

Pulsarlube PL3 (High Speed Grease)

1. MANUFACTURER INFORMATION

- 1) Product Name : : Pulsarlube PL3 (High Speed 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.

6-19, Hansan-ro, Tanhyeon-myeon,

Paju-si, Gyeonggi-do,

Republic of Korea

Telephone Number for Information:

Tel.: +82 (2) 2135-3788

Fax : +82 (2) 2083-8485

sales.asia@pulsarlube.com

Emergency telephone number +82 (2) 2135-3788

2. HAZARDS IDENTIFICATION

- 1) GHS Classification
 - Acute toxicity (oral) : Category5
 - Skin corrosion/irritation : Category3
 - Acute aquatic toxicity : Category3
- 2) GHS label elements
 - Hazard symbols
Not applicable
 - Signal words: Warning
 - Hazard statements :
 - H303 May harmful if swallowed.
 - H316 Cause mild skin irritation
 - H402 Harmful to aquatic organisms
 - Precautionary statements
 - <Prevention>
 - P273 Avoid release to the environment.
 - <Response>
 - P312 Call a POISON CENTER or doctor/physician if you feel unwell.
 - P332+P313 If skin irritation occurs : Get medical advice/attention.
 - <Storage>
 - Not applicable
 - <Disposal>
 - P501 Dispose of contents/container in accordance with local/regional/national/international regulation
 - 3) Other hazards which do not result in classification
Not available

PSDS (Product Safety Data Sheet)
3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No	Content (%)
Distillates (petroleum), hydrotreated heavy paraffinic	Emulsifiable oil	64742-54-7	50.0 ~ 60.0
Distillates, petroleum, solvent-refined heavy	-	64741-96-4	10.0 ~ 20.0
Phosphorodithioic acid 0,0-bis(2-ethylhexyl) ester, zinc salt	-	4259-15-8	1.0 ~ 5.0
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.

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.

Inhalation contact

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

Take specific treatment if needed.

Ingestion contact

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

Rinse your mouth with water 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

Keep unauthorized personnel out.

Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.

In case of conflagration, use automatic fire sprinkler. Major fire may require withdrawal, allowing the object itself to burn.

Avoid inhalation of materials or combustion by-products.

Do not approach the tank surrounded by fire until it is extinguished.

Keep containers cool with water spray.

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

Wear proper personal protective apparatus as indicated in Section 8 and avoid skin contact and inhalation.

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Ventilate closed spaces before entering.

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

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

Avoid direct physical contact.

Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.

Avoid contact with incompatible materials.

Refer to Engineering controls and personal protective equipment.

Conditions for safe storage, including any incompatibilities

Do not apply direct heat.

Store according to current laws and regulations

Do not apply any physical shock to container.

Keep in the original container.

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)

- [Distillates, petroleum, solvent-refined heavy naphthenic] : TWA 5 mg/m³, Inhalable particulate matter (Mineral oil, Pure, highly and severely refined)

- [Secret1] : TWA 5 mg/m³, Inhalable particulate matter(Mineral oil, Pure, highly and severely refined)

- [Secret9] : TWA 5 mg/m³, Inhalable particulate matter(Mineral oil, Pure, highly and severely refined)

OSHA PEL

- [Secret4]: 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 and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

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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.

Hands protection

Wear appropriate glove.

Skin protection

Wear appropriate clothing.

Others

Not available.

9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	
- Appearance	Paste
- Color	Brown
B. Odor	Characteristic
C. Odor threshold	Not available
D. pH	Not available
E. Melting point/Freezing point	Not available
F. Initial Boiling Point/Boiling Ranges	Not available
G. Flash point	Not available
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	Insoluble
M. Vapour density	Not available
N. Specific gravity(Relative density)	approx. 0.89 at 20 °C
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

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 surface.

Incompatible materials

Not available

Hazardous decomposition products

May emit flammable vapour if involved in fire.

