

SAFETY DATA SHEET

LITHIUM ORTHOPHOSPHATE

1. Identification of the Substance/Mixture and of the Company/Undertaking:

- 1.1 Product Identifier:** Lithium Orthophosphate, Tertiary
- 1.1.1 Substances**
- Alternate names and trade name** Catalytic Lithium Phosphate, Trilithium Phosphate, Tribasic Lithium Phosphate
- 1.1.2 Mixture name:** Not applicable
- 1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against:**
- Formulation and chemical synthesis in industrial manufacturing operations.
- Additive for preparations and articles for industrial and consumer use.
- Do not use for private purposes (household).

1.3 Details of the Supplier of the Safety Data Sheet

North America

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2801 Yorkmont Rd, Suite 300
Charlotte, NC 28208
Phone: +1.704.868.5300
Fax: +1.704.868.5370
1.888.lithium

Email: lithium.info@fmc.com
Web: www.fmcilithium.com

Europe

FMC Chemicals
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Bromborough, Merseyside
CH62 3NL, England
Phone: +44.151.482.7356
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Asia Pacific

FMC Lithium Asia Pacific Office
15F Far East International Plaza
Shanghai 200051, PRC
Phone: +86.21.6235 1919
Fax: +86.21.6235 1917

1.4 Emergency Telephone Number:

North America

CHEMTREC: +1.800.424.9300
Plant: +1.704.629.5361
Medical: +1.303.595.9048

Europe

24 hr Specialist advice number
(Carechem): +44.1865.407333
Office (0900-1700): +44.151.334.8085

Asia Pacific

Phone: +86.21.6235.1919
Fax: +86.21.6235.1917

2. Hazards Identification

2.1 Classification of the Substance or mixture:

2.1.1 GHS Classification [EC Regulation No 1272/2008 and US OSHA regulations]

Acute Toxicity Category 4

2.2.2 EC: Classification according to 67/548/EEC or 1999/45/EC [DSD/DPD]

Xn, R22

2.2 Label Elements:

2.2.3 Hazard Pictograms(s):



2.2.4 Signal Word:

Warning

Hazard Statement(s):

Harmful if swallowed.

H302

Precautionary Statement(s):

Wash hands thoroughly after handling.

P264

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P301 + P312

Rinse mouth.

P330

Do not eat, drink or smoke when using this product.

P270

2.3 Other Hazards

None.

Air Treatment	Construction	Energy	Fine Chemicals	Glass & Ceramics	Greases & Lubricants	Polymers	Pool Water Treatment
NORTH AMERICA AND HEADQUARTERS FMC Lithium Seven LakePoint 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 F: +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		

MARKETS SERVED

3. Composition / Information on Ingredients

3.1 Substances

3.1.1 GHS Classification [EC: Regulation No 1272/2008; US: OSHA regulations]

Chemical Name	CAS #	EC No	EC Index No	REACH Reg No	Wt. %	Classification, Hazard Statement Codes	
Lithium orthophosphate, tertiary	10377-52-3	233-823-0	not avail.	not available	99	Acute Tox. 4	H302
lithium tetraborate (impurity)	12007-60-2	234-514-3	not avail.	not available	<3	Acute Tox. 4	H302

3.1.2 EC: Classification according to 67/548/EEC or 1999/45/EC [DSD/DPD]

Chemical Name	CAS #	EC No	Wt. %	Symbols	R-phrases
Lithium orthophosphate, tertiary	10377-52-3	233-823-0	99	Xn	R22
lithium tetraborate (impurity)	12007-60-2	234-514-3	<3	Xn	R22

3.2 Mixtures

Not applicable.

(see Section 16 for R-phrases text)

4. First Aid Measures

4.1 Description of First Aid Measures

- EYES:** Flush with water for at least 15 minutes. If irritation occurs and persists, contact a medical doctor.
- SKIN:** Remove contaminated clothing and thoroughly wash with soap and water. If irritation occurs and persists, contact a medical doctor.
- INGESTION:** Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. If any discomfort persists, obtain medical attention.
- INHALATION:** Remove to fresh air. If breathing difficulty or discomfort occurs and persists, contact a medical doctor.

4.2 Most Important Symptoms and effects, both acute and delayed

This product is expected to have low oral toxicity. It may be irritating to the skin, eyes, respiratory tract and mucous membranes.

4.3 Indication of any immediate medical attention and special treatment needed.

Notes to medical doctor:

Effects of overexposure to lithium ion are well documented in the medical literature. Low toxicity is anticipated. In such cases, standard protocols for overdosage are suggested. Treatment is otherwise symptomatic and supportive.

5. Fire-Fighting Measures

- 5.1 **Extinguishing media** Dry chemical, CO₂, water spray or regular foam.

