

 LG Chem	SAFETY DATA SHEET		Version: R0001.0001
	According to OSHA Hazcom Standard 29 CFR 1910.1200		Date of issue: 2020-12-30
	Lysophosphatidylethanolamine 1% SL		Revision date: Not applicable
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1. IDENTIFICATION

A. Product name

- Lysophosphatidylethanolamine 1% SL(Sunaider)

B. Recommended use and restriction on use

- General use : Not available
 - Restriction on use : Not available

C. Manufacturer / Supplier / Distributor information

o Manufacturer information

- Company name : LG Chem, Ltd.
 - Address : 19, Ijin-ro, Onsan-eup, Ulju-gun, Ulsan, Republic of Korea
 - Dept. : Process technology team
 - Telephone number : 82-52231-5208
 - Emergency telephone number : 82-52231-5208
 - Fax number :
 - E-mail address : ryookh@lgchem.com

o Supplier/Distributor information

- Company name : LG Chem, Ltd.
 - Address : 19, Ijin-ro, Onsan-eup, Ulju-gun, Ulsan, Republic of Korea
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2. HAZARD IDENTIFICATION

A. GHS Classification

- Skin corrosion/irritation : Category3
 - Serious eye damage/irritation : Category2A
 - Chronic aquatic toxicity : Category2

B. GHS label elements

o Hazard symbols



o Signal words

- Warning

o Hazard statements

- H316 Cause mild skin irritation.
 - H319 Causes serious eye irritation
 - H411 Toxic to aquatic life with long lasting effects

o Precautionary statements

1) Prevention

- P264 Wash hands thoroughly after handling.
 - P273 Avoid release to the environment.

- P280 Wear protective gloves/protective clothing/eye protection/face protection.

2) Response

- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

- P332+P313 If skin irritation occurs: Get medical advice/attention.

- P337+P313 If eye irritation persists: Get medical advice/attention.

- P391 Collect spillage.

3) Storage

- P403+P235 Store in a well-ventilated place. Keep cool.

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

C. Other hazards which do not result in classification : (NFPA Classification)

o NFPA grade (0 ~ 4 level)

- Health : 2, Flammability : 1, Reactivity : 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
Lysophosphatidylethanolamines, egg yolk	-	95046-40-5	1
Secret	Secret	-	90 ~ 100

4. FIRST AID MEASURES

A. Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- Remove contact lenses if worn.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.

C. Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

5. FIREFIGHTING MEASURES

A. Suitable (Unsuitable) extinguishing media

- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray
- Avoid use of water jet for extinguishing

B. Specific hazards arising from the chemical

- Not available

C. Special protective actions for firefighters

- Move containers from fire area, if you can do without the risk.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

6. ACCIDENTAL RELEASE MEASURES

A. Personal precautions, protective equipment and emergency procedures

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handle the damaged containers or spilled material after wearing appropriate protective equipment
- Do not direct water at spill or source of leak.
- Avoid skin contact and inhalation.

B. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

C. Methods and materials for containment and cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notify the central and local government if the emission reach the standard threshold.
- Disposal of waste shall be in compliance with the Wastes Control Act
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Prevent the influx to waterways, sewers, basements or confined spaces.

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Avoid direct physical contact.
- Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

B. Conditions for safe storage, including any incompatibilities

- Check regularly for leaks.
- Do not apply any physical shock to container.
- Keep sealed when not in use.
- No open fire.
- Prevent static electricity and keep away from combustible materials or heat sources.
- Collect them in sealed containers.
- Store away from water and sewer.
- keep out of direct light and store in a cool, dry place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

- o **ACGIH TLV**
 - [Secret] : TWA, 200 ppm (491 mg/m³), STEL, 400 ppm (984 mg/m³)
- o **OSHA PEL**
 - [Secret]:400ppm 980mg/m³

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

C. Individual protection measures, such as personal protective equipment○ **Respiratory protection**

- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.

○ **Eye protection**

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

○ **Hand protection**

- Wear appropriate glove.

○ **Skin protection**

- Wear appropriate clothing.

