

SAFETY DATA SHEET

According to OSHA Hazcom Standard 29 CFR 1910.1200

XTeer Brake Fluid DOT-4 (ENG)

Date of issue: 2017-06-14

Revision date: 2023-08-30

Version: 2.0

1. IDENTIFICATION

A. Product name

- XTeer Brake Fluid DOT-4 (ENG)

B. Recommended use and restriction on use

- General use : Brake Fluid
- Restriction on use : Not available

C. Manufacturer / Supplier / Distributor information

o Manufacturer information

- Company name : HD HYUNDAI OILBANK
- Address : 17-10, Mabuk-ro 240beon-gil, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea
- Emergency telephone number : 02-500-4500

o Supplier/Distributor information

- Company name : HD HYUNDAI OILBANK
- Address : 17-10, Mabuk-ro 240beon-gil, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea
- Emergency telephone number : 02-500-4500

2. HAZARD IDENTIFICATION

A. GHS Classification

- Serious eye damage/irritation : Category2
- Reproductive toxicity : Category2
- Specific target organ toxicity(Repeated exposure) : Category2
- Aspiration hazard : Category2

B. GHS label elements

o Hazard symbols



o Signal words

- Warning

o Hazard statements

- H305 May be harmful if swallowed and enters airways
- H319 Causes serious eye irritation
- H361 Suspected of damaging fertility or the unborn child
- H373 May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)

o 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 dust/fume/gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

2) Response

- P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

- 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.
- P314 Get medical advice/attention if you feel unwell.
- P331 Do NOT induce vomiting.
- 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

- Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	Ethanol,2-[2-(2-methoxyethoxy)ethoxy]-, 1,1',1"-triesther with boric acid (H3BO3)	30989-05-0	45 ~ 55
Triethylene glycol butyl ether	BTG	143-22-6	10 ~ 20
Tetraethylene glycol methyl ether	2,5,8,11-Tetraoxatridecan-13-ol(7CI,8CI,9CI)	23783-42-8	10 ~ 20
2,2'-Oxybisethanol	Bis(b-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	5 ~ 15
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-Trioxadecanol ;	112-35-6	5 ~ 15

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.
- Wash contaminated clothing thoroughly before re-using.
- Get medical attention immediately.

C. Inhalation contact

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

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.
- If swallowed, large amounts of water to drink and do not induce vomiting.

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

- Avoid use of water jet for extinguishing
- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray

B. Specific hazards arising from the chemical

- Causes serious eye irritation
- May be harmful if swallowed and enters airways
- May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
- Suspected of damaging fertility or the unborn child

C. Special protective actions for firefighters

- Avoid inhalation of materials or combustion by-products.
- Cool containers with water until well after fire is out.
- Do not approach the tank surrounded by fire until it is extinguished.
- In case of conflagration, use automatic fire sprinkler. Major fire may require withdrawal, allowing the object itself to burn.
- Keep unauthorized personnel out.

6. ACCIDENTAL RELEASE MEASURES

A. Personal precautions, protective equipment and emergency procedures

- Do not touch spilled material. Stop leak if you can do it without risk.
- Handle the damaged containers or spilled material after wearing appropriate protective equipment
- Move container to safe area from the leak area.
- Must work against the wind, let the upwind people to evacuate.
- Remove all sources of ignition.

B. Environmental precautions

- If large amounts have been spilled, inform the relevant authorities.
- Prevent runoff and contact with waterways, drains or sewers.

C. Methods and materials for containment and cleaning up

- Appropriate container for disposal of spilled material collected.
- Dike for later disposal.
- Disposal of waste shall be in compliance with the Wastes Control Act
- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notify the central and local government if the emission reach the standard threshold.

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Avoid contact with incompatible materials.
- Avoid direct physical contact.
- Comply with all applicable laws and regulations for handling
- Dealing only with a well-ventilated place.
- Do not handle until all safety precautions have been read and understood.

