

Pulsarlube PL1 (Multipurpose Grease)

1. MANUFACTURER INFORMATION

- 1) Product Name : Pulsarlube PL1 (Multipurpose Grease)
- 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) GHS Classification
 - Acute toxicity (oral) : Category5
 - Skin corrosion/irritation : Category2
 - Serious eye damage/irritation : Category2A
 - Specific target organ toxicity(Repeated exposure) : Category2
 - Acute aquatic toxicity : Category3

2) GHS label elements

- Pictogram



- Signal word : Warning
- Hazard/Risk Statement :
 - H303 May harmful if swallowed.
 - H315 Causes skin irritation
 - H319 Causes serious eye irritation
 - H373 May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
 - H402 Harmful to aquatic organisms
- Precautionary Statement
 - <Prevention>
 - P260 Do not breathe dust/fume.
 - P264 Wash hands thoroughly after handling.
 - P273 Avoid release to the environment.

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

<Response>

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

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

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P314 Get medical advice/attention if you feel unwell.

P321 Specific treatment

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

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

P362 Take off contaminated clothing and wash before reuse.

<Storage>

Not Applicable

<Disposal>

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

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

Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	Trade names and Synonyms	CAS No	Content (%)
Distillates (petroleum), hydrotreated heavy paraffinic	Emulsifiable oil	64742-54-7	60.0 ~ 70.0
Lithium metaborate	Residual oils (petroleum), Hydrotreated	13453-69-5	1.0 ~ 10.0
Phosphorodithioic acid 0,0-bis(2-ethylhexyl) ester, zinc salt	-	4259-15-8	0.1 ~ 1.0
Secret	Secret	-	Secret

4. FIRST AID MEASURES

Eye contact

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

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.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- Wash thoroughly after handling.

Inhalation contact

When exposed to large amounts of steam and mist, move to fresh air.

Take specific treatment if needed.

Get medical attention immediately.

Ingestion contact

Please be advised by doctor whether induction of vomit is demanded or not.

Rinse your mouth with water immediately.

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Get medical attention immediately.

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

Not available

Notes to physician

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

5. FIRE FIGHTING MEASURES**Suitable (Unsuitable) extinguishing media**

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

Specific hazards arising from the chemical

Not available

Special protective actions for firefighters

Cool containers with water until well after fire is out.
Keep unauthorized personnel out.
Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
Use appropriate extinguishing measure suitable for surrounding fire.
Keep containers cool with water spray.

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

Do not touch spilled material. Stop leak if you can do it without risk.
Remove all sources of ignition.
Handle the damaged containers or spilled material after wearing appropriate protective equipment
Avoid skin contact and inhalation

Environmental precautions

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

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 liquid state spills: Appropriate container for disposal of spilled material collected.
Put the spilled material in an appropriate containers and clean the contaminated area

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

Comply with all applicable laws and regulations for handling
Get the manual before use.
Refer to Engineering controls and personal protective equipment.
Operators should wear antistatic footwear and clothing.

Conditions for safe storage, including any incompatibilities

Do not use damaged containers.
Keep in the original container.

Please pay attention to incompatibilities materials and conditions to avoid.
No open fire
Prevent static electricity and keep away from combustible materials or heat sources.
Collected them in sealed containers.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits

- ACGIH TLV
 - [Distillates (petroleum), hydrotreated heavy paraffinic] : TWA 5 mg/m³, Inhalable particulate matter(Mineral oil, Pure, highly and severely refined)
- OSHA PEL
 - [Secret7]: 5 mg/m³ (Soluble compounds), 15 mg/m³ (Insoluble compounds - Total dust)

Engineering controls

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

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.
- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Dust, mist, fume-purifying respiratory protection
- Air-purifying respirator with high-efficiency particulate filtering
- Any respiratory protection with a electromotion fan(for dust, mist, fume-purifying)
- Self-contained breathing apparatus with a corpuscle filter of high efficiency
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece andoperated 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.

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	Paste, Brown
b) Odour	Characteristic
c) Odour threshold	Not available
d) pH	Not available
e) Meting point/freezing point	Not available
f) Initial boiling point and boiling range	Not available
g) Flash point	Not applicable
h) Evaporation rate	Not available
i) Flammability (solid, gas)	Not available
j) Upper/lower flammability or explosive limits	Not available
k) Vapor pressure	Not available
l) Solubility	Insoluble
m) Vapor density	Not available
n) Relative density	approx. 0.92 at 20°C

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o) Partition coefficient: n-octanol/water	Not available
p) Auto-ignition temperature	Not available
q) Decomposition temperature	Not available
r) Viscosity	Not available
s) Molecular weight	Not available

10. STABILITY AND REACTIVITY

Chemical Stability

This material is stable under recommended storage and handling conditions

Possibility of hazardous reactions

Hazardous Polymerization will not occur

Conditions to avoid

Avoid contact with incompatible materials and condition.

Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

Incompatible materials

Not available

Hazardous decomposition products

May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

Information on the likely routes of exposure

- Respiratory tracts : Not available
- Oral : May harmful if swallowed.
- Eye-Skin : Causes serious eye irritation
Causes skin irritation

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

- Acute toxic

* Oral

- Product (ATEmix) : 2000mg/kg < ATEmix <= 5000mg/kg
- [Distillates (petroleum), hydrotreated heavy paraffinic] : LD50 > 5000 mg/kg Rat (ECHA)
- [Secret3] : LD50 = 2500 mg/kg Rat
- [Secret4] : LD50 > 18000 mg/kg Rat
- [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : LD50 3100 mg/kg Rat,
(LD50 2000 ~ 5000 mg/kg Rat(ECHA))
- [Secret6] : LD50 29100 mg/kg Rat (NLM: ChemIDPlus), LD50 >5000 mg/kg Rat (ECHA)

* Dermal

- Product (ATEmix) : >5000mg/kg
- [Distillates (petroleum), hydrotreated heavy paraffinic] : LD50 >5000 mg/kg Rabbit (ECHA)
- [Secret3] : LD50 = 5520 mg/kg Rat
- [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : LD50 > 5000 mg/kg Rabbit (ECHA)
- [Secret6] : LD50>20000 mg/kg Rabbit (NLM: ChemIDPlus), LD50 >2000 mg/kg Rabbit (ECHA)

Inhalation

- Product (ATEmix) : Not available
- [Distillates (petroleum), hydrotreated heavy paraffinic] : LC50 >5.53 mg/l 4 hr Rat (ECHA)
- [Secret6] : Steam LC50 > 5 mg/L Rat (NLM: ChemIDPlus)

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- Skin corrosion/irritation
 - Causes skin irritation
- Serious eye damage/irritation
 - Causes serious eye irritation
- Respiratory sensitization
 - Not available
- Skin sensitization
 - Not available
- Carcinogenicity
 - * IARC
 - Not available
 - * OSHA
 - Not available
 - * ACGIH
 - Not available
 - * NTP
 - Not available
 - * EU CLP
 - [Distillates (petroleum), hydrotreated heavy paraffinic] : Carc. 1B (Note L)
- Germ cell mutagenicity
 - Not available
- Reproductive toxicity
 - Not available
- STOT-single exposure
 - Not available
- STOT-repeated exposure
 - May cause damage to organs through prolonged or repeated exposure
- Aspiration hazard
 - Not available

12. ECOLOGICAL INFORMATION

Ecotoxicity

- Fish
 - [Distillates (petroleum), hydrotreated heavy paraffinic] : LC50 5000 mg/l 96 hr Oncorhynchus mykiss (IUCLID)
 - [Secret2] : LC50 5600 mg/l 96 hr Oncorhynchus mykiss (ECOTOX)
 - [Lithium metaborate] : LC50 8970000 mg/l 96 hr (Estimate)
 - [Secret3] : LC50 = 25042.387 mg/l 96 hr (Estimate)
 - [Secret4] : LC50 0.000000000546 mg/l 96 hr (Even accepting the 1mg / L is less than the test material is difficult to dissolve the medium is not classified. (Solubility : 0.00000000000000002551mg/L)Water Solubility at 25 deg C (mg/L):0.00000000000000002551) (Estimate)
 - [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : LC50 1 mg/l 96 hr Pimephales promelas (IUCLID), LC50 >46 mg/l 96 hr (Cyprinodon variegatus)(ECHA)
 - [Secret6] : LC50 >1000 mg/l 96 hr (IUCLID)
 - [Secret8] : LC50 0.00000153 mg/l 96 hr (Estimate)
- Crustaceans
 - [Distillates (petroleum), hydrotreated heavy paraffinic] : EC50 1000 mg/l 48 hr Daphnia magna (IUCLID)
 - [Lithium metaborate] : LC50 6470000 mg/l 48 hr (Estimate)
 - [Secret3] : LC50 = 40.299 mg/l 48 hr (Estimate)
 - [Secret4] : EC50 0.0000000000000000297 mg/l 48 hr (Even accepting the 1mg / L is less than the test material is difficult to dissolve the medium is not classified. (Solubility : 0.00000000000000002551mg/L)Water Solubility at 25 deg C (mg/L): 0.00000000000000002551) (Estimate)
 - [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : EC50 1 mg/l 48 hr Daphnia magna (OECD TG 202(GLP)) (IUCLID)
 - [Secret6] : EC50 >1000 mg/l 48 hr Daphnia magna (IUCLID)

