

## Product Safety Data Sheet (PSDS) according to OSHA-GHS (29 CFR 1910.1200 HCS 2012) (US)

# E Model Series (Pulsarlube E)

### 1. MANUFACTURER INFORMATION

1) Product Name : E Model Series (E60/EO60, E120/EO120, E240/EO240 etc.)

2) Recommended use of the chemical and restrictions on use

A. Product description : An electrochemical automatic single point lubricator

B. Restrictions on use : Not available except the intended use of the product

3) Supplier's details

KLT Co., Ltd.

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### 2. HAZARDS IDENTIFICATION

1) Hazard / Risk Classification

Inhalation

May be harmful if inhaled. May cause respiratory tract irritation.  
(Specific target organ toxicity - single exposure (Category 3))

Ingestion

Harmful if swallowed. (Acute toxicity, Oral (Category 4))

Skin

May be harmful if absorbed through skin. May cause skin irritation.  
(Skin irritation (Category 2) Eye irritation (Category 2))

2) Label elements

This product is defined as an "article" based on OSHA definition of an article (c).

Therefore, this product is exempt from requirement of the Hazard Communication Standard, 29 CFR1910.1200 (HCS 2012), hence a Safety-Data-Sheet is not required in accordance to HCS2012 (b)(6) and the sheets are supplied as a service. This Safety-Data-Sheet contains valuable information critical to the safe handling and proper use of the product.

3) Hazard/precautionary statements

○ Hazard/Risk Statement :

H302 Harmful if swallowed

H315 Causes skin irritation

H319 Causes serious eye irritation

○ Precautionary Statement

<Prevention>

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understand.

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

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### <Response>

P302+P352 IF ON SKIN : Immerse in cool water [or wrap in wet bandages].

P304+P340 IF INHALED : Remove person to fresh air and keep comfortable for breathing.

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

P308+P313 IF exposed or concerned : Get medical advice/attention

### <Storage>

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

### <Disposal>

P501 Dispose of contents/containers to ... in accordance with local/regional/national/international regulations (to be specified).

3) Other Hazard Risk which are not included in the classification criteria

Material / NFPA	Health	Flammability	Reactivity
1) Water	0	0	0
2) Ethylene Glycol	2	1	0
3) Potassium carbonate	3	0	0
4) Proprietary (S1)	1	0	0

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

(Based on the electrolyte)

Chemical name	Other name	CAS No	Content (%)
1) Water	DIHYDROGEN OXIDE	7732-18-5	95
2) Ethylene Glycol	1,2-Ethanediol 1,2-Dihydroxyethane	107-21-1	0.3
3) Potassium carbonate	Carbonic Acid Dipotassium Salt	584-08-7	3.0
4) Proprietary (S1)	Proprietary (S1)	Proprietary (S1)	Proprietary (S1)

Comment on component parts

The concentrations of the ingredients are valid for gas generation cell. They are not for the complete system. The structural design prevents release of the hazardous materials (or mixture) contained therein when the unit is used for its intended purpose. Substances of Very High Concern - SVHC : substances are not contained or are below 0.1%. For full text of H-statements : see SECTION 2

### 4. FIRST AID MEASURES

#### General advice

Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### In case of skin contact

Wash skin with soap and copious amounts of water. Consult a physician.

#### If inhaled

Remove person to fresh air. If signs/symptoms continue, get medical attention. Give oxygen or artificial respiration as needed.

**PSDS (Product Safety Data Sheet)****In case of eye contact**

Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, consult a physician.

**If swallowed**

DO NOT induce vomiting. If vomiting does occur, have victim lean forward to prevent aspiration. Rinse mouth with water. Seek medical attention. Never give anything by mouth to an unconscious individual.

**5. FIRE FIGHTING MEASURES****Extinguishing media****Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment  
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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

Carbon oxides, Potassium oxides, Hydrogen iodide,

**Advice for firefighters**

Wear self-contained breathing apparatus for fire-fighting if necessary.

**Further information**

None

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas.  
Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions**

Do not let product enter drains.

**Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal

**Reference to other sections**

For disposal see section 13.

**7. HANDLING AND STORAGE****Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist and avoid formation of dust and aerosols.

