

Material Safety Data Sheet (MSDS)

1. Chemical Product & Company Identification

A. Product Name : S-OIL POWER STEERING OIL

B. Intended Use

: HYDRAULIC FLUID

C. Manufacturer & Supplier information

○ Manufacturer : Kukdong Jeyen Co., Ltd (☎ +82-31-680-0505 Fax. +82-31-680-0507)

○ Address : #1173-4 Wonjeong-ri Poseung-eup Pyeongtaek-si Gyeonggi-do Korea Rep.

○ Supplier : S-OIL CORPORATION CO.,LTD,

○ Address : 192, Baekbeom-ro, Mapo-gu, Seoul 04196, Korea

2. Hazard Identification

A. Hazard Identification

1) Physicochemical : Not Classified

2) Health hazards :

- Acute toxicity (Inhalation: Dust/Mist) : Category 4

- Acute toxicity (Inhalation: Oral) : Category 4

3) Environmental hazards : Not Classified

B. Precautionary Statement(s) & Warning Label

1) Symbols



2) Signal Word : Warning

3) Hazard Statement(s)

H302 - Harmful if swallowed.

H332 - Harmful if inhaled.

4) Precautionary Statement(s)

■ Precautionary

P261 : Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 : Wash ... thoroughly after handling.

P270 : Do not eat, drink or smoke when using this product.

P271 : Use only outdoors or in a well-ventilated area.

■ Response

P301+P312 : IF SWALLOWED: immediately call a POISON CENTER or doctor/physician.

P304+P340 : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

■ Storage

No data available

■ Disposal

P501 : Dispose of contents/container to ...

C. Other hazards.

Chemicals Name	NFPA Ratings		
	Health	Fire	Reactivity
1. (DISTILLATES (PETROLEUM),HYDROTREATED HEAVY PARAFFINIC)	1	1	0
2. 2-6 Di-3-Butyl-p-cresol	2	1	0
3. TRADE SECRET (S1)	1	1	0

3. Composition / Information on ingredients

Chemical Name	Other name	CAS No.	%
1.(DISTILLATES(PETROLEUM),HYDROTREATED HEAVY PARAFFINIC)	Hydrotreated (mild) heavy paraffinic distillate	64742-54-7	90 ~ 99
2. 2-6 Di-3-Butyl-p-cresol	BUTYLATED HYDROXYTOLUENE	128-37-0	0.1 ~ 1
3. TRADE SECRET (S1)	-	-	0.1 ~ 1

4. First aid Measures

A. Eye Contact :

- Immediately flush eyes with plenty of water.
- Get medical attention.

B. Skin contact :

- Wash skin thoroughly with soap and water or use recognised skin cleanser.
- Remove contaminated clothing and shoes.
- Obtain medical attention if symptoms occur.

C. Inhalation :

- Move exposed person to fresh air. Keep person warm and at rest.
- If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel
- Obtain medical attention if symptoms occur.

D. Ingestion :

- Wash out mouth with water.
- Move exposed person to fresh air. Keep person warm and at rest.
- If material has been swallowed and the exposed person is conscious, give small quantities of water to drink.
- Do not induce vomiting unless directed to do so by medical personnel.
- Obtain medical attention if symptoms occur.

5. Fire Fighting Measures

A. Extinguishing media

- 1) Suitable extinguishing media
: Use an extinguishing agent suitable for the surrounding fire.
- 2) Unsuitable extinguishing media
: Do not use water jet.
- 3) Unusual fire (Big fire) : No data available

B. Unusual fire & Explosion hazard :

- 1) Hazardous combustion product :No data available
- 2) Fire & Explosion hazard : No data available

C. Special fire fighting procedure / protection of firefighters :

- 1) Small liquid spill : No data available
- 2) Large spillages : No data available

6. Accidental Release Measure

A. Personal precautions :

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment (see section 8).

B. Environmental precautions :

- 1) atmosphere release : No data available
- 2) soil release : No data available
- 3) underwater release : No data available

C. Spill cleanup methods

- 1) Small liquid spill : Stop leak if without risk. Move containers from spill area. Dilute with water & mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- 2) Large spillages : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with noncombustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and Storage

A. Handling

Put on appropriate personal protective equipment (see section 8).
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.
Workers should wash hands and face before eating, drinking and smoking.

