

**UN NUMBER:** UN3394  
**PACKING GROUP:** I  
**CUSTOM TARIFF NO:** 2931.00.9060  
**MARINE POLLUTANT:** No

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## 15. REGULATORY INFORMATION

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**UNITED STATES**  
**SECTION 311 HAZARD CATEGORY (40 CFR 370):** Immediate (acute) health hazard, delayed (chronic) health hazard, fire hazard, reactive  
**SECTION 313 REPORTABLE INGREDIENTS (40 CFR 372):** This product does not contain a toxic chemical subject to the reporting requirements of Section 313 of Emergency Planning and Community Right-To-Know Act of 1986.

**SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):** Not listed  
**CERCLA HAZARDOUS SUBSTANCE (40 CFR 302.4):** Not listed  
**TSCA SEC 12B EXPORT NOTIFICATION:** This product is not subject to TSCA 12 (b) Export Notification Requirements.  
**TSCA INVENTORY STATUS (40 CFR 710):** Listed

**CANADA**  
**WHMIS:** Product Identification No.: 3394  
Hazard Classification: Class B, Division 6 (Reactive Flammable Materials)  
Class E, (Corrosive)  
Ingredient Disclosure List: Not listed.

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## 16. OTHER INFORMATION

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**REVISION SUMMARY:** Revision # 5: Regular review conducted. Sections 2, 5, 8, 9, 11, 14 & 15 revised.

**NFPA RATING**  
**HEALTH:** 3  
**FLAMMABILITY:** 4  
**REACTIVITY:** 3  
**SPECIAL:** ♀

This MSDS has been prepared to meet U. S. OSHA Hazard Communication Standard, 29 CFR 1910.1200 and Canada's Workplace Hazardous Materials Information System (WHMIS) requirements.  
type 4

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