

SAFETY DATA SHEET

XTeer Brake Fluid DOT-4

Date of issue: 2017-06-14

Revision date: 2017-06-14

Version: R0001.0002

1. IDENTIFICATION

A. Product name

- XTeer Brake Fluid DOT-4

B. Recommended use and restriction on use

- General use : Hydraulic fluid for hydraulic transmission of the car braking systems
- Restriction on use : Not available

C. Manufacturer / Supplier / Distributor information

- Company name : Hyundai Oilbank Co., Ltd.
- Address : 20F, Yonsei Severance Bldg., Tongil-ro 10-gil, Jongno-gu, Seoul, Korea
- Dept. : Production&Technology Team
- Telephone number : 02-2004-3000
- Emergency telephone number : 02-2004-3000

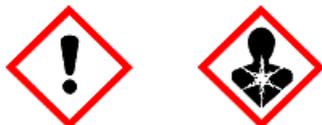
2. HAZARD IDENTIFICATION

A. GHS Classification

- Acute toxicity (dermal) : Category5
- Skin corrosion/irritation : Category3
- Serious eye damage/irritation : Category2A
- Reproductive toxicity : Category2
- Specific target organ toxicity(Repeated exposure) : Category1

B. GHS label elements

○ Hazard symbols



○ Signal words

- Danger

○ Hazard statements

- H313 May be harmful if contact with skin.
- H316 Cause mild skin irritation.
- H319 Causes serious eye irritation
- H361 Suspected of damaging fertility or the unborn child
- H372 Causes damage to organs through prolonged or repeated exposure (Refer Section SDS 11)

○ Precautionary statements

1) Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.

- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P281 Use personal protective equipment as required.

2) 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.
- P308+P313 If exposed or concerned: Get medical advice/attention.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P314 Get medical advice/attention if you feel unwell.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.

3) Storage

- P405 Store locked up.

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

C. Other hazards which do not result in classification : (NFPA Classification)

○ NFPA grade (0 ~ 4 level)

- Health : 2, Flammability : 1, Reactivity : 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	-	30989-05-0	35~45
Polyethylene glycol monomethyl ether	-	9004-74-4	10~20
2-(2-(2-methoxyethoxy)ethoxy)-ethanol	Ethanol, 2-[2-(2-methoxyethoxy)ethoxy]- ; Triethylene glycol monomethyl ether ; 2-[2-(Methoxyethoxy)ethoxy]ethanol ; Decan-1-ol, 3,6,9-trioxa- ; Methoxytriethyleneglycol ; Triethylene glycol monomethyl ether ; Methoxytriglycol ; 3,6,9-Trioxa-1-decanol ; 3,6,9-	112-35-6	10~20
Triethylene glycol butyl ether	-	143-22-6	10~20
2,2'-Oxybisethanol	bis(2-hydroxyethyl) ether ; b,b'-Dihydroxydiethyl ether ; 1,5-Dihydroxy-3-oxapentane ; Diethyleneglykol ; 2,2'-Dihydroxydiethyl ether ; 3-Oxypentane-1,5-diol ; Ethylene diglycol ; 2,2'-Oxydiethanol ; Bis(2-hydroxyethyl) ether ; 2-(2-Hydroxyethoxy)ethanol ;	111-46-6	10~20
Additive	-	-	0.1~0.3

4. FIRST AID MEASURES

A. Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms (flare, irritate) occur.
- Remove contact lenses if worn.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.
- Get medical attention immediately.

C. Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.

D. Ingestion contact

- About whether I should induce vomiting Take the advice of a doctor.
- Rinse your mouth with water immediately.
- Get medical attention 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.
- If exposed or concerned, get medical attention/advice.

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

- Cool containers with water until well after fire is out.
- Avoid inhalation of materials or combustion by-products.
- 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

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Remove all sources of ignition.
- Do not direct water at spill or source of leak.
- Avoid skin contact and inhalation.
- Keep unauthorized people away, isolate hazard area and deny entry.

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

- Avoid contact with incompatible materials.
- Comply with all applicable laws and regulations for handling
- Get the manual before use.
- Dealing only with a well-ventilated place.
- Do not inhale the steam prolonged or repeated.
- Contaminated work clothing should not be allowed out of the workplace.

B. Conditions for safe storage, including any incompatibilities

- Keep in the original container.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- Prevent static electricity and keep away from combustible materials or heat sources.
- Collected them in sealed containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

- ACGIH TLV**
 - Not available
- 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**

- Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	
- Appearance	Liquid
- Color	Amber
B. Odor	Not available
C. Odor threshold	Not available
D. pH	8.0~8.4
E. Melting point/Freezing point	Not available
F. Initial Boiling Point/Boiling Ranges	> 255 °C
G. Flash point	125 °C
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	3.0% / 15%
K. Vapour pressure	< 0.1mmHg (20°C)
L. Solubility	Soluble (water)
M. Vapour density	Not available
N. Specific gravity(Relative density)	1.043~1.046
O. Partition coefficient of n-octanol/water	Not available
P. Autoignition temperature	> 200°C
Q. Decomposition temperature	Not available
R. Viscosity	Not available
S. Molecular weight	Not available

