

# SAFETY DATA SHEET

according to regulation 1907/2006/EC (REACH) and 1272/2008/EC



**MOL-LUB Ltd.**

Trade name: **MOL DOT 4+ brake fluid**

Version: 4      Latest revision: 14. 05. 2018      Date of issue: 03. 02. 2015      Page: 1/(14)

## SECTION 1 Identification of the mixture and of the company/undertaking

1.1 Product identifier:

**MOL DOT 4+ brake fluid**

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

Relevant identified uses: brake fluid

Uses advised against: no data

1.3 Details of the supplier of the safety data sheet:

MOL-LUB Lubricant Production Trade and Service Limited Liability Company

H-2931 Almásfüzitő, Fő út 21., Hungary

Phone / Fax: +36 34 526 330 / +36 34 526 391

E-mail: kenoanyag@mol.hu

Request SDS of:

MOL-LUB Lubricant Production Trade and Service Limited Liability Company

Customer Service Center

H-2931 Almásfüzitő, Fő út 21., Hungary

Phone / Fax: +36 80 201 296 / +36 34 348 010

Responsible for SDS:

MOL-LUB Ltd. Csaba Horváth, head of SD, HSE & Business Support

Phone: +36 34 526 343; Mobile: +36 20 474 2644

e-mail: csahorvath@mol.hu

1.4 Emergency telephone number

Emergency telephone (07-15<sup>20</sup> h): +36 34 526 210 (CET) on workdays

Health Toxicological Information Service (ETTSZ 1096 Budapest, Nagyváradi tér 2.)

Tel.: 36 80 201 199 (0-24 h, free number).

National Health Toxicological Information Service:

## SECTION 2 Hazards identification

2.1 Classification of the mixture or substance

Hazard Class and Category:

Acute Tox. 4

Eye Irrit. 2

STOT RE 2

Hazard statement:

H302

H319

H373

Harmful if swallowed.

Causes serious eye irritation.

May cause damage to kidneys through prolonged or repeated exposure if swallowed.

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## 2.2 Label elements

Product identification: Trade name: **MOL DOT 4+ brake fluid**

Hazardous components:

Diethylene glycol (CAS: 111-46-6)

GHS Pictogram:



Signal word:

**Warning**

Hazard statement:

**H302** Harmful if swallowed.  
**H319** Causes serious eye irritation.  
**H373** May cause damage to kidneys through prolonged or repeated exposure if swallowed.

Supplemental hazard information: -

Precautionary statements – General:

**P101** If medical advice is needed, have product container or label at hand.  
**P102** Keep out of reach of children.

Precautionary statements – Prevention:

**P270** Do not eat, drink or smoke when using this product.  
**P280** Wear protective gloves, protective clothing, eye protection/face protection.

Precautionary statements - Response

**P301 + P312** IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.  
**P305 + P351 + P338** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
**P337 + P313** If eye irritation persists: Get medical advice/attention.  
**P308 + P313** IF exposed or concerned: Get medical advice/attention.

Precautionary statements – Storage: -

Precautionary statements – Disposal:

**P501** Dispose of contents/container in accordance with national regulation.

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Other liabilities for labelling:

Tactile warning of danger: Distribution for population.

Transport classification: see section 14.

## 2.3 Other hazards

The product does not contain any PBT or vPvB substance according to annex XIII of regulation (EC) 1907/2006.

## SECTION 3 Composition/information on ingredients

### 3.2 Mixtures

Chemical description: Mixture of glycols, glycol ethers, inhibitors.

Component(s) / Hazardous component(s):

Name	EU number	CAS number	Hazard classes and cat.	Hazard statements	Conc. % (m/m)
Triethylene glycol monobutyl ether	205-592-6	143-22-6	Eye Dam. 1	H318	max. 45
Diethylene glycol REACH Registr. Nr.: 01-2119457857-21	203-872-2	111-46-6	Acute Tox. 4 STOT RE 2	H302 H373	max. 25
2-(2-Methoxyethoxy) ethanol REACH Registr. Nr.: 01-2119475100-52	203-906-6	111-77-3	Repr. 2	H361d	0-<3
2-(2-butoxyethoxy) ethanol REACH Registr. Nr.: 01-2119475104-44	203-961-6	112-34-5	Eye Irrit. 2	H319	<5

The full text of each relevant H- phrase and Hazard classes and cat. see in Section 16.

## SECTION 4 First aid measures

### 4.1 Description of first aid measures

General information: Never give anything by mouth to an unconscious person, or never induce vomiting.

Inhalation: Remove the affected person to fresh air. If rapid recovery does not occur, obtain medical attention.

Skin contact: Remove contaminated clothing and wash skin with plenty of water, use soap. If irritation persists, obtain medical attention.

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Eye contact: Immediately rinse affected eyes for at least 15 minutes under running water with eyelids held open. Obtain medical (ophthalmologist) attention.

Ingestion: If swallowed rinse mouth, give to drink plenty of water. Get prompt medical attention. Do not induce vomiting, only under medical supervision

Protection of first-aid person: No individual specifications.

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

Serious eye irritation.

