SAFETY DATA SHEET LITHIUM ACETATE, DIHYDRATE

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

1.1 Product Identifier: Lithium acetate, dihydrate
1.1.1 Substances Not applicable
1.1.2 Mixture name: Lithium acetate, dihydrate
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
FMC Lithium
Seven LakePointe Plaza
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.fmclithium.com

Europe
FMC Chemicals
Commercial Road
Bromborough, Merseyside
CH62 3NL, England
Phone: +44.151.334.8085
Fax: +44.151.482.7361

Asia Pacific
FMC Asia Innovation Center
No 3 Building No. 4560
Jinke Road
Shanghai, China 201203
T: +86.21.2067.5888

1.4 Emergency Telephone Number:

North America
CHEMTREC: +1.800.424.9300
+1.703.527.3887
Plant: +1.704.629.5361
Medical: +1.303.595.9048

Europe
24 hr Specialist advice number:
CHEMTREC: +1.703.527.3887
Office (0900-1700)**:** +44.151.334.8085

Asia Pacific
Phone: +86.21.2067.5888

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.

3. Composition / Information on Ingredients

3.1 Substances Not applicable. Lithium acetate dihydrate is considered to be a mixture of

anhydrous in water

3.2 Mixtures

3.2.1 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 acetate, anhydrous	546-89-4 (anhydrous form)	208-914-3 (anhydrous form)	not avail.	not available	65	Acute Tox. 4	H302
Water	7732-18-5	None	None	None	35	None	

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

Chemical Name	CAS #	EC No	Wt.%	Symbols	R-phrases
Lithium acetate, anhydrous	546-89-4 (anhydrous form)	208-914-3 (anhydrous form)	65	Xn	R22
Water	7732-18-5	None	35	None	None

(see Section 16 for R-phrase 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, CO_2, water spray or regular foam.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products May produce acetone under fire conditions.

General Hazard May be combustible.

Properties contributing to Flammability Lithium acetate undergoes pyrolysis producing acetone at greater than 350ºC.

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 away from strong acids. 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

Lithium acetate

DNEL

Long-term exposure, systemic, inhalation	Not available
Long-term exposure, systemic, dermal	Not available

PNEC

PNEC aqua (freshwater)	Not available
PNEC STP	Not available

EXPOSURE LIMITS

Chemical Name	EU		EH40 (UK WEL)		USA (ACGIH)		USA (OSHA)	
	TWA	STEL	TWA	STEL	TWA	STEL/Ceiling	PEL	STEL/Ceiling
Lithium acetate, dihydrate	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 Practices: Quick-drench eyewash and safety shower.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance:	Solid, small white crystals
Odor:	Odorless
Odor threshold:	Not applicable
pH:	(1% Slurry) @ 25ºC: 8-9
Melting point:	58ºC (137ºF)
Boiling point:	Not applicable
Flash point:	Not applicable
Evaporation rate(butyl acetate = 1):	Not applicable
Flammability:	Not flammable
Flammable limits:	Not applicable
Vapor pressure:	Not applicable
Vapor density (air = 1):	Not applicable
Specific gravity:	1.3 g/cc at 25°C (77°F)
Solubility in water:	29 % by wt. @ 20°C (68°F)
Partition coefficient n-octanol/ water:	Not applicable
Autoignition temperature:	Not applicable
Decomposition temperature:	Not available
Viscosity:	Not applicable
Explosive properties:	Not explosive
Oxidizing properties:	Not an oxidizer

9.2 Other information

Self-reactive properties	Does not meet classification criteria.
Pyrophoric properties	Does not meet classification criteria.
Self-heating properties	Does not meet classification criteria.
Water reactive properties	Does not meet classification criteria.
Corrosive to metals	Does not meet classification criteria.
Molecular weight:	102.02 (lithium acetate, dihydrate) 65.99 (lithium acetate, anhydrous)

10. Stability and Reactivity

10.1	**Reactivity**	Generally stable and non reactive
10.2	**Chemical stability**	Stable
10.3	**Possibility of hazardous reaction**	Hazardous polymerization will not occur.
10.4	**Conditions to avoid**	None
10.5	**Incompatible materials**	None
10.6	**Hazardous decomposition products**	None. May produce acetone under fire conditions.

11. Toxicological Information

11.1 Information on toxicological effects

(a) acute toxicity	Lithium acetate is classed as acute oral category 4 based on read across data. Lithium acetate, dihydrate acute dermal toxicity: LD_{50} >2000 mg/kg (rat)
(b) skin corrosion/irritation	Classified as not irritating to skin on the basis of lithium acetate.
(c) serious eye damage/irritation	Classified as not irritating to eyes on the basis of lithium acetate.
(d) respiratory/skin sensitisation	Classed as not sensitizing to skin on the basis of lithium acetate
(e) germ cell mutagenicity	Classified as not mutagenic based on lithium acetate.
(f) carcinogenicity	Classified as not carcinogenic based on lithium acetate.
(g) reproductive toxicity	Classified as not a reproductive toxin based on lithium acetate.

(h) STOT-single exposure	Classified as not causing organ damage based on lithium acetate.
(i) STOT-repeated exposure	Classified as not causing organ damage on repeat exposure based on lithium acetate.
(j) aspiration hazard	Lithium acetate, a solid, does not present an aspiration hazard.

Acute Effects From Overexposure:
No data available for the formulation.
No envisaged effects other than acute effects from local irritation

Chronic Effects From Overexposure:
No data available for product.

Carcinogenicity Listings

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

12. Ecological Information

12.1 Toxicity: No classification.
Lithium acetate Based on the available data, the classification criteria are not met.

12.2 Persistence and degradability
No applicable for metal salts.

12.3 Bioaccumulative potential
Inorganic. Lithium salts are not bioaccumulative.

12.4 Mobility in soil
No data available for the product.

12.5 Results of PBT and vPvB assessment
No applicable for metal salts.

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	**UN proper shipping name (IMDG, ICAO, ADR, DOT)**	None
14.3	**Transport hazard class(es) (IMDG, ICAO, ADR, DOT)**	Based on available data, the classification criteria are not met.
14.4	**Packing group (IMDG, ICAO, ADR, DOT)**	None
14.5	**Environmental hazards**	Based on available data, the classification criteria are not met.
14.6	**Special precautions for user**	None
14.7	**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	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 acetate	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 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.
NFPA Rating:	**Health:** 1 **Flammability:** 2 **Reactivity:** 0 **Special:** none

INTERNATIONAL INVENTORY STATUS:

Inventory/Country	**Product Status**
EINECS (EU)	Lithium acetate is listed; the hydrated form is not required to be listed.
TSCA (US)	Lithium acetate is listed; the hydrated form is not required to be listed.
ECL (Korea)	Lithium acetate is listed; the hydrated form is not required to be listed.
DSL (Canada)	Lithium acetate is listed; the hydrated form is not required to be listed.

15.2 Chemical Safety Assessment

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

16. Other Information

European Union:

R Phrases:
R22 Harmful if swallowed.

List of Abbreviations used in this SDS:

PBT	Persistent, Bioaccumulative and Toxic
vPvB	very Persistent, very Bioaccumulative
PEC	Predicted environmental concentration
PNEC	Predicted no effect concentration
DNEL	Derived no effect level

Specific uses identified for Exposure Scenarios
Not specified

REVISION SUMMARY: Revision # 1. Format revised. Sections 3, 11, 12 and 15 revised.

This SDS has been prepared to meet European Regulation (EC) No 1907/2006 [and No 1272/2008], and U. S. OSHA Hazard Communication Standard requirements.
type 1b