SAFETY DATA SHEET

According to OSHA Hazcom Standard 29 CFR 1910.1200

XTeer 4T 7000 SN/MB 5W-40 (ENG)

Date of issue: 2023-03-15 **Revision date: 2023-10-18** **Version: 5.0**

1. IDENTIFICATION

A. Product name

- XTeer 4T 7000 SN/MB 5W-40 (ENG)

B. Recommended use and restriction on use

- General use : Motorcycle engine oil
- Restriction on use : Do not use for purposes other than recommended.

C. Manufacturer / Supplier / Distributor information

○ **Manufacturer information**

- Company name : HD HYUNDAI OILBANK
- Address : 17-10, Mabuk-ro 240beon-gil, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea
- Emergency telephone number : 02-500-4500

○ **Supplier/Distributer information**

- Company name : HD HYUNDAI OILBANK
- Address : 17-10, Mabuk-ro 240beon-gil, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea
- Emergency telephone number : 02-500-4500

2. HAZARD IDENTIFICATION

A. GHS Classification

- Not applicable

B. GHS label elements

○ **Hazard symbols**

Not applicable

○ **Signal words**

- Not applicable

○ **Hazard statements**

- Not applicable

○ **Precautionary statements**

1) Prevention

- Not applicable

2) Response

- Not applicable

3) Storage

- Not applicable

4) Disposal

- Not applicable

C. Other hazards which do not result in classification

- 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	80 ~ 85

Distillates (petroleum), hydrotreated light paraffinic	Mineral oil, petroleum distillates, hydrotreated (severe) light paraffinic	64742-55-8	5 ~ 7
Distillates (petroleum), solvent-dewaxed heavy paraffinic	Heavy paraffinic base lube stock ; Mineral oil, petroleum distillates, solvent dewaxed heavy paraffinic (severe solvent-refining and/or hydrotreatment) ; Solvent dewaxed heavy paraffinic distillate ; Adriatic spindle oil	64742-65-0	~ 1.0
Distillates (petroleum), solvent-refined heavy paraffinic	Distillates (petroleum), solvent-refined heavy paraffinic ; Distillates, petroleum, solvent refined heavy paraffinic ; DISTILLATES(PETROLEUM),SOLVENT-REFINED HEAVY PARAFFINIC ; DISTILLATES (PETROLEUM), SOLVENT REFINED, HEAVY PARAFFINIC ; OLVENT-REFINED HEAVY PARAFFINIC PETROLEUM ; SOLVENT REFINED HEAVY PARIFFINIC DISTILLATES ; HEAVY PARAFFINIC CUTS SOLVENT ; SOLVENT REFINED HEAVY PARAFFINIC OIL ;	64741-88-4	~ 1.0
Phosphorodithioic acid mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters zinc salts	Phosphorodithioic acid, O,O-bis(1,3-dimethylbutyl and isopropyl)esters, zinc salts	84605-29-8	~ 1.0
Amides, coco, N,N-bis(hydroxyethyl) reaction products with coco monoglycerides and molybdenum oxide(MoO3)	CSR160805-41025	445409-27-8	~ 0.5
Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt	1-Hexanol,2-ethyl-, O,O-diester with phosphorodithioic acid, zinc salt (7CI)	4259-15-8	~ 0.2
Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based	Not available	72623-87-1	~ 0.1
Distillates (petroleum), hydrotreated heavy naphthenic	Hydrotreated heavy naphthenic distillates (petroleum) ; Severely solvent refined heavy paraffinic distillates ; Oils, mineral, heavy naphthenic, hydrotreated ; Oils, naphthenic, hydrogenated ; Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic ;	64742-52-5	~ 0.1
N-Phenylbenzenamine	Benzenamine, N-phenyl- ; N-Phenylbenzenamine ; N-Phenylaniline ; Amino diphenyl ; Anilinobenzene ; Benzene, (phenylamino)- ; N,N-Diphenylamine ;	122-39-4	~ 0.01

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.

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

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

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

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

B. Specific hazards arising from the chemical

- Not available

C. Special protective actions for firefighters

- Avoid inhalation of materials or combustion by-products.
- Cool containers with water until well after fire is out.
- Do not approach the tank surrounded by fire until it is extinguished.
- In case of conflagration, use automatic fire sprinkler. Major fire may require withdrawal, allowing the object itself to burn.
- Keep unauthorized personnel out.

6. ACCIDENTAL RELEASE MEASURES

A. Personal precautions, protective equipment and emergency procedures

- 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
- Move container to safe area from the leak area.
- Must work against the wind, let the upwind people to evacuate.
- Remove all sources of ignition.

