

Material Safety Data Sheet (MSDS)

1. Chemical Product & Company Identification

A. Product Name : S-OIL SUPER COOLANT LONGLIFE

○ Part Numbers : 00000-00294

B. Intended Use

: Engine Coolant for Automobiles

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 :

Specific target organ toxicity following repeat exposure : Category 2

3) Environmental hazards : Not Classified

B. Precautionary Statement(s) & Warning Label

1) Symbols



2) Signal Word : Caution

3) Hazard Statement(s)

H373 - May causes damage to organ(central nervous system, respiratory tract, heart) through prolonged or repeated exposure.

4) Precautionary Statement(s)

■ Precautionary

P260 : Do not breathe dust/fume/gas/mist/vapours/spray.

■ Response

P314 : Get medical advice/attention if you feel unwell.

■ Storage : Not Classified

■ Disposal

P501 : Dispose of contents and container in accordance with applicable regulations.

C. Other hazards.

| Chemicals Name | NFPA Ratings | | |
|--------------------|--------------|------|------------|
| | Health | Fire | Reactivity |
| 1. Ethylene Glycol | 0 | 1 | 0 |
| 2. WATER | 0 | 0 | 0 |

| | | | |
|-------------------------------|---|---|---|
| 3. Sebacic Acid | 0 | 1 | 0 |
| 4. BUSINESS SECRET(S1) | 0 | 1 | 0 |

3. Composition / Information on ingredients

| Chemical Name | Other name | CAS No. | % |
|-------------------------------|---------------------------------------|-----------|-----------|
| 1) Ethylene Glycol | 1,2-Ethanediol 1,2-Dihydroxyethane | 107-21-1 | 88 ~ 95 % |
| 2) Water | Dihydrogen Oxide | 7732-18-5 | 2 ~ 5 % |
| 3) Sebacic Acid | Decanedioic acid | 111-20-6 | Max 2 % |
| 4) BUSINESS SECRET(S1) | - | - | Max 4 % |

4. First aid Measures

A. Eye Contact :

Move to fresh air. Flush thoroughly with water at least 15 minutes.
Get medical assistance.

B. Skin contact :

Wash contact areas with soap and water.
Remove contaminated clothing and shoes.
Get medical aid if irritation develops and persists.
Wash clothing before reuse.

C. Inhalation :

If inhaled, remove to fresh air.
If not breathing give artificial respiration.
Get medical aid.

D. Ingestion :

Potential for aspiration if swallowed.
Get medical aid immediately.
Do not induce vomiting unless directed to do so by medical personnel.
Never give anything by mouth to an unconscious person.
If vomiting occurs naturally, have victim lean forward.

E. Likely Acute or Delayed symptoms/Effects :

1) Inhalation

Short term exposure : Irritation, Sleepinss, Headache, Dizziness, Blood disorder.
Long term exposure : Irritation, Headache.

2) Skin contact

Short term exposure : Vomiting, Gastraigia, Headache, Dizziness, Sleepinss, Hallucination, Convulsions, Coma,
Allergic reaction.
Long term exposure : Irritation, Allergic reaction

3) Eye contact

Short term exposure : Irritation
Long term exposure : No data available

4) Ingestion

Short term exposure : Vomiting, Gastralgia, Headache, Dizziness, Sleepiness, Hallucination, Convulsions, Coma.

Long term exposure : Kidney trouble

F. Emergency measure / notes to physician

: Support vital functions. Correct for dehydration and manage fluid balance.

Administer ethanol (orally or by IV (intravenously)) or fomepizole (4-methylpyrazole or fomepizole) therapy by IV as an antidote to inhibit the formation of toxic metabolites.

5. Fire Fighting Measures

A. Extinguishing media :

1) Suitable extinguishing media

: Fog, foam, dry Chemical powder

2) Unsuitable extinguishing media

: No data available

3) Unusual fire (Big fire)

: Do use extinguishing media with Water fog.

B. Unusual fire & Explosion hazard :

1) Hazardous combustion product : CO (carbon monoxide), CO₂ (carbon dioxide)

2) Fire & Explosion hazard : Slightly flammable to flammable in presence of open flames and sparks, of heat.

Non-flammable in presence of shocks.

C. Special fire fighting procedure / protection of firefighters :

Wear self-contained breathing apparatus for firefighting if necessary.

6. Accidental Release Measure

A. Personal precautions :

Shut off all sources of ignition.

Wear self-contained breathing apparatus.

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 : Use a non-combustible material like sand to soak up the product and place into a container for later disposal.

