

# MATERIAL SAFETY DATA SHEET

## S-OIL 7 BRAKE FLUID DOT-3

Date of the previous version: 2021-07-01(Ver. 2.1)

Revision Date: 2025-02-19

Version 3.0

### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1. Product identifier

Product name S-OIL 7 BRAKE FLUID DOT-3  
Pure substance/mixture Mixture

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Brake fluid & Clutch Fluid, hydraulic fluid

#### 1.3. Details of the supplier of the safety data sheet

Supplier S-OIL CORPORATION  
192, Baekbeom-ro, Mapo-gu,  
Seoul 04196, Korea

#### For further information, please contact:

Contact Point KD Finechem Co., Ltd.  
E-mail Address yc0103@kdfinechem.com

#### 1.4. Emergency telephone number

Korea Tel. +82-31-680-0505

### 2. HAZARDS IDENTIFICATION

#### 2.1. Classification of the substance or mixture

##### GHS Classification

Serious eye damage/eye irritation: Category 1 (H318)

#### 2.2. Label elements

##### GHS label elements, including precautionary statements

Symbol(s) GHS05

Signal Words Danger



#### 2.3. GHS Hazard Statements

H318: Causes serious eye damage.

#### 2.4. GHS Precautionary Statements

Prevention P264+P265: Wash hands thoroughly after handling. Do not touch eyes.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses if present and easy to do - continue rinsing.  
P317: Get emergency medical help.

Storage Not Classified.  
Disposal Not Classified.

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#### 2.5. Other hazards

**Physical-Chemical Properties** Contaminated surfaces will be extremely slippery.

**Environmental properties** Should not be released into the environment

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1. Mixture

Chemical Name	CAS-No	EC-No	Weight %
1. 3,6,9,12-tetraoxotridecanol	23783-42-8	245-883-5	5-15
2. 2-(2-(2-butoxyethoxy) ethoxy) ethanol	143-22-6	205-592-6	25-35
3. Di Ethylene Glycol	111-46-6	203-872-2	30-40
4. 2-(2-(2-methoxyethoxy) ethoxy) ethanol	112-35-6	203-962-1	20-30

**Additional information** No data available.

### 4. FIRST AID MEASURES

#### 4.1. Description of first-aid measures

**General advice** Consult a physician.  
Show this safety data sheet to the doctor in attendance.

**Eye contact** Flush eyes with water as a precaution.

**Skin contact** Wash off with soap and plenty of water.  
Consult a physician.

**Inhalation** If breathed in, move person into fresh air.  
If not breathing, give artificial respiration.

**Ingestion** Never give anything by mouth to an unconscious person.  
Rinse mouth with water.  
Consult a physician.

**Protection of First-aiders**  
No data available.

#### 4.2. Most important symptoms and effects, both acute and delayed

**Eye contact** Not classified.

**Skin contact** Not classified.

**Inhalation** Not classified.

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Ingestion Not classified.

#### **4.3. Indication of immediate medical attention and special treatment needed, if necessary**

**Notes to physician** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

### **5. FIRE-FIGHTING MEASURES**

#### **5.1. Extinguishing media**

**Suitable extinguishing media** co-ordinate firefighting measures to the fire surroundings water spray, alcohol resistant foam, dry extinguishing powder, Carbon dioxide (CO<sub>2</sub>), ABC powder. Foam. Water spray or fog.

**Unsuitable extinguishing media** Do not use a solid water stream as it may scatter and spread fire.

#### **5.2. Special hazards arising from the substance or mixture**

**Special Hazard** Combustible. Vapors are heavier than air, spread along floors and form explosive mixtures with air.

**Hazardous combustion products** In case of fire may be liberated: Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>)

#### **5.3. Advice for fire-fighters**

**Special protective equipment for fire-fighters** In case of fire and/or explosion do not breathe fumes.  
Fight fire with normal precautions from a reasonable distance.  
Wear self-contained breathing apparatus.