B. Conditions for safe storage, including any incompatibilities

- Avoid direct sunlight.
- Check regularly for leaks.
- Do not apply any physical shock to container.
- Do not apply direct heat.
- Do not use damaged containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

- **ACGIH TLV**
 - Not applicable
- **OSHA PEL**
 - Not applicable

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

C. Individual protection measures, such as personal protective equipment

- **Respiratory protection**
 - Any air-purifying respirator with a full facepiece and an organic vapor canister.
 - Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
 - Any chemical cartridge respirator with organic vapor cartridge(s).
 - Consider warning properties before use.
 - 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.
 - Respiratory protection is ranked in order from minimum to maximum.
 - Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- **Eye protection**
 - Provide an emergency eye wash station and quick drench shower in the immediate work area.
 - Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- **Hand protection**
 - Wear appropriate chemical resistant glove.
- **Skin protection**
 - Wear appropriate chemical resistant protective 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	7.0 ~ 7.0
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)	1.050 ~ 1.080
O. Partition coefficient of n-octanol/water	Not available
P. Autoignition temperature	> 200°C
Q. Decomposition temperature	Not available
R. Viscosity	< 1,300 cSt (-40°C)
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 : Accumulation of electrostatic charges, Heating, Flames and hot surfaces
- Avoid contact with incompatible materials and condition.

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**
 - May be harmful if swallowed and enters airways
- **Oral**
 - Not available
- **Eye/Skin**
 - Not available

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

- **Acute toxicity**
 - * **Oral**
 - Product (ATEmix) : 2000mg/kg < ATEmix <= 5000mg/kg
 - [Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate] : Rat LD50>5000 mg/kg bw Directive 84/449/EEC GLP (IUCLID)
 - [Triethylene glycol butyl ether] : LD50 5300 mg/kg Rat (HSDB)
 - [Tetraethylene glycol methyl ether] : LD50 2000 mg/kg Rat
 - [2,2'-Oxybisethanol] : LD50 300~2000 mg/kg (EU Harmonized Cat. 4) (ECHA)
 - [2-(2-(2-methoxyethoxy)ethoxy)-ethanol] : LD50 > 3980 mg/kg Rat
 - * **Dermal**
 - Product (ATEmix) : 2000mg/kg < ATEmix <= 5000mg/kg
 - [Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate] : Rat LD50>2000mg/kg bw GLP (IUCLID)
 - [Triethylene glycol butyl ether] : LD50 2000 mg/kg Rabbit (HSDB)
 - [Tetraethylene glycol methyl ether] : LD50 2000 mg/kg Rat
 - [2,2'-Oxybisethanol] : LD50 13300 mg/kg Rabbit (DFGOT) (NITE)
 - [2-(2-(2-methoxyethoxy)ethoxy)-ethanol] : LD50 7400 mg/kg Rabbit
 - * **Inhalation**
 - Product (ATEmix) : Not available
 - Not available
- **Skin corrosion/irritation**
 - Not available
- **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**
 - May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
- **Aspiration hazard**
 - May be harmful if swallowed and enters airways

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

- **Fish**
 - [Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate] : Salmo gairdneri 96hr LC50=590 mg/L GLP (IUCLID)
 - [Tetraethylene glycol methyl ether] : LC50 10000 mg/l 96 hr Brachydanio rerio (SIDS)
 - [2,2'-Oxybisethanol] : LC50 75222 mg/L 96 hr Pimephales promelas, NOEC > 40 mg/L 28 d Menidia peninsulae (ECHA)
 - [2-(2-(2-methoxyethoxy)ethoxy)-ethanol] : LC50 >10000 mg/l 96 hr Leuciscus idus (DIN 38412 Teil L15, IUCLID)
- **Crustaceans**
 - [Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate] : Daphnia magna 48hr EC50>1000 mg/L GLP (IUCLID)
 - [2,2'-Oxybisethanol] : NOEC 8590 mg/L 7 d Ceriodaphnia dubia (ECHA)
 - [2-(2-(2-methoxyethoxy)ethoxy)-ethanol] : EC50 >500 mg/l 48 hr Daphnia magna (EG Richtlinie 79/831/EWG, C.2, IUCLID)
- **Algae**
 - [Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate] : Selenastrum capricornutum 96hr EC50=430 mg/L GLP (IUCLID)
 - [2,2'-Oxybisethanol] : EC50 6500~13000 mg/L 96 hr Raphidocelis subcapitata (ECHA), NOEC > 100 mg/L 72 hr Raphidocelis subcapitata (OECD TG 201, GLP) (ECHA)
 - [2-(2-(2-methoxyethoxy)ethoxy)-ethanol] : ErC50 >500 mg/l 72 hr Scenedesmus subspicatus (IUCLID)