**Conditions for safe storage, including any incompatibilities**

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.  
Hygroscopic. air, light, and moisture sensitive. Store under inert gas.

**Specific end uses**

no data available

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

(Based on the electrolyte)

**Control parameters**

- ACGIH : none
- biological limit values : none

**Appropriate engineering controls**

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Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### Personal protective equipment

#### Respiratory protection

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary

#### Eye protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

#### Hands protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

#### Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties. Described by individual ingredient

### 1) Ethylene Glycol

a) Appearance	Liquid, Colourless
b) Odour	no data available
c) Odour threshold	no data available
d) pH	no data available
e) Melting point/freezing point	melting point/range : -13 °C
f) Initial boiling point and boiling range	196 ~ 198 °C
g) Flash point	111 °C - closed cup
h) Evaporation rate	1
i) Flammability (solid, gas)	no data available
j) Upper/lower flammability or explosive limits	Upper explosion limit : 15.3%(V) Lower explosion limit : 3.2%(V)
k) Vapor pressure	0.11 hPa at 20 °C 0.13 hPa at 20
l) Vapor density	2.14 – (Air = 1.0)
n) Water solubility	completely misciblesoluble
o) Partition coefficient: n-octanol/water	log Pow.-1.36
p) Auto-ignition temperature	no data available

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- |                              |                   |
|------------------------------|-------------------|
| q) Decomposition temperature | no data available |
| r) Viscosity                 | no data available |
| s) Explosive properties      | no data available |
| t) Oxidizing properties      | no data available |

**2) Potassium carbonate**

- |   |                                       |
|---|---------------------------------------|
| a) Appearance                                   | Powder, White                         |
| b) Odour  | no data available                     |
| c) Odour threshold                              | no data available                     |
| d) pH   | 11.0 ~ 13 at 138 g/l at 25 °C         |
| e) Melting point/freezing point                 | melting point/range : 891 °C          |
| f) Initial boiling point and boiling range      | no data available                     |
| g) Flash point                                  | no data available                     |
| h) Evaporation rate                             | no data available                     |
| i) Flammability (solid, gas)                    | no data available                     |
| j) Upper/lower flammability or explosive limits | no data available                     |
| l) Vapor density                                | no data available                     |
| m) Relative density                             | 2.43 g/mL at 25 °C                    |
| n) Water solubility                             | 138 g/l at 20 °C - completely soluble |
| o) Partition coefficient: n-octanol/water       | no data available                     |
| p) Auto-ignition temperature                    | no data available                     |
| q) Viscosity                                    | no data available                     |
| r) Explosive properties                         | no data available                     |
| s) Oxidizing properties                         | no data available                     |

**3) WATER**

- |               |                    |
|---------------|--------------------|
| a) Appearance | Liquid, Colourless |
|---------------|--------------------|

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b) Odour	no data available
c) Odour threshold	no data available
d) pH	6.0~ 8.0 at 25°C
e) Melting point/freezing point	0.0°C
f) Initial boiling point and boiling range	100°C - lit
g) Flash point	no data available
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/lower flammability or explosive limits	no data available
k) Vapor pressure	no data available
l) Vapor density	no data available
m) Relative density	1,000 g/cm <sup>3</sup> at 3.98°C
n) Water solubility	completely miscible
o) Partition coefficient: n-octanol/water	no data available
p) Auto-ignition temperature	no data available
q) Decomposition temperature	no data available
r) Viscosity	no data available
s) Explosive properties	no data available
t) Oxidizing properties	no data available

**10. STABILITY AND REACTIVITY**

Information on basic stability and reactivities. Described by individual ingredient

## 1) Ethylene Glycol

**Reactivity**

no data available

**Chemical stability**

no data available

**Possibility of hazardous reactions**

no data available

**Conditions to avoid**

no data available

**Incompatible materials**

Strong acids, Strong oxidizing agents, Strong bases, Aldehydes, aluminum

**Hazardous decomposition products**

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Other decomposition products - no data available