**Other information**

### **6. ACCIDENTAL RELEASE MEASURES**

#### **6.1. Personal precautions, protective equipment, and emergency procedures**

**General Information** For non-emergency personnel  
Avoid contact with skin, eyes, and clothes.  
Do not breathe vapors/spray.

#### **6.2. Environmental precautions**

**General Information** Keep away from drains, surface, and ground water.

#### **6.3. Methods and material for containment and cleaning up**

**Methods for containment** Covering of drains.

**Methods for cleaning up** Absorb with liquid-binding material  
(sand, diatomaceous earth, acid- or universal binding agents).

#### **6.4. Reference to other sections**

**Personal Protective Equipment** See Section 8 for more detail.

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Waste treatment See section 13.

#### 7. HANDLING AND STORAGE

##### 7.1. Precautions for safe handling

**Advice on safe handling** Provision of sufficient ventilation.

**Prevention of fire and explosion** No data available

**Hygiene measures** Wash hands before breaks and after work.  
Keep away from food, drink, and animal feeding stuffs.

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

**Technical measures/Storage conditions** Keep container tightly closed. Store in a dry place. Hygroscopic.  
Protect against external exposure, such as: humidity  
Recommended storage temperature: 15 – 25 °C

**Incompatible substances or mixtures** Observe hints for combined storage.

**Materials to Avoid** Strong oxidizing agents.

##### 7.3. Specific end uses

**Recommendations** Brake fluid & Clutch Fluid, hydraulic fluid

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1. Control parameters** **Exposure limits**  
No Data available

##### 8.2. Exposure controls

###### Occupational Exposure Controls

**Engineering Measures** Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

###### **Personal Protective Equipment**

**General Information** Protective engineering solutions should be implemented and in use before personal protective equipment is considered. The personal protective equipment (PPE2) recommendations apply to the product ITSELF. In case of mixtures or formulations, it is suggested that you contact the relevant PPE suppliers.

**Respiratory protection** None under normal use conditions. When workers are facing concentrations above the exposure limit, they must use appropriate certified respirators. Respirator with combination filter for vapors/particulate (EN 14387): Type A/P1. Warning! filters have a limited use duration. The use of breathing apparatus must comply strictly with the manufacturer's instructions and the regulations governing their choices and uses.

**Eye Protection** If splashes are likely to occur, wear: Safety glasses with side-shields. EN 166.

**Skin and body protection** Long sleeved clothing. Wear suitable protective clothing. Protective shoes or boots. Type 4/6.

**Hand Protection** Hydrocarbon-proof gloves. Fluorinated rubber. Nitrile rubber. In case of prolonged

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contact with the product, it is recommended to wear gloves complying with EN 420 and EN 374 standards, protecting at least for 480 minutes and having a thickness of 0.38 mm at least. These values are indicative only. The level of protection is provided by the material of the glove, its technical characteristics, its resistance to the chemicals to be handled, the appropriateness of its use and its replacement frequency. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

#### Environmental exposure controls

**General Information** The product should not be allowed to enter drains, water courses or the soil.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1. Information on basic physical and chemical properties

Color		Amber (Yellow)	
Physical State @20°C		Liquid	
Odor		product specific	
<b>Property</b>	<b>Values</b>	<b>Remarks</b>	<b>Method</b>
pH	8.0 – 9.5		
Boiling point/boiling range	> 240°C		
Flash point	> 130 °C		Cleveland Open Cup (COC)
Evaporation rate		No information available	
Flammability Limits in Air		No information available	
Vapor Pressure		No information available	
Vapor density		No information available	
Density	1.040 ~ 1.060 g/cm <sup>3</sup>	@ 20 °C	
Water solubility	Soluble		
Solubility in other solvents		No information available	
log Pow		No information available	
Autoignition temperature	> 200 °C		
Viscosity, kinematic	< 1300 cst	@ -40 °C	
Explosive properties	3.0 ~ 15%		
Oxidizing Properties	Not applicable		
Possibility of hazardous reactions	Not applicable		

#### 9.2. Other information

### 10. STABILITY AND REACTIVITY

#### 10.1. Reactivity

**General Information** No hazardous reactions if stored and handled as prescribed/indicated.  
Corrosion to metals: No corrosive effect on metal.  
Formation of flammable gases: Forms no flammable gases in the presence of water.