○ **Others**

- Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	
- Appearance	Liquid
- Color	Not available
B. Odor	Not available
C. Odor threshold	Not available
D. pH	4.0 - 6.0
E. Melting point/Freezing point	Not available
F. Initial Boiling Point/Boiling Ranges	Not available
G. Flash point	$\geq 100\text{ }^{\circ}\text{C}$
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	Not available
K. Vapour pressure	Not available
L. Solubility	Not available
M. Vapour density	Not available
N. Specific gravity(Relative density)	0.96 - 1.06
O. Partition coefficient of n-octanol/water	Not available
P. Autoignition temperature	Not available
Q. Decomposition temperature	Not available
R. Viscosity	Not available
S. Molecular weight	Not available

10. STABILITY AND REACTIVITY**A. Chemical Stability**

- This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

D. Incompatible materials

- Not available

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

- **(Respiratory tracts)**
 - Not available
- **(Oral)**
 - Not available
- **(Eye/Skin)**
 - Cause mild skin irritation.
 - Causes serious eye irritation

B. Delayed and immediate effects and also chronic effects from short and long term exposure

- **Acute toxicity**
 - * **Oral**
 - Product (ATEmix) : >5000mg/kg
 - [Secret] : LD50 > 90000 mg/kg Rat (KOSHA)
 - [Secret] : LD50 22,000 mg/kg Rat (ECHA)
 - [Secret] : LD50 29100 mg/kg Rat (NLM: ChemIDPlus), LD50 >5000 mg/kg Rat (ECHA)
 - [Secret] : LD50 5840 mg/kg Rat (OECD TG 401, ECHA)
 - [Secret] : LD50 = 1900 mg/kg Rat (Thomson)
 - [Secret] : LD50 3131 ~ 3344 mg/kg Rat ((GLP:yes))
 - * **Dermal**
 - Product (ATEmix) : >5000mg/kg
 - [Secret] : LD50 20,800 mg/kg Rabbit (HSDB, IUCLID)
 - [Secret] : LD50>20000 mg/kg Rabbit (NLM: ChemIDPlus), LD50 >2000 mg/kg Rabbit (ECHA)
 - [Secret] : LD50 16400 mg/kg Rabbit (OECD TG402, ECHA)
 - [Secret] : LD50 = 10000 mg/kg rabbit (IUCLID)
 - [Secret] : LD50 1500 mg/kg rabbit
 - * **Inhalation**
 - Product (ATEmix) : >50.0mg/L
 - [Secret] : Steam LC50 > 5 mg/L Rat (NLM: ChemIDPlus)
 - [Secret] : LC50 >10000 ppm 6 hr Rat (OECE TG 403, GLP)
 - [Secret] : LC50 20 mg/ℓ 96 hr Rat (IUCLID)
 - [Secret] : Steam LC50 > 21 mg/ℓ 1 hr Rat ((conversion:10.5mg/l/4h))
- **Skin corrosion/irritation**
 - Cause mild skin irritation.
- **Serious eye damage/irritation**
 - Causes serious eye irritation
- **Respiratory sensitization**
 - Not available
- **Skin sensitization**
 - Not available
- **Carcinogenicity**
 - * **IARC**
 - [Secret] : Group 3
 - * **OSHA**
 - Not available
 - * **ACGIH**
 - [Secret] : A4

* **NTP**

- Not available

* **EU CLP**

- Not available

○ **Germ cell mutagenicity**

- Not available

○ **Reproductive toxicity**

- Not available

○ **STOT-single exposure**

- Not available

○ **STOT-repeated exposure**

- Not available

○ **Aspiration hazard**

- Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

○ **Fish**

- [Secret] : LC50 = 710 mg/ℓ 96 hr Oncorhynchus mykiss (ECOTOX)

- [Secret] : LC50 >1000 mg/ℓ 96 hr (IUCLID)

- [Secret] : LC50 9640 mg/ℓ 96 hr Pimephales promelas (OECD Guideline 203)

- [Secret] : LC50 28 mg/ℓ 96 hr Oncorhynchus mykiss (IUCLID)

- [Secret] : LC50 97.2 mg/ℓ 96 hr Pimephales promelas (European chemical Substances Information System)

○ **Crustaceans**

- [Secret] : EC50 = 1000 mg/ℓ 48 hr Daphnia magna (ECOTOX)

- [Secret] : EC50 >1000 mg/ℓ 48 hr Daphnia magna (IUCLID)

- [Secret] : ECHA LC50 5102 mg/ℓ 24 hr Daphnia magna (OECD TG 202)

