

# SAFETY DATA SHEET

Revision date: 2016-04-19

Version: LP2207.0

## 1. IDENTIFICATION

- A. Product name : ZIC X3 15W-40 Diesel
- B. Recommended use and restriction on use
- General use : Lubricants for diesel engines
  - Restriction on use : Not available
- C. Manufacturer / Supplier / Distributor information
- Manufacturer information
- Company name : SK Enmove Co., Ltd.
  - Address : 26, Jong-ro, Jongno-gu, Seoul, Korea
  - Dept. :
  - Telephone number :
  - Emergency telephone number : 1899-1147, 02-2121-6605
  - Fax number :
  - E-mail address :
- Supplier/Distributor information
- Company name : SK Enmove Co., Ltd.
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## 2. HAZARD IDENTIFICATION

- A. GHS Classification
- Not applicable
- B. GHS label elements
- Hazard symbols
    - Not applicable
  - Signal words
    - None
  - Hazard statements
    - None
  - Precautionary statements
    - 1) Prevention
      - None
    - 2) Response
      - None
    - 3) Storage
      - None
    - 4) Disposal
      - None
- C. Other hazards which do not result in classification : (NFPA Classification)
- NFPA grade (0 ~ 4 level)

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	%[weight]
Additive mixture	-	-	5.0~10.0
Distillates (petroleum), hydrotreated heavy paraffinic	Emulsifiable oil	64742-54-7	87.0~94.0
Phosphorodithioic acid O,O-dialkyl(C=1-14) esters zinc salts	Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts	68649-42-3	0.5~1.5
1-Propene polymer with ethene	Ethylene propylene copolymer	9010-79-1	0.5~1.5

### 4. FIRST AID MEASURES

#### A. Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15minutes and call a doctor/physician.

#### B. Skin contact

- Flush skin with plenty of wter for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

#### C. Inhalation contact

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

#### D. Ingestion contact

- About whether I should induce vomiting Take the advice of a doctor.
- 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

- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Using a unattended and water devices in case of large fire and leave alone to burn if you do not imperative.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Wear appropriate protective equipment.
- 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

- Wear proper personal protective apparatus as indicated in Section 8 and avoid skin contact and inhalation.
- Ventilate closed spaces before entering.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Move container to safe area from the leak area.
- Do not direct water at spill or source of leak.

#### 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.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- 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.

## 7. HANDLING AND STORAGE

### A. Precautions for safe handling

- 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.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not inhale the steam prolonged or repeated.

### B. Conditions for safe storage, including any incompatibilities

- Do not apply direct heat.
- Save applicable laws and regulations.
- Do not apply any physical shock to container.
- Keep in the original container.
- No open fire.

## 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)

#### OSHA PEL

- Not available

### B. Engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

### C. Individual protection measures, such as personal protective equipment

#### Respiratory protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- 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.

#### 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

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### A. Appearance

- Appearance : Liquid
- Color : Transparent brown

### B. Odor

: Mild petroleum odor

C. Odor threshold	: Not available
D. pH	: Not available
E. Melting point/Freezing point	: Not available
F. Initial Boiling Point/Boiling Ranges	: $\geq 290$ °C
G. Flash point	: $\geq 200$ °C
H. Evaporation rate	: Not available
I. Flammability(solid, gas)	: Not available
J. Upper/Lower Flammability or explosive limits	: Not available
K. Vapour pressure	: $\leq 0.1$ kPa (20 °C)
L. Solubility	: Not available
M. Vapour density	: $\geq 5$ (Air = 1)
N. Specific gravity(Relative density)	: 0.86
O. Partition coefficient of n-octanol/water	: Not available
P. Autoignition temperature	: Not available
Q. Decomposition temperature	: Not available
R. Viscosity	: Approximately 14.7 cSt (100°C)
S. Molecular weight	:

## 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)

- Not available

- Not available

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

#### Acute toxicity

##### \* Oral

- [Distillates (petroleum), hydrotreated heavy paraffinic] : LD50 > 15000 mg/kg Rat