B. Persistence and degradability

- **Persistence**
 - [Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate] : -0.62 (ECHA), logk_{ow}=0.5 exp GLP (IUCLID)
 - [Tetraethylene glycol methyl ether] : log K_{ow} -0.6 (ICSC)
 - [2-(2-(2-methoxyethoxy)ethoxy)-ethanol] : log K_{ow} -1.46
- **Degradability**
 - [Triethylene glycol butyl ether] : BOD5/COD = 0.16

C. Bioaccumulative potential

- **Bioaccumulative potential**
 - [Tetraethylene glycol methyl ether] : BCF 3.16 (SIDS)
 - [2-(2-(2-methoxyethoxy)ethoxy)-ethanol] : BCF 0.046 (HSDB)
- **Biodegradation**
 - [Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate] : 6-10%, 28 days GLP (IUCLID)
 - [Triethylene glycol butyl ether] : 77 %, 6 day (Aerobic, other bacteria: BASF-Belebtschlamm)
 - [Tetraethylene glycol methyl ether] : 99 (%) 8 day (IUCLID)
 - [2,2'-Oxybisethanol] : 102%, 28 d, Readily biodegradable (OECD TG 301 A, GLP) (ECHA)
 - [2-(2-(2-methoxyethoxy)ethoxy)-ethanol] : 100 (%) 31 day (OECD TG 302 B, IUCLID)

D. Mobility in soil

- Not available

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- It shall be treated by incineration
- Oil water separation technology shall be applied as pre-waste treatment if it is applicable
- Stabilization and minimization treatment by incineration or similar method can be applied, if more than two kinds of designated wastes are in mixture state and it is impractical to separate them

B. Special precautions for disposal

- Anyone with business license number who generates industrial wastes shall treat the waste by him/herself or by entrusting to the legal entities who treat the wastes, recycle the wastes of others or install and operate the waste treatment facilities according to the Wastes Control Act
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG CODE/IATA DGR)

- Not applicable

B. Proper shipping name

- Not applicable

C. Hazard Class

- Not applicable

D. IMDG CODE/IATA DGR Packing group

- Not applicable

E. Marine pollutant

- Not applicable

F. Special precautions for user related to transport or transportation measures

- Air transport(IATA): Not subject to IATA regulations.
- 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. National and/or international regulatory information

- o POPs Management Law
 - [Tris[2-(2-(2-methoxyethoxy)ethoxy)ethyl] orthoborate] : Not applicable
 - [Triethylene glycol butyl ether] : Not applicable
 - [Tetraethylene glycol methyl ether] : Not applicable
 - [2,2'-Oxybisethanol] : Not applicable
 - [2-(2-(2-methoxyethoxy)ethoxy)-ethanol] : Not applicable
- o Information of EU Classification
 - * Classification
 - [Triethylene glycol butyl ether] : H318
 - [2,2'-Oxybisethanol] : H302
- o 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
- o **Rotterdam Convention listed ingredients**
 - Not applicable
- o **Stockholm Convention listed ingredients**
 - Not applicable
- o **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

- 2 times, 2023-08-30

D. Other

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