B. Storage

Store in accordance with local regulations. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.
Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure Controls / Personal Protection

A. Exposure limit value :

1) (DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC)

- Korea : TWA : No data available
STEL : No data available
- ACGIH : STEL : No data available
TWA : No data available
- OSHA : No data available

2) 2-6 Di-3-Butyl-p-cresol

- Korea : TWA : No data available
STEL : No data available
- ACGIH : STEL : No data available
TWA : No data available
- OSHA : No data available

3) TRADE SECRET (S1)

- Korea : TWA : No data available
STEL : No data available
- ACGIH : STEL : No data available
TWA : No data available
- OSHA : No data available

B. Engineering Control :

No data available

C. Personal protective equipment

1) Respiratory protection

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

2) Eye protection

Safety glasses Eye protection with side shields.

3) Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

4) Skin / Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

9. Physical and Chemical properties

- A. Appearance : Liquid/ Red dear color
- B. Odor : No data available
- C. Odor Threshold : No data available
- D. pH : No data available
- E. Boiling Point / Freezing Point : No data available
- F. Pour Point : -15.0°C
- G. Flash Point : 216°C
- H. Evaporation rate : No data available

- I. Flammability Limit (Lower/Upper) : No data available
- J. Vapor pressure : No data available
- K. Solubility in water : be insoluble in water
- L. Vapor density No data available
- M. Specific Gravity(15°C) : approximately 0.863 kg/m₃
- N. Partition Coefficient (n-Octanol/Water) : No data available
- O. Auto-ignition temperature : No data available
- P. Thermal decomposition : No data available
- Q. Viscosity : 32.0 cSt (40°C)
- R. Molecular weight : No data available

10. Stability and Reactivity

- A. Stability** : The product is stable.
- B. Possibility of hazardous reaction** : Under normal conditions of storage and use, hazardous reactions will not occur.
- C. Condition to avoid** : Heat, sparks, open flame sources, such as.
- D. Incompatible material** : combustible materials, reducing agents
- E. Hazardous decomposition products** : Under normal conditions of storage and use,

11. Toxicological Information

A. Route of exposure

- 1) Inhalation : No known significant effects or critical hazards
- 2) Ingestion : No known significant effects or critical hazards.
- 3) Skin contact : No known significant effects or critical hazards.
- 4) Eye contact : No known significant effects or critical hazards.

B. Delayed, Immediate, and Chronic effects of Short-and Long-term Exposure

1) (DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC)

- Acute toxicity
 - Oral : LD50 > 15000 mg/kg Rat
 - Skin : LD50 > 5000 mg/kg Rabbit
 - Inhalation : Mist LC50 2.18 mg/l 4 hr Rat
- Skin contact : Mild(rabbit)
- Eye contact or Irritation : stimulated(rabbit)
- Sensitization : Non-sensitization(Guinea pig)
- Carcinogenicity
 - KOSHA : Not listed
 - OSHA : Not listed
 - NTP : Not listed
 - IARC (GROUP) : Not listed
 - ACGIH : Not listed
 - EC: Carc. 1B(IP346 DMSO extract as measured by the way, except when there is less than 3%)
- Mutagenesis : No data available
- Reproductive toxicity : No data available

- Specified target organ general toxicity – single exposure : No data available
- Specified target organ general toxicity – repetitive exposure : No data available
- Aspiration respiratory organs hazard : No data available

2) 2-6 Di-3-Butyl-p-cresol

- Acute toxicity
 - Oral : No data available
 - Skin : No data available
 - Inhalation : No data available
- Skin contact : No data available
- Eye contact or Irritation : No data available
- Sensitization : No data available
- Carcinogenicity :
 - KOSHA : Not listed
 - OSHA : Not listed
 - NTP : Not listed
 - IARC (GROUP) : Not listed
 - ACGIH : Not listed
 - EC: Not listed
- Mutagenesis : No data available
- Reproductive toxicity : No data available
- Specified target organ general toxicity – single exposure : No data available
- Specified target organ general toxicity – repetitive exposure : No data available
- Aspiration respiratory organs hazard : No data available