Over-exposure include central nervous system effects, abdominal discomfort, metabolic acidosis, headache and nausea.

If product is inhaled at elevated temperatures or as an aerosol it may irritate the respiratory tract and may cause systemic effects similar to ingestion.

Skin: may be absorbed through the skin.

Repeated contact may de-fat the skin and cause dermatitis.

Repeated exposure may cause kidney damage.

#### 4.3 Indication of any immediate medical attention and special treatment need

Treat according to symptoms (decontamination, vital functions).

## SECTION 5 Fire-fighting measures

Fire hazards:

Combustible.

#### 5.1 Extinguishing media

Suitable extinguishing media:

Water (water-fog or water spray), alcohol-resistant foam, carbon dioxide, dry chemical powder.

Unsuitable extinguishing media:

Water jet.

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

Hazardous combustion products:

On burning, fume and other toxic fumes / gases can be formed.

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## 5.3 Advice for fire-fighters

### Special protective equipment:

According to the existing fire-fighting regulations. Self-contained breathing apparatus.

### Further information:

Containers may rupture from gas generation if exposed to fire.

In case of fire, keep containers cool with water spray.

Collect contaminated fire fighting water separately. It must not enter drains.

Contaminated extinguishing water must be disposed of in accordance with official regulations.

## SECTION 6 Accidental release measures

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

Personal precautions: see Section 8.

Evacuate all non-essential personnel.

Danger of slipping on leaked out/spilled product.

Avoid contact with skin and eyes.

### 6.2 Environmental precautions:

Prevent spills from entering into natural water, soil and drains by containing the liquid.

Notify relevant authority.

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

On soil: Contain spilled liquid with sand, earth or other suitable absorbents. Recover free liquid by pumping. Dispose of according to local regulations.

On water: Confine the spillage. Notify local authorities according to regulations.

Flush contaminated area with plenty of water.

### 6.4 Reference to other sections

Personal precautions: see section 8.

Waste treatment methods: see section 13.

## SECTION 7 Handling and storage

### 7.1 Precautions for safe handling

Keep general measures applied for normal operations with chemicals and flammable.

Keep away from radiant heat and open flame.

Ensure thorough ventilation of stores and work areas.

Avoid building of mist and aerosol.

Take precautionary measures against static discharges.

Avoid contact with skin and eyes. Avoid prolonged breathing of oil vapours or mists.

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Ensure washing facilities after working hours and before breaks. Take off contaminated or oil-soaked clothing, wash with warm water and soap.

When using do not eat, drink or smoke.

Females of childbearing age and pregnant women should not come into contact with the product.

Handling temperature: no data

## 7.2 Conditions for safe storage, including any incompatibilities

Storage facilities must comply with regulations for storing of flammable liquids.

Store in cool, dry, well-ventilated area, in original, tightly closed containers.

Strong oxidizing agents, strong acids and alkalis be stored separately.

Material of storage tank are recommended: mild/stainless tanks fitted with a dry air breathing system or tight head steel drums.

Do not store in lined tank sor drums.

Storage temperature: max. 45°C

## 7.3 Specific end use(s)

Brake fluid.

## SECTION 8 Exposure controls / personal protection

Engineering control measures:

Adequate ventilation.

### 8.1 Control parameters:

EU limits

*2-(2-butoxyethoxy) ethanol*: CAS: 112-34-5

TWA (Long-term exposure limit) – 8 Hrs: 10 ppm

TWA (Long-term exposure limit) – 8 Hrs: 67,5 mg/m<sup>3</sup>

STEL (Short-term exposure limit) – 15 Min: 15 ppm

STEL (Short-term exposure limit) – 15 Min: 101,2 mg/m<sup>3</sup>

*2-(2-Methoxyethoxy) etanol*: CAS: 111-77-3      TWA (Time weighted average): 50,1 mg/m<sup>3</sup> EU2

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## 8.2 Exposure controls

### Personal protection:

Respiratory protection: Under normal conditions not required.

When concentrations in air may exceed the limits recommended to use a half face filter mask to protect from overexposure by inhalation. (organic vapor against filter: A-P2)

### Hand protection:

Protective gloves (chemical resistant) (EN 374).

Suitable materials, with prolonged, direct contact (recommended: protective index 6, corresponding > 480 minutes of permeation time according to EN 374): fluoroelastomer (FKM) – 0.7 mm coating thickness

Neoprene, PVC.

Polyethylene-Laminate (PE laminate) – ca. 0.1. mm coating thickness.

Suitable materials, short-term contact and/or splashes (recommended: at least protective index 2, corresponding > 30 minutes of permeation time according to EN 374):

nitrile rubber (NBR) – 0.4 mm coating thickness

Manufacturer's directions for use should be observed because of great diversity of types.

Note: Manufacturer's directions for use and the conditions of application should be observed.

### Eye protection:

Safety glasses with side-shields (frame goggles) (EN 166).

### Skin protection:

Protective clothing.

### Other special:

No data.

### Environmental exposure controls:

Do not discharge into drains/surface waters/groundwater.