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11. TOXICOLOGICAL INFORMATION
Information on the likely routes of exposure

- Respiratory tracts : Not available
- Oral : May harmful if swallowed.
- Eye · Skin : Cause mild 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)
 - [Distillates, petroleum, solvent-refined heavy naphthenic] : LD50 > 5000 mg/kg Rat (GLP, ECHA)
 - [Secret1] : LD50 >5000 mg/kg Rat (OECD Guideline 401 (Acute Oral Toxicity), GLP) (ECHA)
 - [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : LD50 3100 mg/kg Rat, (LD50 2000 ~ 5000 mg/kg Rat(ECHA))
 - [Secret5] : LD50 > 18000 mg/kg Rat
 - [Secret7] : LD50 3000 mg/kg Rat
 - [Secret9] : LD50 > 5000 mg/kg Rat (IUCLID)
 - * Dermal
 - Product (ATEmix) : >5000mg/kg
 - [Distillates (petroleum), hydrotreated heavy paraffinic] : LD50 >5000 mg/kg Rabbit (ECHA)
 - [Distillates, petroleum, solvent-refined heavy naphthenic] : LD50 > 5000 mg/kg Rabbit (GLP, ECHA)
 - [Secret1] : LD50 >2000 mg/kg Rabbit (OECD Guideline 402 (Acute Dermal Toxicity),GLP) (EHCA)
 - [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : LD50 > 5000 mg/kg Rabbit (ECHA)
 - [Secret9] : LD50 >5000 mg/kg Rabbit (IUCLID)
 - * Inhalation
 - Product (ATEmix) : Not available
 - [Distillates (petroleum), hydrotreated heavy paraffinic] : LC50 >5.53 mg/l 4 hr Rat (ECHA)
 - [Distillates, petroleum, solvent-refined heavy naphthenic] : LC50 >5.53 mg/l 4 hr Rat (ECHA)
 - [Secret1] : LC50 >2.18 mg/l 4 hr Rat (OECD Guideline 403 (Acute Inhalation Toxicity), GLP) (ECHA)
 - [Secret9] : Aerosol LC50 2.18 mg/l 4 hr Rat (OECD Guideline 403, IUCLID)
- Skin corrosion/irritation
 - Causes mild skin irritation
- Serious eye damage/irritation
 - Not available
- Respiratory sensitization
 - Not available
- Skin sensitization
 - Not available
- Carcinogenicity
 - * IARC
 - Not available
 - * OSHA
 - Not available
 - * ACGIH
 - Not available
 - * NTP
 - Not available
 - * EU CLP
 - [Secret1] : Carc. 1B (Note L)
 - [Secret9] : Carc. 1B (Note L)
 - [Distillates (petroleum), hydrotreated heavy paraffinic] : Carc. 1B (Note L)
 - [Distillates, petroleum, solvent-refined heavy naphthenic] : Carc. 1B (Note L)
- Germ cell mutagenicity
 - Not available

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- Reproductive toxicity
 - Not available
- STOT-single exposure
 - Not available
- STOT-repeated exposure
 - Not available
- Aspiration hazard
 - Not available

