

# Lithium ethoxide 1M solution in ethanol

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830  
Date of issue: 5/2/2019 Version: 1.0

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form	: Mixture
Product name	: Lithium ethoxide 1M solution in ethanol
CAS-No.	: 2388-07-0
Product code	: 90028447
Formula	: C <sub>2</sub> H <sub>5</sub> LiO
Product group	: Blend

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

##### 1.2.1. Relevant identified uses

Main use category	: Laboratory use, Industrial use, Professional use
Industrial/Professional use spec	: For professional use only

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

##### Supplier

Safell Organics  
Molekula Ltd  
Lingfield Way  
Darlington - England  
T +44 (0) 1949 823777 / +44 (0) 7590 545705  
[info@molekula.com](mailto:info@molekula.com) / [kbowen@molekula.com](mailto:kbowen@molekula.com) - [www.molekula.com](http://www.molekula.com)

#### 1.4. Emergency telephone number

Emergency number : +44 (0) 7590 545705

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids, Category 2	H225
Self-Heating Substances and Mixtures, Category 1	H251
Skin corrosion/irritation, Category 1	H314
Full text of H statements : see section 16	

##### Adverse physicochemical, human health and environmental effects

No additional information available

#### 2.2. Label elements

##### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS02

GHS05

Signal word (CLP)	: Danger
Hazardous ingredients	: Lithium ethoxide
Hazard statements (CLP)	: H225 - Highly flammable liquid and vapour. H251 - Self-heating: may catch fire. H314 - Causes severe skin burns and eye damage.
Precautionary statements (CLP)	: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P232 - Protect from moisture. P235 - Keep cool. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
EUH-statements	: EUH014 - Reacts violently with water.

#### 2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

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### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
ETHANOL	(CAS-No.) 64-17-5 (EC-No.) 200-578-6 (EC Index-No.) 603-002-00-5	90 - 95	Flam. Liq. 2, H225
Lithium ethoxide	(CAS-No.) 2388-07-0 (EC-No.) 628-773-5	5 - 10	Self-heat. 1, H251 Skin Corr. 1, H314

Full text of H-statements: see section 16

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

First-aid measures general	: If possible show this sheet, if not available show packaging or label. Never give anything by mouth to an unconscious person. Do not leave affected person unattended.
First-aid measures after inhalation	: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Give oxygen or artificial respiration if necessary. If breathing difficulties persist : Get medical advice/attention.
First-aid measures after skin contact	: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water. Do not remove clothing if it sticks to the skin. If irritation persists, consult a doctor.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth out with water. Do not induce vomiting. Get medical advice/attention.

#### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	: Material is destructive to tissue of the mucuous membranes and upper respiratory tract. Cough, shortness of breath, headache, nausea. Burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.
Symptoms/effects after skin contact	: Causes severe burns. May cause moderate irritation, including burning sensation, tearing, redness or swelling.
Symptoms/effects after eye contact	: Causes serious eye damage. May cause severe chemical burns to skin and cornea.
Symptoms/effects after ingestion	: Swallowing this material may result in health hazard. Symptoms of ingestion include drowsiness, weakness, headache, dizziness, nausea, vomiting. burns of the upper digestive and respiratory tracts, abdominal pain, bloody vomiting, severe damage to the delicate tissue and danger of perforation.

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

Get immediate medical advice/attention.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media	: Dry powder. Sand.
Unsuitable extinguishing media	: Do NOT use water jet.

#### 5.2. Special hazards arising from the substance or mixture

Fire hazard	: Flammable liquid and vapour. Self-heating: may catch fire.
Explosion hazard	: May form flammable/explosive vapour-air mixture.
Hazardous decomposition products in case of fire	: Carbon oxides (CO, CO2).