2) Large spillages : No data available

7. Handling and Storage

A. Handling

Keep away from heat.

Keep away from sources of ignition.

Empty containers pose a fire risk.

Evaporate the residue under a fume hood.

Ground all equipment containing material.

Do not ingest.

Do not breathe gas/fumes/vapor/spray.

Wear suitable protective clothing.

If ingested, seek medical advice.

Immediately and show the container or the label.

Keep away from incompatibles such as oxidizing agents, acids, alkalis.

B. Storage

Keep container tightly closed.

Keep container in a cool.

Well-ventilated area.

8. Exposure Controls / Personal Protection

A. Exposure limit value :

1) ETHYLENE GLYCOL

Korea : TWA : C 100

STEL : -

ACGIH : VTL-TWA : 100 mg/m³ 10 mg/m³ (aerosol only)

VTL-STEL : -

OSHA : No data available

2) WATER

Korea : TWA : No data available

STEL : No data available

ACGIH : VTL-TWA : No data available

VTL-STEL : No data available

OSHA : No data avail

3) Sebacic Acid

Korea : TWA : No data available

STEL : No data available

ACGIH : VTL-TWA : No data available

VTL-STEL : No data available

OSHA : No data avail

4) BUSINESS SECRET(S1)

Korea : TWA : No data available

STEL : No data available

ACGIH : VTL-TWA : No data available

VTL-STEL : No data available

OSHA : No data avail

B. Engineering Control :

Adequate ventilation (localize ventilation) should be provided in workplaces.

Use non sparking tools.

C. Personal protective equipment

1) Respiratory protection

Prevent inhalation of the solvents.

If required to control exposure, use only suitable respirators and components tested and approved under appropriate government standards such as NIOSH.

2) Eye protection

Wear approved chemical safety glasses or goggles where eye exposure is reasonably probable.

Eye wash fountain is recommended.

3) Hand protection

Wear protective gloves.

Butyl rubber gloves are recommended.

4) Skin / Body protection

Wear protective cloths.

9. Physical and Chemical properties

A. Appearance : Physical state - liquid, Color - Blue

B. Odor : Softly peculiar smell

C. Odor Threshold : No data available

D. pH : 7.0 ~ 9.0

E. Melting Point / Freezing Point : -34 °C (50% solution)

F. Boiling Point / range : 173 °C / More than 150 °C

G. Flash Point : More than 111 °C

H. Evaporation rate : No data available

I. Flammability Limit (Lower/Upper) : 15.3% / 3.2%

J. Vapor pressure : 0.05 mmHg (20 °C)

K. Solubility in water : Soluble

L. Vapor density (Air=1) : About 4

M. Specific Gravity : 1.110 ~ 1.140

N. Partition Coefficient (n-Octanol/Water) : No data available

O. Auto-ignition temperature : More than 390 °C

P. Thermal decomposition : No data available

Q. Viscosity : 36.01cst (15 °C), 18.09cst (20 °C)

R. Molecular weight : Not Applicable / Mixture

10. Stability and Reactivity

A. Stability : Stable under normal temperatures and pressures.

B. Possibility of hazardous reaction : Has not been reported.

C. Condition to avoid : Ignition source.

Excess heat, flame.

D. Incompatible material : Oxidizing agents, acid, alkalis.

E. Hazardous decomposition products : Hydrocarbon compounds.

11. Toxicological Information

A. Route of exposure

1) Inhalation : No data available

2) Ingestion : No data available

3) Skin contact : No data available

4) Eye contact : No data available

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

1) ETHYLENE GLYCOL

- Acute toxicity
 - Oral : LD50 7712 mg/kg Rat
 - Skin : LD50 3500 mg/kg Mouse
 - Inhalation : Steam LC50 2.5 mg / l 6 hr Rat
- Skin contact : Skin - Rabbit(Ethylene glycol) Result: No skin irritation
- Eye contact or Irritation : Eyes - Rabbit(Ethylene glycol) Result: Mild eye irritation - 24 h
- Sensitization : No data available
- Carcinogenicity :
 - KOSHA : Not listed
 - OSHA : Not listed
 - NTP : Not listed
 - IARC (GROUP) : Not listed
 - ACGIH : A4
 - EC : Not listed
- Mutagenesis : No data available
- Reproductive toxicity : Laboratory experiments have shown teratogenic effects. Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.
- Specified target organ general toxicity - single exposure : No data available
- Specified target organ general toxicity - repetitive exposure : May cause damage to organs through prolonged or repeated exposure. - Kidney
- Aspiration respiratory organs hazard : No data available