##### \* Dermal

- [Distillates (petroleum), hydrotreated heavy paraffinic] : LD50 > 5000 mg/kg Rabbit

##### \* Inhalation

- [Distillates (petroleum), hydrotreated heavy paraffinic] : LC50 > 5.53 mg/ℓ Rat

#### 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
  - [Distillates (petroleum), hydrotreated heavy paraffinic] : A4
- \* NTP
  - Not available
- \* EU CLP
  - [Distillates (petroleum), hydrotreated heavy paraffinic] : Carc.1B

- 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] : LC50 > 5000 mg/ℓ 96 hr Oncorhynchus mykiss
  - [Phosphorodithioic acid O,O-dialkyl(C=1-14) esters zinc salts] : LC50 1 ~ 5 mg/ℓ 96 hr Pimephales promelas
- Crustaceans
  - [Distillates (petroleum), hydrotreated heavy paraffinic] : EC50 > 1000 mg/ℓ 48 hr Daphnia magna
  - [Phosphorodithioic acid O,O-dialkyl(C=1-14) esters zinc salts] : EC50 1 ~ 1.5 mg/ℓ 48 hr Daphnia magna
- Algae
  - [Distillates (petroleum), hydrotreated heavy paraffinic] : EC50 > 1000 mg/ℓ 96 hr Scenedesmus subspicatus
  - [Phosphorodithioic acid O,O-dialkyl(C=1-14) esters zinc salts] : EC50 1 ~ 5 mg/ℓ 96 hr Selenastrum capricornutum

### B. Persistence and degradability

- Persistence
  - [Distillates (petroleum), hydrotreated heavy paraffinic] : log Kow = 3.9 ~ 6 (Estimates)
- Degradability
  - Not available

### C. Bioaccumulative potential

- Bioaccumulative potential
  - [Phosphorodithioic acid O,O-dialkyl(C=1-14) esters zinc salts] : BCF 3.162
- Biodegradation
  - [Distillates (petroleum), hydrotreated heavy paraffinic] : Biodegradability = 6 (%) 28 day (Aerobic, Domestic wastewater, does not decompose easily)

### D. Mobility in soil

- Not available

### E. Other adverse effects

- Not available

## 13. DISPOSAL CONSIDERATIONS

### A. Disposal methods

- Since more than two kinds of designaed waste is mixed, it is difficult to treat seperatly, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- Incinerate the oil by separating the oil and water
- The remainder of the water after separation will be processed in a water pollution prevention facilities.
- Do incineration or stabilization of the residue after disposal as the method of evaporation and concentration.
- Do incineration of the residue after disposal as the method of agglomeration and precipitation.
- Take care of incinerate or stabilization after treatment, purified by means of Separation& # 8226distillation& # 8226extractio& # 8226filtration& # 8226pyrolysis

#### B. Special precautions for disposal

- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

### 14. TRANSPORT INFORMATION

#### A. UN No. (IMDG CODE/IATA DGR)

- Not available

#### B. Proper shipping name

- Not available

#### C. Hazard Class

- Not available

#### D. IMDG CODE/IATA DGR Packing group

- Not available

#### E. Marine pollutant

#### 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 : Not available
- EmS SPILLAGE SCHEDULE : Not available

### 15. REGULATORY INFORMATION

#### A. National and/or international regulatory information

##### POPs Management Law

- Not applicable

##### Information of EU Classification

###### \* Classification

- \* Classification

- [Distillates (petroleum), hydrotreated heavy paraffinic] : Carc. Cat. 2 R45

###### \* Risk Phrases

- [Distillates (petroleum), hydrotreated heavy paraffinic] : R45

###### \* Safety Phrase

- [Distillates (petroleum), hydrotreated heavy paraffinic] : S53, S45

##### 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

### 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

2016-04-19

### C. Revision number and Last date revised

Revision number : 0

Last date revised : 2016-04-19

### D. Other