### 2) Potassium carbonate

**Reactivity**

no data available

**Chemical stability**

no data available

**Possibility of hazardous reactions**

no data available

**Conditions to avoid**

Exposure to moisture

**Incompatible materials**

Acids, Strong oxidizing agents

**Hazardous decomposition products**

Other decomposition products - no data available

### 3) WATER

**Reactivity**

no data available

**Chemical stability**

no data available

**Possibility of hazardous reactions**

no data available

**Conditions to avoid**

no data available

**Incompatible materials**

no data available

**Hazardous decomposition products**

no data available

## 11. TOXICOLOGICAL INFORMATION

Information on basic toxicological properties. Described by individual ingredient

### 1) Ethylene Glycol

**Information on toxicological effects**

**Acute toxicity**

LD50 Oral - rat - 4.700 mg/kg

LD50 Dermal - rabbit - 10.626 mg/kg

**Skin corrosion/irritation**

no data available

**Serious eye damage/eye irritation**

Eyes - rabbit - Mild eye irritation - 24 h

**Respiratory or skin sensitization**

no data available

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

This product is or contains a component that is probably not carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

IARC : No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity**

Laboratory experiments have shown teratogenic effects.

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Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

### Specific target organ toxicity - single exposure

no data available

### Specific target organ toxicity - repeated exposure

no data available

### Aspiration hazard

no data available

### Potential health effects

#### Inhalation

May be harmful if inhaled. May cause respiratory tract irritation.

#### Ingestion

Harmful if swallowed.

#### Skin

May be harmful if absorbed through skin. May cause skin irritation.

#### Eyes

Causes eye irritation.

### Signs and Symptoms of Exposure

When ingested, early symptoms mimic alcohol inebriation and are followed by nausea, vomiting, abdominal pain, weakness, muscle tenderness, respiratory failure, convulsions, cardiovascular collapse, pulmonary edema, hypocalcemic tetany, and severe metabolic acidosis. Without treatment, death may occur in 8 to 24 hours. Victims who survive the initial toxicity period usually develop renal failure along with brain and liver damage. Exposure to and/or consumption of alcohol may increase toxic effects.

### Additional Information

RTECS: KW2975000

## 2) Potassium carbonate

### Information on toxicological effects

#### Acute toxicity

LD50 Oral - rat - 1.870 mg/kg

#### Skin corrosion/irritation

no data available

#### Serious eye damage/eye irritation

no data available

#### Respiratory or skin sensitization

no data available

#### Germ cell mutagenicity

Genotoxicity in vivo - rat - Oral

Unscheduled DNA synthesis

#### Carcinogenicity

IARC:

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### Reproductive toxicity

no data available

### Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation.

### Specific target organ toxicity - repeated exposure

no data available

### Aspiration hazard

no data available

### Potential health effects



**PSDS (Product Safety Data Sheet)**

<b>Inhalation</b>	May be harmful if inhaled. Causes respiratory tract irritation.
<b>Ingestion</b>	Harmful if swallowed.
<b>Skin</b>	May be harmful if absorbed through skin. Causes skin irritation.
<b>Eyes</b>	Causes serious eye irritation.

**Signs and Symptoms of Exposure**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Additional Information**

RTECS: TS7750000

## 3) WATER

**Information on toxicological effects**
**Acute toxicity**

no data available

**Skin corrosion/irritation**

no data available

**Serious eye damage/eye irritation**

no data available

**Respiratory or skin sensitization**

no data available

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

IARC:

No component of this product present at levels greater than or equal to 0.1% is identified as Probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity**

no data available

**Specific target organ toxicity - single exposure**

no data available

**Specific target organ toxicity - repeated exposure**

no data available

**Aspiration hazard**

no data available

**Potential health effects**

**Inhalation** May cause respiratory tract irritation.

**Signs and Symptoms of Exposure**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Additional Information**

RTECS: ZC0110000

**12. ECOLOGICAL INFORMATION**

**Information on basic ecological properties. Described by individual ingredient**

## 1) Ethylene Glycol

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### Toxicity

Toxicity to fish

LC50 - Oncorhynchus mykiss (rainbow trout) - 18.500 mg/l - 96 h

LC50 - Leuciscus idus (Golden orfe) - > 10.000 mg/l - 48 h

NOEC - Pimephales promelas (fathead minnow) - 32.000 mg/l - 7 d

NOEC - Pimephales promelas (fathead minnow) - 39.140 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia magna (Water flea) - 74.000 mg/l - 24 h

NOEC - Daphnia - 24.000 mg/l - 48 h

LC50 - Daphnia magna (Water flea) - 41.000 mg/l - 48 h

### Persistence and degradability

no data available

### Bioaccumulative potential

Does not bioaccumulate.