2) WATER

- Acute toxicity
 - Oral : LD50 90000mg/kg Rat
 - 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) Sebacic Acid

- Acute toxicity
 - Oral : LD50 13475mg/kg Rat
 - Skin : No data available
 - Inhalation : Dust LD50 4500 mg/m³ Rat
- Skin contact : Rabbit- skin - slight irritation
- Eye contact or Irritation : Rabbit - eyes - Irritation
- 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

4) BUSINESS SECRET(S1)

- Acute toxicity
 - Oral : LD50 2000 mg/kg Rat
 - Skin : LD50 2000 mg/kg Rabbit
 - 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

12. Ecological Information

A. Ecotoxicity

1) ETHYLENE GLYCOL

- Fishes : No data available
- Crustacea : LC50MIN100mg/l48hrDaphnia magna(OECD Guideline 202, GLP)
- Seaweeds : No data available

2) WATER

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

3) Sebacic Acid

- Fishes : LC50 993.789 mg/l 96 hr
- Crustacea : LC50 1078.932 mg/l 48 hr
- Seaweeds : EC50 681.937 mg/l 96 hr

4) BUSINESS SECRET(S1)

- Fishes : LC50 MIN 100mg/l 96hr Pimephales promelas
- Crustacea : LC50 MIN 100mg/l 48hr Daphnia magna
- Seaweeds : No data available

B. Persistence and Degradability

1) ETHYLENE GLYCOL

- Persistence : No data available
- Degradability : BOD 0.78mg/l COD 1.19mg/l BOD5/COD 0.66

2) WATER

- Persistence : log Kow - 1.38
- Degradability : No data available

3) Sebacic Acid

- Persistence : log Kow 2.19
- Degradability : No data available

4) BUSINESS SECRET(S1)

- Persistence : log Kow -2.27
- Degradability : No data available

C. Bio accumulation

1) ETHYLENE GLYCOL

- Accumulation : BCF 200

2) WATER

- Accumulation : No data available

3) Sebacic Acid

- Accumulation : No data available

4) BUSINESS SECRET(S1)

- Accumulation : No data available

D. Ozone layer hazard : Not applicable

E. Mobility in Soil : No data available

F. Other Information : No data available

13. Disposal Consideration

A. Disposal method : Dispose in accordance with all applicable regulations.

B. Disposal instruction : No data available

C. Waste code : No data available

14. Transportation Information

14.1 UN number

ADR/RID: -

IMDG: -

IATA: -

14.2 UN proper shipping name

ADR/RID : Not regulated as dangerous goods

IMDG : Not regulated as dangerous goods

IATA : Not regulated as dangerous goods

14.3. Transport hazard class(es)

ADR/RID: -

IMDG: -

IATA: -

14.4. Packing group

ADR/RID: -

IMDG: -

IATA: -

14.5. Environmental hazards

ADR/RID: -

IMDG: -

IATA: -

14.6. Special precautions for user

No data available

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available

15. Regulatory Information

A. Regulation

1) ETHYLENE GLYCOL

E.U : Hazard symbols : Acute Tox. 4 *

Risk phrases : H302

Safety phrases : S2

U.S

OSHA regulation (29 CFR1910.119) : No

CERCLA 103 regulation(40 CFR 302.4) : 2267.95kg 5000lb

EPCRA 302 regulation(40 CFR355.30) : No

EPCRA 304 regulation(40 CFR355.40) : No

EPCRA 313 regulation(40 CFR372.65) : Yes

US. Toxic Substances Control Act : Listed

CEPA - Domestic Substances List (DSL) : Listed

2) WATER

E.U : Hazard symbols : No

Risk phrases : No

Safety phrases : No

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

US. Toxic Substances Control Act : Listed

CEPA - Domestic Substances List (DSL) : Listed

3) Sebacic Acid

E.U : Hazard symbols : No

Risk phrases : No

Safety phrases : No

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

US. Toxic Substances Control Act : Listed

CEPA - Domestic Substances List (DSL) : Listed

4) BUSINESS SECRET(S1)

E.U : Hazard symbols : No

Risk phrases : No

Safety phrases : No

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

US. Toxic Substances Control Act : Listed

CEPA - Domestic Substances List (DSL) : Listed

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 this information is to be taken as a warrant or representation for which **KUKDONG JEYEN 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 :

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B. Last revision :

2017. 06. 01 (Rev. 4) - Accordance with GHS regulation