12. ECOLOGICAL INFORMATION

Ecotoxicity

- Fish
 - [Distillates (petroleum), hydrotreated heavy paraffinic] : LC50 5000 mg/l 96 hr Oncorhynchus mykiss (IUCLID)
 - [Distillates, petroleum, solvent-refined heavy naphthenic] : LC50 5000 mg/l 96 hr Oncorhynchus mykiss (IUCLID)
 - [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)
 - [Secret3] : LC50 0.00000153 mg/l 96 hr (Estimate)
 - [Secret5] : 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)
 - [Secret7] : LC50 0.00000159 mg/L 96hr (estimate)
 - [Secret9] : LC50 > 5000 mg/l 96 hr Oncorhynchus mykiss (IUCLID)
 - [Secret8] : LC50 0.000103 mg/l 96 hr (Estimate)
- Crustaceans
 - [Distillates (petroleum), hydrotreated heavy paraffinic] : EC50 1000 mg/l 48 hr Daphnia magna (IUCLID)
 - [Distillates, petroleum, solvent-refined heavy naphthenic] : EC50 1000 mg/l 48 hr Daphnia magna (IUCLID)
 - [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : EC50 1 mg/l 48 hr Daphnia magna (OECD TG 202(GLP))
 - [Secret3] : EC50 0.00000361 mg/l 48 hr (Estimate)
 - [Secret5] : 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)
 - [Secret7] : LC50 0.00000318 mg/L 48hr (estimate)
 - [Secret9] : EC50 > 1000 mg/l 48 hr Daphnia magna (IUCLID)
 - [Secret8] : LC50 0.00018 mg/l 48 hr (Estimate)
- Algae
 - [Distillates (petroleum), hydrotreated heavy paraffinic] : EC50 1000 mg/l 96 hr Scenedesmus subspicatus (IUCLID)
 - [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : EC50 1 mg/l 96 hr Selenastrum capricornutum (OECD TG 201(GLP)) (IUCLID)
 - [Secret3] : EC50 0.000114 mg/l 96 hr (Estimate)
 - [Secret7] : EC50 0.00000335 mg/L 96hr (estimate)
 - [Secret9] : EC50 > 1000 mg/l 96 hr Scenedesmus subspicatus (IUCLID)
 - [Secret8] : EC50 0.000168 mg/l 96 hr (Estimate)

Persistence and degradability

- Persistence
 - [Distillates (petroleum), hydrotreated heavy paraffinic] : log Kow = 3.9 ~ 6 (Estimate)
 - [Distillates, petroleum, solvent-refined heavy naphthenic] : log Kow 3.9 ~ 6 (IUCLID)
 - [Secret1] : log Kow 8.81 (Estimate)
 - [Secret2] : log Kow 2.60 (Estimate)
 - [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : log Kow 3.59 (ECHA)
 - [Secret3] : log Kow 11.67 (Estimate)
 - [Secret5] : log Kow 23.29 (Estimate)
 - [Secret7] : log Kow 11.05 (Estimate)
 - [Secret9] : log Kow 3.9 ~ 6 (Estimate)

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- Degradability
 - Not available

Bioaccumulative potential

- Bioaccumulative potential
 - [Secret2] : BCF 56.23 (Estimate)
 - [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : 2000 (L/kg)(ECHA)
 - [Secret3] : BCF 17.39 (Estimate)
 - [Secret8] : BCF 3.69 (Estimate)
- Biodegradation
 - [Distillates (petroleum), hydrotreated heavy paraffinic] : Biodegradability = 6 (%) 28 day (Aerobic, Domestic wastewater, does not decompose easily)
 - [Distillates, petroleum, solvent-refined heavy naphthenic] : 6 (%) 28 day (Aerobic, Domestic wastewater, does not decompose easily)
 - [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : 5 % 27 day(ECHA)
 - [Secret3] : non-Degradability - no potential for degradation and high potential for in vivo accumulation
 - [Secret9] : 6 (%) 28 day (Aerobic, Domestic wastewater, does not decompose easily)

Mobility in soil

Not available

Other adverse effects

Not 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 applicable
- 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

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

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- 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
 - [Secret3] : Not applicable
 - [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : Not applicable
 - [Secret2] : Not applicable
 - [Secret8] : Not applicable
 - [Secret5] : Not applicable
 - [Secret7] : Not applicable
 - [Distillates, petroleum, solvent-refined heavy naphthenic] : Not applicable
 - [Secret9] : Not applicable
 - [Distillates (petroleum), hydrotreated heavy paraffinic] : Not applicable
 - [Secret1] : Not applicable
 - [Secret4] : Not applicable
 - [Secret6] : Not applicable
- Information of EU Classification
 - * Classification
 - [Secret1] : H350
 - [Secret9] : H350
 - [Distillates (petroleum), hydrotreated heavy paraffinic] : H350
 - [Distillates, petroleum, solvent-refined heavy naphthenic] : 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

- (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:// http://kischem.nier.go.kr](http://http://kischem.nier.go.kr))
- (11) Chemical information system (<http://ncis.nier.go.kr>)

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- (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 : 2020.11.25

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 MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM REFERENCE ON IT.