#### 5.3. Advice for firefighters

Precautionary measures fire	: Keep container tightly closed and away from heat, sparks and flame. Keep away from combustible materials.
Firefighting instructions	: Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	: Wear recommended personal protective equipment. Use self-contained breathing apparatus and chemically protective clothing.
Other information	: Warn all persons of toxic hazard.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Do not handle until all safety precautions have been read and understood. Ventilate the area thoroughly, especially low lying areas (basements, workpits etc). Keep away from combustible materials.
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### 6.1.1. For non-emergency personnel

- Protective equipment : Wear recommended personal protective equipment.
- Emergency procedures : Evacuate unnecessary personnel. Mark out the contaminated area with signs and prevent access to unauthorized personnel. Do not touch or walk on the spilled product. Avoid contact with skin, eyes and clothing.
- Measures in case of dust release : Shelter from vapours by keeping upwind. Ventilate the area thoroughly, especially low lying areas (basements, workpits etc). Special attention should be given to low areas/pits where flammable vapours can accumulate.

### 6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. Use self-contained breathing apparatus and chemically protective clothing.
- Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

- For containment : Collect spillage. Contain the spilled material by bunding.
- Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Try to stop release if without risk.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Additional hazards when processed : Handle empty containers with care because residual vapours are flammable. Self-heating: may catch fire.
- Precautions for safe handling : Avoid formation of vapours. Avoid contact with skin, eyes and clothing. Do not handle until all safety precautions have been read and understood. Ensure that there is a suitable ventilation system. Do not handle in a confined space. Handle under inert gas.
- Hygiene measures : Take off immediately all contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product.

### 7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Ensure adequate ventilation, especially in confined areas. Proper grounding procedures to avoid static electricity should be followed.
- Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat sources, Direct sunlight. Keep container closed when not in use. Never allow product to get in contact with water during storage. Store contents under inert gas.
- Incompatible products : Strong oxidisers. Alkali metals. Ammonia. Peroxides.
- Incompatible materials : Sources of ignition. Direct sunlight. Heat sources. open flames. sparks. Moisture. Water, humidity.
- Heat and ignition sources : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Storage area : Store between 10°C and 20°C. Keep away from combustible materials. Store in dry protected location to prevent any moisture contact.
- Special rules on packaging : Never allow product to get in contact with water during storage.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

ETHANOL (64-17-5)		
United Kingdom	Local name	Ethanol
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	1920 mg/m <sup>3</sup>
United Kingdom	WEL TWA (ppm)	1000 ppm
United Kingdom	Regulatory reference	EH40. HSE

### 8.2. Exposure controls

#### Appropriate engineering controls:

Handle in accordance with good industrial hygiene and safety procedures. Floors should be impervious, resistant to liquids and easy to clean.

#### Personal protective equipment:

Avoid all unnecessary exposure.

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<b>Hand protection:</b>					
The protective gloves to be used must comply with the specifications of the regulation 2016/425 and the resultant standard EN 374					
<b>Type</b>	<b>Material</b>	<b>Permeation</b>	<b>Thickness (mm)</b>	<b>Penetration</b>	<b>Standard</b>
Disposable gloves	Fluoroelastomer (FKM)	6 (> 480 minutes)	0.7		EN 374
<b>Eye protection:</b>					
Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Use eye protection according to EN 166, designed to protect against liquid splashes.					
<b>Type</b>	<b>Use</b>	<b>Characteristics</b>		<b>Standard</b>	
Safety goggles, Face shield	Droplet, vapours	tightly fitting safety goggles, With side shields		EN 166	
<b>Skin and body protection:</b>					
Emergency safety showers should be available in the immediate vicinity of any potential exposure. Keep suitable chemically resistant protective clothing readily available for emergency use					
<b>Type</b>			<b>Standard</b>		
Total impervious protective suits, gloves, and boots must be worn to prevent any contact with the product, Flame retardant antistatic protective clothing			EN 14605		
<b>Respiratory protection:</b>					
Keep self contained breathing apparatus readily available for emergency use. Where exposure through inhalation may occur from use, respiratory protection equipment is recommended					
<b>Device</b>	<b>Filter type</b>	<b>Condition</b>		<b>Standard</b>	
Air-Purifying Respirator (APR), reusable	ABEK	Moist condition, Mist formation, Protection for Liquid particles, Vapour protection		EN 14387	

### Other information:

Do not eat, drink or smoke during use.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear.
Molecular mass	: 52 g/mol
Colour	: Colourless. Orange.
Odour	: No data available.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 9 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Flammable
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 0.82 g/cm³
Solubility	: No data available
Log Pow	: -0.32
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available

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Oxidising properties : No data available

Explosive limits : No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Flammable liquid and vapour. Reacts violently with water.