5.2 **Special hazards arising from the substance or mixture**

Hazardous combustion products

None

General Hazard

No known physical hazard, non-combustible.

Properties contributing to

Not flammable

Flammability

Flashpoint

Not applicable

Flammable limits in air

Not applicable

Auto ignition temperature

Not applicable

Sensitivity to static discharge

Not applicable

Sensitivity to static impact

Not applicable

5.3 Advice for fire-fighters

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.

COMMENTS:

(See Section 10, Stability and Reactivity)

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Before cleanup measures begin, review the entire SDS with particular attention to Section 2, Hazards Identification; and Section 8, Exposure Controls/Personal Protection.

6.2 Environmental precautions

Do not wash into drains. Dispose of at qualified waste disposal facility.

6.3 Methods and material for containment and cleaning up

Sweep up and place in suitable container. Dispose of waste according to local and Federal laws and regulations.

6.4 Reference to other sections

Before cleanup measures begin, review the entire SDS with particular attention to Section 2, Hazards Identification; and Section 8, Exposure Controls/Personal Protection.

6.5 Additional information

Not specified.

7. Handling and Storage

7.1 Precautions for safe handling

Avoid contact with eyes, skin or clothing. Use with adequate ventilation. Wear safety glasses or goggles and rubber gloves. Wash thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Keep container closed.

7.3 Specific end use(s)

Not available. Chemical safety assessment has not been completed for this product.

8. Exposure Controls / Personal Protection

8.1 Control parameters

EXPOSURE LIMITS

<u>Chemical Name</u>	<u>EU</u>		<u>EH40 (UK WEL)</u>		<u>USA (ACGIH)</u>		<u>USA (OSHA)</u>	
	<u>TWA</u>	<u>STEL</u>	<u>TWA</u>	<u>STEL</u>	<u>TWA</u>	<u>STEL/Ceiling</u>	<u>PEL</u>	<u>STEL/Ceiling</u>
Lithium orthophosphate	none*		none*		none*		none*	

* No occupational exposure limit value

8.2 Exposure controls

Engineering controls:

Use local exhaust ventilation to keep airborne concentrations below exposure limits.

Personal protective equipment

Eyes and Face:

Safety glasses or goggles

Respiratory:

When engineering controls are not adequate, wear a respirator approved for protection against inorganic dusts.

US: NIOSH or MSHA approved

Europe: CEN Class P type

Protective Clothing:

Gloves: Nitrile/Neoprene/PVC/Natural Rubber (permeation breakthrough not detected during 6 hr test)

These glove recommendations should not be used as the absolute basis for glove selection. Actual in-use conditions may vary glove performance from the controlled conditions of laboratory tests. Factors such as concentration and temperature, glove thickness and glove reuse, may affect performance. Other glove requirements, such as length, dexterity, cut, abrasion, puncture and snag resistance, or glove grip need to be considered in making your final selection.

Other: Not specified.

Work Hygienic

Quick-drench eyewash and safety shower.

Practices:

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

<u>Appearance:</u>	White powder
<u>Odor:</u>	Odorless
<u>Odor threshold:</u>	Not applicable
<u>pH:</u>	Not available
<u>Melting point:</u>	1205°C (2201°F)
<u>Boiling point:</u>	Not applicable
<u>Flash point:</u>	Not applicable
<u>Evaporation rate(butyl acetate = 1):</u>	Not applicable
<u>Flammability:</u>	Not flammable
<u>Flammable limits:</u>	Not applicable
<u>Vapor pressure:</u>	Not applicable
<u>Vapor density (air = 1):</u>	Not applicable
<u>Specific gravity:</u>	2.5 g/cc
<u>Solubility in water:</u>	% by wt. @ 20°C (68°F): 0.03
<u>Partition coefficient n-octanol/ water:</u>	Not applicable
<u>Autoignition temperature:</u>	Not applicable
<u>Decomposition temperature:</u>	Not available
<u>Viscosity:</u>	Not applicable
<u>Explosive properties:</u>	Not explosive
<u>Oxidizing properties:</u>	Not oxidizing

9.2 Other information

<u>Self-reactive properties</u>	Does not meet classification criteria.
<u>Pyrophoric properties</u>	Does not meet classification criteria.
<u>Self-heating properties</u>	Does not meet classification criteria.
<u>Water reactive properties</u>	Does not meet classification criteria.
<u>Corrosive to metals</u>	Does not meet classification criteria.
<u>Molecular weight:</u>	115.79

10. Stability and Reactivity

10.1 <u>Reactivity</u>	Generally stable and non reactive
10.2 <u>Chemical stability</u>	Stable
10.3 <u>Possibility of hazardous reaction</u>	Hazardous polymerization will not occur.
10.4 <u>Conditions to avoid</u>	None
10.5 <u>Incompatible materials</u>	None
10.6 <u>Hazardous decomposition products</u>	None