3) TRADE SECRET (S1)

- Acute toxicity
 - Oral : No data available
 - Skin : No data available
 - Inhalation : No data available
- Skin contact : No data available
- Eye contact or Irritation : No data available
- Sensitization : No data available
- Carcinogenicity :
 - KOSHA : Not listed
 - OSHA : Not listed
 - NTP : Not listed
 - IARC (GROUP) : Not listed
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- Reproductive toxicity : No data available
- Specified target organ general toxicity – single exposure : No data available
- Specified target organ general toxicity – repetitive exposure : No data available
- Aspiration respiratory organs hazard : No data available

12. Ecological Information

A. Ecotoxicity

1) (DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC)

- Fishes : LC50 > 5000 mg/l 96 hr *Oncorhynchus mykiss*
- Crustacea : EC50 > 1000 mg/l 48 hr *Daphnia magna*
- Seaweeds : EC50 > 1000 mg/l 96 hr *Scenedesmus subspicatus*

2) 2-6 Di-3-Butyl-p-cresol

- Fishes : No data available
- Crustacea : No data available
- Seaweeds : No data available

3) TRADE SECRET (S1)

- Fishes : No data available
- Crustacea : No data available
- Seaweeds : No data available

B. Persistence and Degradability

1) (DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC)

- Persistence : log Kow 3.9 ~ 6(Estimation)
- Degradability : 6 % (28 DAY)

2) 2-6 Di-3-Butyl-p-cresol

- Persistence : No data available
- Degradability : No data available

3) TRADE SECRET (S1)

- Persistence : No data available
- Degradability : No data available

C. Bio accumulation

1) (DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC)

- Accumulation : No data available

2) 2-6 Di-3-Butyl-p-cresol

- Accumulation : No data available

3) TRADE SECRET (S1)

- Accumulation : No data available

D. Mobility in Soil : No data available

E. Other Information : Fishes : NOEC(Pimephales promelas) >5000 mg/L/7day

13. Disposal Consideration

A. Disposal method :

Disposal according to local regulations.

The generation of waste should be avoided or minimised wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

B. Disposal instrution : No data available

C. Waste code : No data available

14. Transportation Information

A. UN classificaiton : Not regulated

B. Proper Shipping name : No data available

C. Class/division : No data available

D. Packing group : No data available

15. Regulatory Information

A. Regulation

1) (DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC)

– 1. E.U : Hazard symbols – Carc. Cat. 2; R45

Risk phrases : R45

Safety phrases : S53, S45

– 2. U.S

OSHA regulation (29 CFR1910.119) : No

CERCLA 103 regulation(40 CFR 302.4) : No

EPCRA 302 regulation(40 CFR355.30) : No

EPCRA 304 regulation(40 CFR355.40) : No

EPCRA 313 regulation(40 CFR372.65) : No

2) 2-6 Di-3-Butyl-p-cresol

– 1. E.U : Hazard symbols – No

Risk phrases : No

Safety phrases : No

– 2. U.S

OSHA regulation (29 CFR1910.119) : No

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EPCRA 302 regulation(40 CFR355.30) : No

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3) TRADE SECRET (S1)

– 1. E.U : Hazard symbols – No

Risk phrases : No

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– 2. U.S

OSHA regulation (29 CFR1910.119) : No

CERCLA 103 regulation(40 CFR 302.4) : No

EPCRA 302 regulation(40 CFR355.30) : No

EPCRA 304 regulation(40 CFR355.40) : No

EPCRA 313 regulation(40 CFR372.65) : No

16. Other Information

The information presented herein is believed to be factual as it has been derived from the works from the works and opinions of persons believed to be qualified experts; however, nothing contained in information is to be taken as a warrant or representation for which KUKDONGJYEN Co., LTD. Bears legal responsibility. The user should review any recommendation in the specific context of the intended use to determine whether they are appropriate.

A. Issue date :

1998.12.03

B. Last revision :

2017.03.02