### 10.2. Chemical stability

Flammable liquid and vapour. May form flammable/explosive vapour-air mixture. Self-heating: may catch fire.

### 10.3. Possibility of hazardous reactions

Reacts violently with water.

### 10.4. Conditions to avoid

Protect from sunlight. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Moisture. Water, humidity.

### 10.5. Incompatible materials

Strong oxidizers. Alkali metals. Ammonia. Peroxides.

### 10.6. Hazardous decomposition products

No hazardous decomposition products known at room temperature. Thermal decomposition generates : Carbon oxides (CO, CO<sub>2</sub>).

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

#### ETHANOL (64-17-5)

LD50 oral rat	10470 mg/kg
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LD50 dermal rabbit	15800 mg/kg
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LC50 inhalation rat (Vapours - mg/l/4h)	30000 mg/l/4h
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Skin corrosion/irritation : Causes severe skin burns and eye damage.

Additional information : Based on available data, the classification criteria are not met

Serious eye damage/irritation : Serious eye damage, category 1, implicit

Additional information : Based on available data, the classification criteria are not met

Respiratory or skin sensitisation : Not classified

Additional information : Based on available data, the classification criteria are not met

Germ cell mutagenicity : Not classified

Additional information : Based on available data, the classification criteria are not met

Carcinogenicity : Not classified

Additional information : Based on available data, the classification criteria are not met

Reproductive toxicity : Not classified

Additional information : Based on available data, the classification criteria are not met

STOT-single exposure : Not classified

Additional information : Based on available data, the classification criteria are not met

STOT-repeated exposure : Not classified

Additional information : Based on available data, the classification criteria are not met

Aspiration hazard : Not classified

Additional information : Based on available data, the classification criteria are not met

Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

## SECTION 12: Ecological information

### 12.1. Toxicity

Acute aquatic toxicity : Not classified

Chronic aquatic toxicity : Not classified

#### ETHANOL (64-17-5)

LC50 fish 1	14200 mg/l Fathead minnow
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LC50 other aquatic organisms 1	5012 mg/l 48h
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EC50 72h algae (1)	275 mg/l Chlorella vulgaris (Fresh water algae)
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NOEC (chronic)	9.6 mg/l 9 day Daphnia magna (Water flea)
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### 12.2. Persistence and degradability

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Persistence and degradability	No data available.
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### ETHANOL (64-17-5)

Persistence and degradability	Biodegradable.
Biochemical oxygen demand (BOD)	1.067 - 1.236 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	1.99 g O <sub>2</sub> /g substance

### 12.3. Bioaccumulative potential

#### Lithium ethoxide 1M solution in ethanol (2388-07-0)

Log Pow	-0.32
Bioaccumulative potential	No data available.

### ETHANOL (64-17-5)

Log Pow	-0.35 @20.C
Bioaccumulative potential	No bioaccumulation data available.

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

#### Lithium ethoxide 1M solution in ethanol (2388-07-0)

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

### 12.6. Other adverse effects

Additional information : Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Additional information	: Handle empty containers with care because residual vapours are flammable.
Ecology - waste materials	: Avoid release to the environment.

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number</b>				
3274	3274	3274	3274	3274
<b>14.2. UN proper shipping name</b>				
ALCOHOLATES SOLUTION, N.O.S.	ALCOHOLATES SOLUTION, N.O.S.	Alcoholates solution, n.o.s.	ALCOHOLATES SOLUTION, N.O.S.	ALCOHOLATES SOLUTION
<b>Transport document description</b>				
UN 3274 ALCOHOLATES SOLUTION, N.O.S. (Lithium ethoxide 1M solution in ethanol), 3 (8), II, (D/E)	UN 3274 ALCOHOLATES SOLUTION, N.O.S. (Lithium ethoxide 1M solution in ethanol), 3 (8), II	UN 3274 Alcoholates solution, n.o.s. (Lithium ethoxide 1M solution in ethanol), 3 (8), II	UN 3274 ALCOHOLATES SOLUTION, N.O.S. (Lithium ethoxide 1M solution in ethanol), 3 (8), II	UN 3274 ALCOHOLATES SOLUTION (Lithium ethoxide 1M solution in ethanol), 3 (8), II
<b>14.3. Transport hazard class(es)</b>				
3 (8)	3 (8)	3 (8)	3 (8)	3 (8)