11. Toxicological Information

11.1 Toxicokinetics, metabolism and distribution

Non-human toxicological data	Not available
Method:	
Dosis:	
Routes of administration:	
Results:	
Absorption:	
Distribution:	
Metabolism:	
Excretion:	

11.2 Information on toxicological effects

11.2.1 Acute Toxicity: Acute Toxicity Category 4

<u>Substance/mixture</u>	<u>Oral:</u>	<u>Dermal:</u>	<u>Inhalation:</u>
Lithium orthophosphate, tertiary	Read across data indicates acute oral category 4 classification	Based on the available data, the classification criteria are not met.	Based on the available data, the classification criteria are not met.

11.2.2 Skin Corrosion/Irritation: No classification

Substance/mixture

Lithium orthophosphate, tertiary

Data

Based on the available data, the classification criteria are not met.

11.2.3 Serious Eye Damage/Irritation: No classification

Substance/mixture

Lithium orthophosphate, tertiary

Data

Based on the available data, the classification criteria are not met.

11.2.4 Respiratory or Skin Sensitization: No classification

Substance/mixture

Lithium orthophosphate, tertiary

Data

Based on the available data, the classification criteria are not met.

11.2.5 Carcinogenicity, Mutagenicity, Reproductive Toxicity: No classification

Substance/mixture

Lithium orthophosphate, tertiary

Germ Cell Mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive Toxicity

Based on available data, the classification criteria are not met.

Carcinogenicity Listings

EH40: Not listed.

IARC: Not listed.

NTP: Not listed.

OSHA: Not considered a carcinogen under OSHA.

ACGIH: Not listed

11.2.6 Specific Target Organ Toxicity (STOT) --Single Exposure: No classification

Substance/mixture

Lithium orthophosphate, tertiary

Based on the available data, the classification criteria are not met.

11.2.7 Specific Target Organ Toxicity (STOT) -- Repeated Exposure: No classification

Substance/mixture

Lithium orthophosphate, tertiary

Based on the available data, the classification criteria are not met.

11.2.8 Aspiration Hazard: No classification

Substance/mixture

Lithium orthophosphate, tertiary

Based on the available data, the classification criteria are not met.

12. Ecological Information

12.1 Toxicity: No classification.

Lithium orthophosphate, tertiary

Based on the available data, the classification criteria are not met.

12.2 Persistence and degradability

No data available for the product.

12.3 Bioaccumulative potential

No data available for the product.

12.4 Mobility in soil

No data available for the product.

12.5 Results of PBT and vPvB assessment

No data available for the product.

12.6 Other adverse effects

None

13. Disposal Considerations

13.1 Waste treatment methods

Use a qualified industrial waste disposal facility. Dispose of waste according to local and Federal laws and regulations.

14. Transport Information

14.1 UN Number

None

14.2	<u>UN proper shipping name (IMDG, ICAO, ADR, DOT)</u>	None
14.3	<u>Transport hazard class(es) (IMDG, ICAO, ADR, DOT)</u>	Based on available data, the classification criteria are not met.
14.4	<u>Packing group (IMDG, ICAO, ADR, DOT)</u>	None
14.5	<u>Environmental hazards</u>	Based on available data, the classification criteria are not met.
14.6	<u>Special precautions for user</u>	None
14.7	<u>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</u>	None

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EUROPEAN UNION:

German Wassergefährdungsklasse (water hazard class)

Lithium orthophosphate 1

UNITED STATES:

Section 311 Hazard Category (40 CFR 370):

Immediate (acute) health hazard.

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

Not listed

Substances (40 CFR 355):

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.

NFPA Rating:

Health: 1 Flammability: 0 Reactivity: 0 Special: none

CANADA:

WHMIS:

Product Identification No.: none

Hazard Classification: none

Ingredient Disclosure List: Not listed.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

INTERNATIONAL INVENTORY STATUS:

Inventory/Country

Product Status

EINECS (EU)

Listed

TSCA (US)

Listed

ECL (Korea)

Listed

DSL (Canada)

Lithium orthophosphate is listed on the NDSL

15.2 Chemical Safety Assessment

The Chemical Safety Assessment has not been completed for this mixture.

16. Other Information

European Union:

R Phrases:

Harmful if swallowed.

R22

REVISION SUMMARY: Revision # 0. All sections revised. New format. Regular review completed.

This SDS has been prepared to meet European Regulation (EC) No 1907/2006 [and No 1272/2008], U. S. OSHA Hazard Communication Standard, and Canada's Workplace Hazardous Materials Information System (WHMIS) requirements.

type 1b

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