B. Environmental precautions

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

C. Methods and materials for containment and cleaning up

- Appropriate container for disposal of spilled material collected.
- Dike for later disposal.
- Disposal of waste shall be in compliance with the Wastes Control Act
- 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.

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Avoid contact with incompatible materials.
- Avoid direct physical contact.
- Comply with all applicable laws and regulations for handling
- Dealing only with a well-ventilated place.
- Do not handle until all safety precautions have been read and understood.

B. Conditions for safe storage, including any incompatibilities

- Avoid direct sunlight.
- Check regularly for leaks.
- Do not apply any physical shock to container.
- Do not apply direct heat.
- Do not use damaged containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. 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), hydrotreated light paraffinic] : TWA 5 mg/m3, Inhalable particulate matter(Mineral oil, Pure, highly and severely refined)
- [Distillates (petroleum), solvent-dewaxed heavy paraffinic] : TWA 5 mg/m3, Inhalable particulate matter(Mineral oil, Pure, highly and severely refined)
- [Distillates (petroleum), solvent-refined heavy paraffinic] : TWA 5 mg/m3, Inhalable particulate matter(Mineral oil, Pure, highly and severely refined)
- [Distillates (petroleum), hydrotreated heavy naphthenic] : TWA 5 mg/m3, Inhalable particulate matter(Mineral oil, Pure, highly and severely refined)
- [N-Phenylbenzenamine] : TWA, 10 mg/m3

○ **OSHA PEL**

- [Amides, coco, N,N-bis(hydroxyethyl) reaction products with coco monoglycerides and molybdenum oxide(MoO3)] : 5 mg/m3 (Soluble compounds), 15 mg/m3 (Insoluble compounds - Total dust)

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**

- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- Any chemical cartridge respirator with a full facepiece and organic vaporcartridge(s).
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Consider warning properties before use.
- 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.
- Respiratory protection is ranked in order from minimum to maximum.
- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.

○ **Eye protection**

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

○ **Hand protection**

- Wear appropriate chemical resistant glove.

○ **Skin protection**

- Wear appropriate chemical resistant protective clothing.

○ **Others**

- Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	
- Appearance	Liquid
- Color	transparent
B. Odor	mild
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	Not Available
M. Vapour density	Not Available
N. Specific gravity(Relative density)	0.8579
O. Partition coefficient of n-octanol/water	Not Available
P. Autoignition temperature	Not Available
Q. Decomposition temperature	Not Available
R. Viscosity	13.8 cSt at 100℃
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 : Accumulation of electrostatic charges, Heating, Flames and hot surfaces
- Avoid contact with incompatible materials and condition.

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**

- Not available

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

○ **Acute toxicity**

*** Oral**

- Product (ATEmix) : >5000mg/kg
- [Distillates (petroleum), hydrotreated heavy paraffinic] : LD50 > 5000 mg/kg Rat (ECHA)
- [Distillates (petroleum), hydrotreated light paraffinic] : LD50 > 5000 ㎎/㎏ Rat (GLP, ECHA)
- [Distillates (petroleum), solvent-dewaxed heavy paraffinic] : LD50 > 5000 ㎎/㎏ Rat (IUCLID)
- [Distillates (petroleum), solvent-refined heavy paraffinic] : Rat, LD50>5,000 mg/kg bw (OECD TG 401, GLP) (ECHA)
- [Phosphorodithioic acid mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters zinc salts] : Rat(F) LD50=3.1g/kg(3100mg/kg)(OECD Guideline 401)(ECHA).Rat LD50=2000~4000mg/kg)(IUCLID).Rat LD50=3.2gm/kg(RTECS)
- [Amides, coco, N,N-bis(hydroxyethyl) reaction products with coco monoglycerides and molybdenum oxide(MoO3)] : LD50 >5000 ㎎/㎏ Rat (OECD Guideline 401, GLP, ECHA)
- [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : LD50 3100 ㎎/㎏ Rat, (LD50 2000 ~ 5000 ㎎/㎏ Rat(ECHA))
- [Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based] : LD50 >5000 ㎎/㎏ Rat (Read-across Cas No. 64742-56-9) (OECD TG 401, GLP) (ECHA)
- [Distillates (petroleum), hydrotreated heavy naphthenic] : LD50 > 5000 ㎎/㎏ Rat (IUCLID)
- [N-Phenylbenzenamine] : 50 mg < LD50 <= 300 mg/kg (NIER), LD50 600 ㎎/㎏ Rat (ECHA, HSDB)