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)
 - Cause mild skin irritation.
 - Causes serious eye irritation

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

- **Acute toxicity**
 - * **Oral - >5000mg/kg**
 - [Polyethylene glycol monomethyl ether] : LD50 = 22000 mg/kg Rat
 - [2-(2-(2-methoxyethoxy)ethoxy)-ethanol] : LD50 > 3980 mg/kg Rat
 - [Triethylene glycol butyl ether] : LD50 = 5300 mg/kg Rat
 - [2,2'-Oxybisethanol] : LD50 = 12565 mg/kg Rat (HSDB)
 - * **Dermal - ATE MIX : 2000mg/kg < ATEmix <= 5000mg/kg**
 - [Polyethylene glycol monomethyl ether] : LD50 = 20000 mg/kg Rabbit
 - [2-(2-(2-methoxyethoxy)ethoxy)-ethanol] : LD50 7400 mg/kg Rabbit
 - [Triethylene glycol butyl ether] : LD50 = 2000 mg/kg Rabbit
 - [2,2'-Oxybisethanol] : LD50 = 11890 mg/kg Rabbit (HSDB)
 - * **Inhalation - ATE MIX : Not available**
 - Not available
- **Skin corrosion/irritation**
 - Cause mild skin irritation.
- **Serious eye damage/irritation**
 - Causes serious eye irritation
- **Respiratory sensitization**
 - Not available
- **Skin sensitization**
 - Not available
- **Carcinogenicity**
 - * **IARC**
 - Not available
 - * **OSHA**
 - Not available
 - * **ACGIH**
 - Not available
 - * **NTP**
 - Not available
 - * **EU CLP**
 - Not available
- **Germ cell mutagenicity**
 - Not available
- **Reproductive toxicity**
 - Suspected of damaging fertility or the unborn child
- **STOT-single exposure**
 - Not available
- **STOT-repeated exposure**
 - Causes damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
- **Aspiration hazard**
 - Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

- **Fish**
 - [2-(2-(2-methoxyethoxy)ethoxy)-ethanol] : LC50 10000 mg/l 96 hr *Leuciscus idus* (DIN 38412 Teil L15, IUCLID)
 - [2,2'-Oxybisethanol] : LC50 = 75200 mg/l 96 hr *Pimephales promelas* (ECOTOX)
- **Crustaceans**
 - [2-(2-(2-methoxyethoxy)ethoxy)-ethanol] : EC50 500 mg/l 48 hr *Daphnia magna* (EG Richtlinie 79/831/EWG, C.2, IUCLID)
- **Algae**
 - [2-(2-(2-methoxyethoxy)ethoxy)-ethanol] : ErC50 500 mg/l 72 hr *Scenedesmus subspicatus* (IUCLID)

B. Persistence and degradability

- **Persistence**

- [Polyethylene glycol monomethyl ether] : log Kow -2 (Estimate)
- [2-(2-(2-methoxyethoxy)ethoxy)-ethanol] : log Kow -1.46
- [2,2'-Oxybisethanol] : log Kow -1.47

○ **Degradability**

- [Triethylene glycol butyl ether] : BOD5/COD = 0.16

C. Bioaccumulative potential

○ **Bioaccumulative potential**

- [Polyethylene glycol monomethyl ether] : BCF 3.162 (Estimate)
- [2-(2-(2-methoxyethoxy)ethoxy)-ethanol] : BCF 0.046 (HSDB)
- [2,2'-Oxybisethanol] : BCF = 100 3 (Leuciscus idus melanotus(Fish, fresh water), 0.05mg/l)

○ **Biodegradation**

- [2-(2-(2-methoxyethoxy)ethoxy)-ethanol] : 100 (%) 31 day (OECD TG 302 B, IUCLID)
- [Triethylene glycol butyl ether] : Biodegradability = 77 (%) 6 day
- [2,2'-Oxybisethanol] : Biodegradability = 31 (%) 28 day (Aerobic, other bacteria: Abwasser, nicht adaptiert)

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.

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)

- Not applicable

B. Proper shipping name

- Not applicable

C. Hazard Class

- Not applicable

D. IMDG Packing group

- Not applicable

E. Marine pollutant

- Not applicable

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.
- Air transport(IATA): Not subject to IATA regulations.

- 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**
 - [Triethylene glycol butyl ether] : Xi; R41
 - [2,2'-Oxybisethanol] : Xn; R22
 - * **Risk Phrases**
 - [Triethylene glycol butyl ether] : R41
 - [2,2'-Oxybisethanol] : R22
 - * **Safety Phrase**
 - [Triethylene glycol butyl ether] : S2, S26, S39, S46
 - [2,2'-Oxybisethanol] : S2, S46
- 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

- 2017-06-14

C. Revision number and Last date revised

- 1 times, 2017-06-14

D. Other

- This SDS is prepared according to the Globally Harmonized System (GHS).