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- [Secret8] : EC50 0.00000361 mg/l 48 hr (Estimate)
 - Algae
- [Distillates (petroleum), hydrotreated heavy paraffinic] : EC50 1000 mg/l 96 hr Scenedesmus subspicatus (IUCLID)
- [Lithium metaborate] : EC50 2911000 mg/l 96 hr (Estimate)
- [Secret3] : EC50 = 11.563 mg/l 96 hr (Estimate)
- [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : EC50 1 mg/l 96 hr Selenastrum capricornutum (OECD TG 201(GLP)) (IUCLID)
- [Secret6] : EC50 >900 mg/l 72 hr Scenedesmus subspicatus (IUCLID)
- [Secret8] : EC50 0.000114 mg/l 96 hr (Estimate)

Persistence and degradability

- Persistence
 - [Distillates (petroleum), hydrotreated heavy paraffinic] : log Kow = 3.9 ~ 6 (Estimate)
 - [Secret1] : log Kow 2.60 (Estimate)
 - [Secret3] : log Kow = -1.37 (NLM/HSDB)
 - [Secret4] : log Kow 23.29 (Estimate)
 - [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : log Kow 3.59 (ECHA)
 - [Secret6] : log Kow = -0.41 (NLM)
 - [Secret8] : log Kow 11.67 (Estimate)

○ Degradability

- [Secret6] : COD = 1290 BOD5/COD = 0.019 (IUCLID)

Bioaccumulative potential

○ Bioaccumulative potential

- [Secret1] : BCF 56.23 (Estimate)
- [Lithium metaborate] : BCF 3.162 (Estimate)
- [Secret3] : BCF = 3 (NLM/HSDB)
- [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : 2000 (L/kg)(ECHA)
- [Secret6] : BCF = 3.162 (Estimate)
- [Secret8] : BCF 17.39 (Estimate)

○ Biodegradation

- [Distillates (petroleum), hydrotreated heavy paraffinic] : Biodegradability = 6 (%) 28 day (Aerobic, Domestic wastewater, does not decompose easily)
- [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : 5 % 27 day(ECHA)
- [Secret6] : Biodegradability = 68 (%) 4 week (89,90%) (CHRIP)
- [Secret8] : non-Degradability - no potential for degradation and high potential for in vivo accumulation

Mobility in soil

- Not available

Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

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 applicabl
- It shall be treated by incineration
- Incinerate or perform stabilizing treatment.

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

UN No. (IMDG CODE/IATA DGR)

Not applicable

PSDS (Product Safety Data Sheet)

Proper shipping name

Not applicable

Hazard Class

Not applicable

IMDG CODE/IATA DGR Packing group

Not applicable

Marine pollutant

Not applicable

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 : Not available

EmS SPILLAGE SCHEDULE : Not available

Air transport(IATA): Not subject to IATA regulations.

15. REGULATORY INFORMATION

National and/or international regulatory information

- POPs Management Law
 - [Secret6] : Not applicable
 - [Secret8] : Not applicable
 - [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : Not applicable
 - [Secret1] : Not applicable
 - [Secret2] : Not applicable
 - [Secret5] : Not applicable
 - [Lithium metaborate] : Not applicable
 - [Secret3] : Not applicable
 - [Secret4] : Not applicable
 - [Distillates (petroleum), hydrotreated heavy paraffinic] : Not applicable
 - [Secret7] : Not applicable
- Information of EU Classification
 - * Classification
 - [Secret6] : H319
 - [Distillates (petroleum), hydrotreated heavy paraffinic] : H350
- 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)
 - Not applicable
- Rotterdam Convention listed ingredients
 - Not applicable
- Stockholm Convention listed ingredients
 - Not applicable
- Montreal Protocol listed ingredients
 - Not applicable

16. OTHER INFORMATION

- 1) Source of the data

PSDS (Product Safety Data Sheet)

- (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>)
 - (10) Korea Information System for Chemical Safety, KISChem (<http://kischem.nier.go.kr>)
 - (11) Chemical information system (<http://ncis.nier.go.kr>)
 - (12) Grease Raw material manufacturer's information : PSDS(PRODUCT SAFETY DATA SHEET) Data
- 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 : 2020.11.24

Further information

Pulsarlube has prepared copyrighted Product Safety Datasheets to provide information on the different Pulsarlube automatic grease lubricator systems. As defined in above the text Pulsarlube automatic grease lubricator 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.