*** Dermal**

- Product (ATEmix) : >5000mg/kg
- [Distillates (petroleum), hydrotreated heavy paraffinic] : LD50 >5000 mg/kg Rabbit (ECHA)
- [Distillates (petroleum), hydrotreated light paraffinic] : LD50 > 5000 ㎎/㎏ Rabbit (GLP, ECHA)
- [Distillates (petroleum), solvent-dewaxed heavy paraffinic] : LD50 > 2000 ㎎/㎏ Rabbit (IUCLID)
- [Distillates (petroleum), solvent-refined heavy paraffinic] : Rabbit, LD50>2,000 mg/kg bw(OECD TG 402, GLP) (ECHA)
- [Phosphorodithioic acid mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters zinc salts] : rat(F/M) LD50>2002mg/kg bw. no death(OECD Guideline 402, GLP)(ECHA), Rabbit LD50>3200mg/kg bw(ECHA)
- [Amides, coco, N,N-bis(hydroxyethyl) reaction products with coco monoglycerides and molybdenum oxide(MoO3)] : LD50 >2000 ㎎/㎏ Rabbit (OECD Guideline 402, GLP, ECHA)
- [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : LD50 > 5000 ㎎/㎏ Rabbit (ECHA)
- [Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based] : LD50 >5000 ㎎/㎏ Rabbit (Read-across Cas No. 64742-56-9) (OECD TG 402, GLP) (ECHA)
- [Distillates (petroleum), hydrotreated heavy naphthenic] : LD50 >5000 ㎎/㎏ Rabbit (IUCLID)

*** Inhalation**

- Product (ATEmix) : 10.0mg/L 4hr < ATEmix <= 20.0mg/L 4hr
- [Distillates (petroleum), hydrotreated heavy paraffinic] : Aerosol LC50 > 5.53 mg/L 4 hr, Rat, Read-across : CAS No. 64741-88-4 (ECHA)
- [Distillates (petroleum), hydrotreated light paraffinic] : LC50 >5.53 ㎎/ℓ 4 hr Rat (ECHA)
- [Distillates (petroleum), solvent-dewaxed heavy paraffinic] : Mist LC50 2.18 ㎎/ℓ 4 hr Rat (IUCLID)
- [Distillates (petroleum), solvent-refined heavy paraffinic] : Mist LC50 2.18 mg/kg 4 hr Rat (IUCLID)

- [Phosphorodithioic acid mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters zinc salts] : Rat(F/M) 4h LC50 > 2.3 mg/L air. no death(OECD Guideline 403)(ECHA)

- [Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based] : Aerosol LC50 > 5.53 ㎎/ℓ 4hr No death Not classified (Read-across Cas No. 64741-88-4) (OECD TG 403, GLP) (ECHA)

- [Distillates (petroleum), hydrotreated heavy naphthenic] : Aerosol LC50 > 5.53 mg/L 4hr, Rat, No death (ECHA)

- [N-Phenylbenzenamine] : 0.5 mg/L < LC50 <=1.0 mg/L (NIER)

○ **Skin corrosion/irritation**

- Not available

○ **Serious eye damage/irritation**

- Not available

○ **Respiratory sensitization**

- Not available

○ **Skin sensitization**

- Not available

○ **Carcinogenicity**

*** IARC**

- Not available

*** OSHA**

- Not available

*** ACGIH**

- [Amides, coco, N,N-bis(hydroxyethyl) reaction products with coco monoglycerides and molybdenum oxide(MoO3)] : A3_Molybdenum (Soluble compounds)

- [N-Phenylbenzenamine] : A4

*** NTP**

- Not available

*** EU CLP**

- [Distillates (petroleum), hydrotreated heavy paraffinic] : Carc. 1B (Note L)

- [Distillates (petroleum), hydrotreated light paraffinic] : Carc. 1B (Note L)

- [Distillates (petroleum), solvent-dewaxed heavy paraffinic] : Carc. 1B (Note L)

- [Distillates (petroleum), solvent-refined heavy paraffinic] : Carc. 1B (Note L)

- [Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based] : Carc. 1B (Note L)

- [Distillates (petroleum), hydrotreated heavy naphthenic] : Carc. 1B (Note L)

○ **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**

- [Distillates (petroleum), hydrotreated heavy paraffinic] : LL50 > 100 mg/L, 96hr, Pimephales promelas (ECHA)

- [Distillates (petroleum), hydrotreated light paraffinic] : LC50 5000 ㎎/ℓ 96 hr Oncorhynchus mykiss (IUCLID)

- [Distillates (petroleum), solvent-dewaxed heavy paraffinic] : LC50 5000 ㎎/ℓ 96 hr Oncorhynchus mykiss (IUCLID)