- [Secret] : EC50 = 36 mg/ℓ 48 hr Daphnia magna (IUCLID)

- [Secret] : EC50 0.13 mg/ℓ 48 hr (OECD Screening Information Data Set)

○ **Algae**

- [Secret] : EC50 = 1000 mg/ℓ 72 hr Selenastrum capricornutum (NITE)

- [Secret] : EC50 >900 mg/ℓ 72 hr Scenedesmus subspicatus (IUCLID)

- [Secret] : EC50 = 2.2 mg/ℓ 96 hr

- [Secret] : LD50 7.7 mg/ℓ 48 hr (ECOTOX)

- [Secret] : ErC50 0.1 mg/ℓ 72 hr (ca. 0.1mg/l) (OECD Screening Information Data Set)

B. Persistence and degradability

○ **Persistence**

- [Secret] : log Kow = -1.38

- [Secret] : log Kow = -1.4 (IUCLID)

- [Secret] : log Kow = -0.41 (NLM)

- [Secret] : log Kow 6.1 (NITE)

- [Secret] : log Kow 1.95 (ESIS)

○ **Degradability**

- [Secret] : COD = 1290 BOD5/COD = 0.019 (IUCLID)

- [Secret] : (BOD5/COD ratio ≥ 0.5, biodegrades immediately, EU Method C.5)

C. Bioaccumulative potential

○ **Bioaccumulative potential**

- [Secret] : BCF < 1 (SIDS)

- [Secret] : BCF = 3.162 (Estimate)

- [Secret] : BCF 3.47 ~ 3.78 (IUCLID)

- [Secret] : BCF 3.162 (Estimate)

- [Secret] : BCF 21 (HSDB)

○ **Biodegradation**

- [Secret] : Biodegradability > 60 (%) 10 day (SIDS)

- [Secret] : Biodegradability = 68 (%) 4 week (89,90%) (CHRIP)

- [Secret] : (biodegrades immediately, EU Method C.5)
- [Secret] : 66.7 (%) 28 day (IUCLID)
- [Secret] : 28 (%) 5 day (NLM)

D. Mobility in soil

- [Secret] : log koc= 0.03
- [Secret] : Koc 0.2624 (Low potential for soil adsorption)
- [Secret] : Koc 1.637

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- Stabilization and minimization treatment by incineration or similar method can be applied, if more than two kinds of designated wastes are in mixture state and it is impractical to separate them
- Oil water separation technology shall be applied as pre-waste treatment if it is applicable
- It shall be treated by incineration

B. Special precautions for disposal

- Anyone with business license number who generates industrial wastes shall treat the waste by him/herself or by entrusting to the legal entities who treat the wastes, recycle the wastes of others or install and operate the waste treatment facilities according to the Wastes Control Act
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG)

- 3082

B. Proper shipping name

- ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.

C. Hazard Class

- 9

D. IMDG Packing group

- III

E. Marine pollutant

- Applicable
- Applicable

F. Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-A (General fire schedule)
- EmS SPILLAGE SCHEDULE : S-F (Water-soluble marine pollutants)

15. REGULATORY INFORMATION

A. National and/or international regulatory information

- o POPs Management Law
 - Not applicable
- o Information of EU Classification
 - * Classification
 - [Secret] : H302
 - [Secret] : H225,H319,H336

- [Secret] : H319
- **U.S. Federal regulations**
 - * **OSHA PROCESS SAFETY (29CFR1910.119)**
 - Not applicable
 - * **CERCLA Section 103 (40CFR302.4)**
 - Not applicable
 - * **EPCRA Section 302 (40CFR355.30)**
 - Not applicable
 - * **EPCRA Section 304 (40CFR355.40)**
 - Not applicable
 - * **EPCRA Section 313 (40CFR372.65)**
 - [Secret] : Applicable
- **Rotterdam Convention listed ingredients**
 - Not applicable
- **Stockholm Convention listed ingredients**
 - Not applicable
- **Montreal Protocol listed ingredients**
 - Not applicable

16. OTHER INFORMATION

A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.
- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

B. Issue date

- 2020-12-30

C. Revision number and Last date revised

- Not applicable

D. Other

- This SDS is prepared according to the Globally Harmonized System (GHS).