#### 10.2. Chemical stability

**Stability** Stable under recommended storage conditions.

#### 10.3. Possibility of hazardous reactions

**Hazardous Reactions** No hazardous reactions when stored and handled according to instructions.

#### 10.4. Conditions to Avoid

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**Conditions to Avoid** Avoid open flames.

#### 10.5. Incompatible Materials

**Materials to Avoid** Strong acids, Strong oxidizing agents, Strong bases, Aldehydes, Aluminum

#### 10.6. Hazardous Decomposition Products

**Hazardous Decomposition Product** Hazardous combustion products: see section 5.

### 11. TOXICOLOGICAL INFORMATION

#### 11.1. Information on toxicological effects

##### Acute toxicity Local effects Product Information

**Skin contact** Data are not available.  
**Eye contact** Causes serious eye damage.  
**Inhalation** Data are not available.  
**Ingestion** Data are not available.

##### Acute toxicity - Component Information

Chemical name	Oral	Dermal	Inhalation
1. 3,6,9,12-tetraoxotridecanol	LD50 2000 mg/kg bw / Rat (IUCLID)	LD50 2000 mg/kg Rat (SIDS)	-
2. 2-(2-(2-butoxyethoxy) ethoxy) ethanol	LD50 >3980 mg/kg bw / Rat (IUCLID)	LD50 7400 mg/kg bw / Rabbit (IUCLID)	-
3. Di Ethylene Glycol	LD50 12,565 mg/kg bw / Rat male, female	LD50 11,890 mg/kg bw / Rabbit	-
4. 2-(2-(2-methoxyethoxy) ethoxy) ethanol	LD50 5,300 mg/kg bw / Rat male, female	LD50 2,000 mg/kg bw / Rabbit male	-

##### Sensitization

**Sensitization** Shall not be classified as a respiratory or skin sensitizer.

##### Specific effects

**Carcinogenicity** This product is not classified carcinogenic.  
**Mutagenicity** This product is not classified as mutagenic.  
**Reproductive toxicity** This product does not present any known or suspected reproductive hazards.

##### Repeated Dose Toxicity

**Sub chronic toxicity** Shall not be classified as a specific target organ toxicant (repeated exposure).

##### Target Organ Effects (STOT)

**Target Organ Effects (STOT)** Shall not be classified as a specific target organ toxicant (single exposure).

##### Other information

**Other adverse effects** No data available.

### 12. ECOLOGICAL INFORMATION

#### 12.1. Toxicity

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1) Acute toxicity

Chemical name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish
1. 3,6,9,12-tetraoxotridecanol	-	-	LC50> 10000 mg/L 96 hr Brachydanio rerio

2) Chronic Toxicity

No information available.

**Effects on terrestrial organisms**

No information available.

**12.2. Persistence and degradability**

**General Information**

No information available.

**Component Information**

- 3,6,9,12-tetraoxotridecanol: Persistence: -0.6 log Kow
- 2-(2-(2-butoxyethoxy) ethoxy) ethanol: Degradability: BOD5/COD 0.16
- Di Ethylene Glycol: Accumulation: Persistence: -1.47 log Kow
- 2-(2-(2-methoxyethoxy) ethoxy) ethanol: Persistence: -1.46 log Kow

**12.3. Bio accumulative potential**

**Product Information**

No information available.

**log Pow**

No information available.

**Component Information**

- 3,6,9,12-tetraoxotridecanol: Accumulation: 3.16 (SIDS)
- 2-(2-(2-butoxyethoxy) ethoxy) ethanol: Accumulation: 0.046
- Di Ethylene Glycol: Accumulation: 100 3 BSAF
- 2-(2-(2-methoxyethoxy) ethoxy) ethanol: Accumulation: 0.046 (HSDB)

**12.4. Mobility in soil**

**Soil**

No information available.