- [Distillates (petroleum), solvent-refined heavy paraffinic] : LL50 > 100 ㎎/ℓ 96 hr Pimephales promelas (OECD TG 203, GLP) (ECHA)

- [Phosphorodithioic acid mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters zinc salts] : Cyprinodon variegatus 96hr LC50=46 mg/L (OECD Guideline 203, GLP)(read-across; 68457-79-4)(ECHA), Pimephales promelas 96hr LC50=10~100mg/L (OECD Guideline 203, GLP)(IUCLID)

- [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : LC50 1 ㎎/ℓ 96 hr Pimephales promelas (IUCLID), LC50 >46 ㎎/ℓ 96 hr (Cyprinodon variegatus)(ECHA)

- [Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based] : LL50 > 100 ㎎/ℓ 96 hr Pimephales promelas (OECD TG 203, GLP) (ECHA)

- [Distillates (petroleum), hydrotreated heavy naphthenic] : LL50 > 100 mg/L, 96hr, Pimephales promelas (ECHA)

○ **Crustaceans**

- [Distillates (petroleum), hydrotreated heavy paraffinic] : EL50 > 10000 mg/L, 48hr, Daphnia magna (ECHA)

- [Distillates (petroleum), hydrotreated light paraffinic] : EC50 1000 ㎎/ℓ 48 hr Daphnia magna (IUCLID)

- [Distillates (petroleum), solvent-dewaxed heavy paraffinic] : EC50 1000 ㎎/ℓ 48 hr Daphnia magna (IUCLID)

- [Distillates (petroleum), solvent-refined heavy paraffinic] : EL50 10000 ㎎/ℓ 48 hr Daphnia magna (OECD TG 202, GLP) (ECHA)

- [Phosphorodithioic acid mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters zinc salts] : Daphnia magna 48hr LC50=0.1~1mg/L (OECD Guideline 202, GLP)(IUCLID)

- [Amides, coco, N,N-bis(hydroxyethyl) reaction products with coco monoglycerides and molybdenum oxide(MoO3)] : EC50 1.5 ㎎/ℓ 48 hr Daphnia magna (OECD Guideline 202, GLP, ECHA)

- [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : EC50 1 ㎎/ℓ 48 hr Daphnia magna (OECD TG 202(GLP)) (IUCLID)

- [Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based] : EL50 > 10000 ㎎/ℓ 48 hr Daphnia magna (OECD TG 202) (ECHA)

- [Distillates (petroleum), hydrotreated heavy naphthenic] : EL50 > 10000 mg/L, 48hr, Daphnia magna (ECHA)

- [N-Phenylbenzenamine] : EC50 2 ㎎/ℓ 48 hr Daphnia magna(OECD TG 202, GLP)(ECHA)

○ **Algae**

- [Distillates (petroleum), hydrotreated heavy paraffinic] : EC25 1152.9 mg/L, 96hr, Pseudokirchneriella subcapitata, NOEL >= 100 mg/L, 72hr (ECHA)

- [Distillates (petroleum), solvent-dewaxed heavy paraffinic] : EC50 1000 ㎎/ℓ 96 hr Scenedesmus subspicatus (IUCLID)

- [Phosphorodithioic acid mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters zinc salts] : (조류(Scenedesmus subspicatus) : EL50(72h)=21 mg/L, (OECD Guideline 201, GLP), 지수식)|※출처 : ECHA

- [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : EC50 1 ㎎/ℓ 96 hr Selenastrum capricornutum (OECD TG 201(GLP)) (IUCLID)

- [Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based] : NOEL ≥ 100 > 100 ㎎/ℓ 72 hr Raphidocelis subcapitata (OECD TG 201) (ECHA)

- [Distillates (petroleum), hydrotreated heavy naphthenic] : EC25 1152.9 mg/L, 96hr, Pseudokirchneriella subcapitata, NOEL >= 100 mg/L, 72hr (ECHA)

- [N-Phenylbenzenamine] : ErC50 0.36 ㎎/ℓ 72 hr (NITE), EC50 2.1 / ㎎/ℓ 72 hr 기타(Pseudokirchneriella subcapitata, OECD TG 201, GLP)(ECHA)

B. Persistence and degradability

○ **Persistence**

- [Distillates (petroleum), hydrotreated heavy paraffinic] : log Pow = 1.99 ~ 18.02 (20℃) (ECHA)

- [Distillates (petroleum), solvent-dewaxed heavy paraffinic] : log Kow 3.9 ~ 6 (Estimate) (IUCLID)

- [Phosphorodithioic acid mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters zinc salts] : log kow=0.56(22 ℃, pH 5)(OECD Guideline 107, GLP)(ECHA)

