

ZIC M9 4T 10W-40

1. IDENTIFICATION**A. Product name:**

ZIC M9 4T 10W-40

B. Recommended use of the chemical and restrictions on use:

- General use: Lubricants for an internal combustion engine
- Restriction on use: Not available

C. Information of manufacturer, supplier: **Company:**

SK Lubricants Co.,Ltd.

 Address:

26, Jong-ro, Jongno-gu, Seoul, Korea

 Emergency Telephone No:

1899-1147, 02-2121-6605

2. HAZARD IDENTIFICATION**A. Classification:**

None : None

B. Label element, including precautionary statements: **Symbols:****None** **Signal word(s):**

None

 Hazard statement(s):

None

 Precautionary statement(s):

- Ⓞ Prevention
- None

- ⊙ Response
 - None
- ⊙ Storage
 - None
- ⊙ Disposal
 - None

C. Other hazards which do not result in classification:

o NFPA Code : Health: 0, Flammability: 1, Reactivity: 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical identity	Common name, synonym	CAS number	Percentages(%)
Distillates (petroleum), hydrotreated heavy paraffinic	Emulsifiable oil	64742-54-7	75.0 ~ 83.0
Ethenylbenzene polymer with 2-methyl-1,3-butadiene	-	25038-32-8	11.0 ~ 12.0
Lubricant additive mixture	-	-	9.8 ~ 10.5
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	0.1 ~ 0.5

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:

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

D. Ingestion:

- About whether I should induce vomiting Take the advice of a doctor.
- Rinse your mouth with water immediately.

E. Most important symptoms/effect, acute and delayed:

- Not available

F. Indication of immediate medical attention and special treatment needed, if necessary:

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

5. FIRE-FIGHTING MEASURES

A. Suitable 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 equipment and precautions for firefighters:

- Move containers from fire area, if you can do without the risk.
- 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.

- Notify your local firestation and inform the location of the fire and characteristics hazard.
- 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:

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- 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.
- Refer to Engineering controls and personal protective equipment.
- Dealing only with a well-ventilated place.
- Operators should wear antistatic footwear and clothing.

- Do not inhale the steam prolonged or repeated.

B. Conditions for safe storage, including incompatibilities:

- Save in cool, dry and well ventilated place.
- Do not use damaged containers.
- Do not apply any physical shock to container.
- No open fire.
- Prevent static electricity and keep away from combustible materials or heat sources.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**A. Exposure limits in the air of the workplace, biological limit values:**

- 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. Appropriate 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: **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.

 Body protection:

- Wear appropriate clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance (physical state, colour etc):

- Appearance: Liquid
- Color: Transparent brown

B. Odour:

Mild petroleum odor

C. Odour threshold:

Not available

D. pH:

Not available

E. Melting point/freezing point:

Not available

F. Initial boiling point and boiling range:

≥ 300 °C

G. Flash point:

≥ 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:

≤ 0.1 kPa (20 °C)

L. Solubility(ies):

Not available

M. Vapour density:

≥ 5 (Air = 1)

N. Specific gravity:

0.85

O. Partition coefficient: n-octanol/water:

Not available

P. Auto-ignition temperature:

Not available

Q. Decomposition temperature:

Not available

R. Viscosity:

Approximately 14.0 cSt (100°C)

10. STABILITY AND REACTIVITY**A. Chemical stability:**

– This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactivity:

– 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 exposures:** **Inhalation exposure:**

– Not available

 Ingestion exposure:

– Not available

 Skin exposure:

– Not available

Eye exposure:

- 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

Specific target organ systemic toxicity–single exposure:

- Not available

Specific target organ systemic toxicity–repeated exposure:

- Not available

Aspiration hazard:

- Not available

C. Numerical measures of toxicity(such as acute toxicity estimate):

- Not available

12. ECOLOGICAL INFORMATION

A. Aquatic, terrestrial organisms toxicity:

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•distillation•extractio•filtration•pyrolysis

B. Disposal considerations(Specify disposal container and methods):

- 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 Number:**

- Not available

B. UN Proper Shipping Name:

- Not available

C. Transport hazard class(es):

- Not available

D. Packing group, if applicable:

- Not available

E. Environmental hazards:

- Not applicable

F. Special precautions for user:

- 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. Safety, health and environmental regulations specific for the product in question:**

- POPs Management Law
- Not applicable
- Information of EU 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. References and sources for data:

- 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. Originated date:

- 2015-06-19

C. Revision number and date:

- Revision number: 1
- Final revision data: 2015.10.01