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14.4. Packing group				
II	II	II	II	II
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				
14.6. Special precautions for user				

### Overland transport

Classification code (ADR)	: FC
Special provisions (ADR)	: 274
Limited quantities (ADR)	: 1I
Excepted quantities (ADR)	: E2
Packing instructions (ADR)	: P001, IBC02
Mixed packing provisions (ADR)	: MP19
Tank code (ADR)	: L4BH
Vehicle for tank carriage	: FL
Transport category (ADR)	: 2
Special provisions for carriage - Operation (ADR)	: S2, S20
Hazard identification number (Kemler No.)	: 338
Orange plates	:



Tunnel restriction code (ADR)	: D/E
EAC code	: •3WE
APP code	: A(fl)

### Transport by sea

Special provisions (IMDG)	: 274
Packing instructions (IMDG)	: P001
IBC packing instructions (IMDG)	: IBC02
EmS-No. (Fire)	: F-E
EmS-No. (Spillage)	: S-C
Stowage category (IMDG)	: B
Properties and observations (IMDG)	: Colourless solution. Reacts violently with water. Causes burns to skin, eyes and mucous membranes.

### Air transport

PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Y340
PCA limited quantity max net quantity (IATA)	: 0.5L
PCA packing instructions (IATA)	: 352
PCA max net quantity (IATA)	: 1L
CAO packing instructions (IATA)	: 363
CAO max net quantity (IATA)	: 5L
ERG code (IATA)	: 3C

### Inland waterway transport

Classification code (ADN)	: FC
Special provisions (ADN)	: 274
Limited quantities (ADN)	: 1 L
Excepted quantities (ADN)	: E2
Equipment required (ADN)	: PP, EP, EX, A
Ventilation (ADN)	: VE01
Number of blue cones/lights (ADN)	: 1

### Rail transport

Classification code (RID)	: FC
Special provisions (RID)	: 274
Limited quantities (RID)	: 1L

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Excepted quantities (RID)	: E2
Packing instructions (RID)	: P001, IBC02
Mixed packing provisions (RID)	: MP19
Tank codes for RID tanks (RID)	: L4BH
Transport category (RID)	: 2
Colis express (express parcels) (RID)	: CE7
Hazard identification number (RID)	: 338

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions  
Contains no substance on the REACH candidate list  
Contains no REACH Annex XIV substances  
Directive 2012/18/EU (SEVESO III)

#### 15.1.2. National regulations

##### Germany

Reference to AwSV : Water hazard class (WGK) 3, Highly hazardous to water (Classification according to AwSV, Annex 1)  
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

##### Netherlands

SZW-lijst van kankerverwekkende stoffen : ETHANOL is listed  
SZW-lijst van mutagene stoffen : None of the components are listed  
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : ETHANOL is listed  
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : ETHANOL is listed  
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : ETHANOL is listed

##### Denmark

Class for fire hazard : Class I-1  
Store unit : 1 liter  
Classification remarks : F <Flam. Liq. 2; Self-heat. 1>; Emergency management guidelines for the storage of flammable liquids must be followed  
Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out for the substance or the mixture by the supplier

## SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.  
Other information : None.

Full text of H- and EUH-statements:	
Flam. Liq. 2	Flammable liquids, Category 2
Self-heat. 1	Self-Heating Substances and Mixtures, Category 1
Skin Corr. 1	Skin corrosion/irritation, Category 1
H225	Highly flammable liquid and vapour.
H251	Self-heating: may catch fire.
H314	Causes severe skin burns and eye damage.
EUH014	Reacts violently with water.



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*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*