Bioaccumulation other fish - 61 d -50 mg/l

Bioconcentration factor (BCF): 0,60

### Mobility in soil

no data available

### Results of PBT and vPvB assessment

no data available

### Other adverse effects

no data available

## 2) Potassium carbonate

### Toxicity

Toxicity to fish

LC50 - Pimephales promelas (fathead minnow) - < 510 mg/l - 96 h

### Persistence and degradability

no data available

### Bioaccumulative potential

no data available

### Mobility in soil

no data available

### Results of PBT and vPvB assessment

no data available

### Other adverse effects

no data available

## 3) WATER

### Toxicity

no data available

### Persistence and degradability

not applicable

### Bioaccumulative potential

no data available

### Mobility in soil

no data available

### Results of PBT and vPvB assessment

no data available

### Other adverse effects

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no data available

**13. DISPOSAL CONSIDERATIONS**
**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**

Dispose of as unused product

**Above all, dispose of in accordance with all applicable federal, state and local regulations.**

**14. TRANSPORT INFORMATION**
**UN number**

ADR/RID: -      IMDG: -      IATA: -

**UN proper shipping name**

ADR/RID:	Not dangerous goods
IMDG:	Not dangerous goods
IATA:	Not dangerous goods

**Transport hazard class(es)**

ADR/RID: -      IMDG: -      IATA: -

**Packaging group**

ADR/RID: -      IMDG: -      IATA: -

**Environmental hazards**

ADR/RID: no      IMDG Marine pollute: no      IATA: no

**Special precautions for user**

no data available

**15. REGULATORY INFORMATION**
**REGULATORY INFORMATION**

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

no data available

**Chemical Safety Assessment**

no data available

**16. OTHER INFORMATION**

## 1) Source of the data

- (1) Chemical manufacturer's information : SDS(SAFETY DATA SHEET) Data
- (2) Chem Guide CAS DataBase
- (3) Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>)
- (4) ECB-ESIS(European chemical Substances Information System)(<http://ecb.jrc.it/esis>)
- (5) ECOTOX Database, EPA(<http://cfpub.epa.gov/ecotox>)
- (6) IUCLID Chemical Data Sheet, EC-ECB
- (7) International Chemical Safety Cards(ICSC)(<http://www.nihs.go.jp/ICSC>)
- (8) TOXNET, U.S. National Library of Medicine(<http://toxnet.nlm.nih.gov>)
- (9) The Chemical Database, The Department of Chemistry at the University of Akron  
(<http://ull.chemistry.uakron.edu/erd>)

**PSDS (Product Safety Data Sheet)**

- (10) Korea Information System for Chemical Safety, KISChem ([http:// http://kischem.nier.go.kr](http://kischem.nier.go.kr))
- (11) Chemical information system (<http://ncis.nier.go.kr>)
- (12) Chemical substance Raw material manufacturer's information :PSDS(PRODUCT SAFETY DATA SHEET)  
Data
- (13) OSHA (Occupational Safety and Health Administration) : <https://www.osha.gov>

2) The first creation date : 2015.02.11

3) The number of times, and the final revision date : Revision times 05

The final revision date : 2018.11.28

**Further information**

*Pulsarlube has prepared copyrighted Product Safety Datasheets to provide information on the different Pulsarlube automatic grease lubricator systems. As defined in the text above, Pulsarlube automatic grease lubricators are manufactured articles, which do not result in exposure to a hazardous chemical under normal conditions of use. The information and recommendations set forth herein are made in good faith, for information only, and are believed to be accurate as of the date of preparation. However, Pulsarlube USA, Inc. MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM REFERENCE ON IT.*