**Air**

Loss by evaporation is limited.

**Water**

soluble.

**12.5. Results of PBT and vPvB assessment**

**PBT and vPvB assessment**

No information available.

**12.6. Other adverse effects**

**General Information**

No information available

**13. DISPOSAL CONSIDERATIONS**

**13.1. Waste treatment methods**

**Waste from Residues / Unused Products**

Should not be released into the environment. Do not empty into drains. Dispose of in accordance with all applicable national environmental laws and regulations. Where possible recycling is preferred to disposal or incineration

**Contaminated packaging**

Empty containers should be taken to an approved waste handling site for

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recycling or disposal.

**Other information**

Refer to section 8 for safety and protective measures for disposal personnel.

**14. TRANSPORT INFORMATION****ADR/RID** Not regulated**IMDG/IMO** Not regulated**ICAO/IATA** Not regulated**ADN** Not regulated**15. REGULATORY INFORMATION****15.1. Safety, health, and environmental regulations/legislation specific for the substance or mixture****International Inventories****TSCA** All ingredients are listed in the inventory.**KECL** All ingredients are listed in the inventory.**Legend****TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**KECL** - Korean Existing and Evaluated Chemical Substances**Further information****European Union (EU)**Restrictions according to REACH, Annex XVII (<https://echa.europa.eu/substances-restricted-under-reach>)

2-(2-(2-butoxyethoxy) ethoxy) ethanol - Entry 3, Entry 75

Di Ethylene Glycol - Entry 3

List of substances subject to authorization (REACH, Annex XIV)/SVHC - candidate list

Not listed

Seveso Directive 2012/18/EU (Seveso III)

Not listed

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

Not listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

Not listed

Water Framework Directive (WFD)

Not listed

Regulation on the marketing and use of explosives precursors

Not listed

Regulation on drug precursors

Not listed

Regulation on substances that deplete the ozone layer (ODS)

Not listed

Regulation concerning the export and import of hazardous chemicals (PIC)

Not listed

Regulation on persistent organic pollutants (POP)

Not listed

Other information

Directive 94/33/EC on the protection of young people at work.

Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

**USA & CANADA**

OSHA regulation (29 CFR1910.119): Not Listed

CERCLA 103 regulation (40 CFR 302.4): Not Listed

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EPCRA 302 regulation (40 CFR355.30): Not Listed  
EPCRA 304 regulation (40 CFR355.40): Not Listed  
EPCRA 311 & 312 regulation (40 CFR370): Not Listed  
EPCRA 313 regulation (40 CFR372.65): Not Listed  
US. Toxic Substances Control Act: Listed  
CWA (Clean Water Act): This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).  
CALIFORNIA PROPOSITION 65: Not Listed  
U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
1. 3,6,9,12-tetraoxotridecanol	Not Listed	Not Listed	Not Listed
2. 2-(2-(2-butoxyethoxy) ethoxy) ethanol	Not Listed	Not Listed	Not Listed
3. Di Ethylene Glycol	Not Listed	Not Listed	Listed
4. 2-(2-(2-methoxyethoxy) ethoxy) ethanol	Not Listed	Not Listed	Not Listed

CEPA - Domestic Substances List (DSL): Listed

#### 15.2. Chemical Safety Assessment

Chemical Safety Assessment

No information available

#### 16. OTHER INFORMATION

Abbreviations, acronyms

Legend Section 8

Revision Date:

2025-02-19

Revision Note

\*\*\* Indicates updated section.

This safety data sheet serves to complete but not to replace the technical product sheets. The information contained herein is given in good faith and is accurate to the best of knowledge at the date indicated above. It is understood by the user that any use of the product for purposes other than those for which it was designed entails potential risk. The information given herein in no way dispenses the user from knowing and applying all provisions regulating his activity. The user bears sole liability for the precautions required when using the product. The regulatory texts indicated herein are intended to aid the user to fulfil his obligations. This list is not to be considered complete and exhaustive. It is the user's responsibility to ensure that he is subject to no other obligations than those mentioned.

End of the safety data sheet