- [Amides, coco, N,N-bis(hydroxyethyl) reaction products with coco monoglycerides and molybdenum oxide(MoO3)] : log Kow = 0.3 ~ 6.5 (ECHA)

- [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : log Kow 3.59 (ECHA)

- [Distillates (petroleum), hydrotreated heavy naphthenic] : log Pow = 1.99 ~ 18.02 (20℃) (ECHA)

- [N-Phenylbenzenamine] : 3.84 log Kow (at 20.2 ℃)(ECHA)

○ **Degradability**

- Not available

C. Bioaccumulative potential

○ **Bioaccumulative potential**

- [Phosphorodithioic acid mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters zinc salts] : BCF < 2000 (L/kg)

- [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : BCF 2000 (L/kg) (ECHA)

- [N-Phenylbenzenamine] : BCF 253 (NITE)

○ **Biodegradation**

- [Phosphorodithioic acid mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters zinc salts] : 1.5%, 28 days (OECD Guideline 301 B, GLP)(ECHA)

- [Amides, coco, N,N-bis(hydroxyethyl) reaction products with coco monoglycerides and molybdenum oxide(MoO3)] : 98 (%), 28 day (ECHA)

- [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : 5 % 27 day(ECHA)

- [N-Phenylbenzenamine] : 26 % 28 day (OECD Guideline 301 D)(ECHA)

D. Mobility in soil

- Not available

E. Other adverse effects

- [Distillates (petroleum), hydrotreated light paraffinic] : fish: NOEC(Fathead Minnow) >5000 mg/L/7days (IUCLID)

- [Distillates (petroleum), solvent-dewaxed heavy paraffinic] : fish: NOEC(Fathead Minnow) >5000 mg/L/7days (IUCLID)

- [Phosphorodithioic acid mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters zinc salts] : Daphnia 21 d NOEC=46 mg/L (OECD Guideline 202 GLP)(ECHA)

- [Amides, coco, N,N-bis(hydroxyethyl) reaction products with coco monoglycerides and molybdenum oxide(MoO3)] : NOEC=0.47 mg/L, Algae(Scenedesmus subspicatus): 72h NOEC=0.625 mg/L (ECHA)

- [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : crustaceans:Daphnia magna, NOEC 21d 0.8mg/L, OECD Guideline 211, Daphnia magna Reproduction Test,GLP, read-across from supporting substance, structural analogue or surrogate(ECHA)
- [N-Phenylbenzenamine] : Algae(Pseudokirchneriella subcapitata) NOEC, 72h, =0.37 mg/L, OECD TG 201, GLP (ECHA)

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- It shall be treated by incineration
- Oil water separation technology shall be applied as pre-waste treatment if it is applicable
- 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

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 CODE/IATA DGR)

- Not applicable

B. Proper shipping name

- Not applicable

C. Hazard Class

- Not applicable

D. IMDG CODE/IATA DGR Packing group

- Not applicable

E. Marine pollutant

- Not applicable

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

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

15. REGULATORY INFORMATION

A. National and/or international regulatory information

○ **POPs Management Law**

- [Distillates (petroleum), hydrotreated heavy paraffinic] : Not applicable
- [Distillates (petroleum), hydrotreated light paraffinic] : Not applicable
- [Distillates (petroleum), solvent-dewaxed heavy paraffinic] : Not applicable
- [Distillates (petroleum), solvent-refined heavy paraffinic] : Not applicable
- [Phosphorodithioic acid mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters zinc salts] : Not applicable
- [Amides, coco, N,N-bis(hydroxyethyl) reaction products with coco monoglycerides and molybdenum oxide(MoO3)] : Not applicable
- [Phosphorodithioic acid O,O-bis(2-ethylhexyl) ester, zinc salt] : Not applicable
- [Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based] : Not applicable
- [Distillates (petroleum), hydrotreated heavy naphthenic] : Not applicable
- [N-Phenylbenzenamine] : Not applicable

○ **Information of EU Classification**

*** Classification**

- [Distillates (petroleum), hydrotreated heavy paraffinic] : H350
- [Distillates (petroleum), hydrotreated light paraffinic] : H350
- [Distillates (petroleum), solvent-dewaxed heavy paraffinic] : H350
- [Distillates (petroleum), solvent-refined heavy paraffinic] : H350

- [Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based] : H350
- [Distillates (petroleum), hydrotreated heavy naphthenic] : H350
- [N-Phenylbenzenamine] : H301,H311,H373,H400,H410

○ **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)**

- [N-Phenylbenzenamine] : 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

- 2023-03-15

C. Revision number and Last date revised

- 4 times, 2023-10-18

D. Other

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