## SECTION 9 Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance:

Physical state:

liquid

Colour (ASTM D 1500):

colorless-yellow (amber)

Odour:

typical

#### Change in physical state:

Solidification point (DIN 51583):

<-50°C

Boiling point (ASTM D1120):

270°C

Wet boiling point:

163°C

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## Others:

Flash point (COC) (DIN 51758):	> 93°C
Ignition temperature (DIN 51758):	no data
Autoignition temperature (DIN 51794):	>300°C
Decomposition temperature:	>300°C
Explosive properties:	not explosive
Oxidizing properties:	no data
Vapour pressure at 20°C:	<2 mbar
Density at 20°C:	1.04 g/cm <sup>3</sup>
Specific density at 20°C:	no data
Solubility in water at 15°C:	soluble
Solubility in polar solvents:	soluble
n-Octanol/water partition coefficient:	<2
Kinematic viscosity at 20°C (DIN 51562):	5 – 10 mm <sup>2</sup> /s
at -40°C:	1050 mm <sup>2</sup> /s
at 100°C:	2.34 mm <sup>2</sup> /s
pH:	7 – 11.5

## 9.2 Other information

no data available

## SECTION 10 Stability and reactivity

- |  |   |
|--|---|
| 10.1 Reactivity:                         | Dangerous reactivity not known.   |
| 10.2 Chemical stability:                 | No decomposition if stored and handled properly.  |
| 10.3 Possibility of hazardous reactions: | Glycol Ethers can form peroxides on storage.<br>Glycol Ethers can react with light metals with the evolution of hydrogen. |
| 10.4 Conditions to avoid:                | Direct heat or ignition sources. Do not distil to dryness without testing for peroxide formation.                         |
| 10.5 Incompatible materials:             | Mineral oils, strong oxidizing agents, strong acids.  |
| 10.6 Hazardous decomposition products:   | No dangerous decomposition products are formed under normal conditions. Hazardous combustion products: See Section 5.     |



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## SECTION 11 Toxicological information

### 11.1 Information on toxicological effects

Acute toxicity: Harmful if swallowed.

Oral: LD<sub>50</sub> (rat) > 5000 mg/kg

Dermal: > 3000 mg/kg

Inhalation: no data

Acute toxicity: irritation

Skin: not irritant (based on components)

Eye: irritant (OECD 405 based on test), causes serious eye irritation.

Respiratory or skin sensitisation: not sensitising (based on components)

Other information, specific effects:

Germ cell mutagenicity: not known, resp. not mutagen (based on components)

Carcinogenicity: not known, resp. not carcinogen (based on components)

Reproductive toxicity: not known, resp. no reproduction-damaging effect (based on components)

STOT-single exposure: not classified

STOT-repeated exposure: May cause damage to kidneys through prolonged or repeated exposure if swallowed.

Aspiration hazard: not classified

## SECTION 12 Ecological information

### 12.1 Toxicity

Aquatic organisms: Fish test (Leuciscus idus): LC<sub>50</sub> > 100 mg/l/96 h

Soil organisms: no data

Plants: no data

Effects on activated sludge: Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.

### 12.2 Persistence and degradability

Biodegradability: 100%, 21 days Easily degradable (OECD 302B).  
I admitted into adapted biological water treatment plants, no adverse effects on the degrading action of the live sludge are expected.

### 12.3 Bioaccumulative potential

log Pow: <2



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## SECTION 14      Transport information

Land transport:

	Road/ Railway	ADR/RID:	Not classified.
14.1.	UN number:	-	
14.2.	UN proper shipping name:	-	
14.3.	Transport hazard class(es):	-	
14.4.	Packing group:	-	
14.5.	Environmental hazards:	-	
14.6.	Special precautions for user:	-	

Waterways:

Inland waterways/ Sea transport      ADN/IMDG:      Not apply to the product.

Air transport:      ICAO / IATA:      Not apply to the product.

## SECTION 15      Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the mixture.  
This safety data sheet has been prepared according to Regulation (EC) No 1907/2006 (mod.: 2015/830/EU) and to Regulation (EC) 1272/2008.

15.2 Chemical safety assessment.  
not available

## SECTION 16      Other information

The information given in this data sheet is based on our best knowledge at the time of publication. The information is related only to this product and is intended to assist its safe transport, handling and use. The given physical and chemical parameters describe the product only for the purpose of safety requirements and therefore should not be construed as guaranteeing any specific property of the product or as being part of a product specification or any contract.

The manufacturer or supplier shall not take responsibility for any damages from the use other than recommended or other misuse of the product. It is the responsibility of the user to keep regulatory precautions and observe recommendations for safe use of the product.

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Source of data presented in this material safety data sheet:

- Test results of this product
- Material safety data sheets of product's components
- 1272/2008/EC regulation, Annex XVII. of REACH
- Relevant Hungarian regulation and EU directives

Classification for mixtures and used evaluation method according to regulation 1272/2008/EC (CLP)

Acute Tox. 4	H302	(calculated)
Eye Irrit. 2	H319	(based on test results)
STOT RE 2	H373	(calculated)

*The full text of each relevant H- phrase and Hazard classes and cat. in Section 3.:*

H302	Harmful if swallowed.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to kidneys through prolonged or repeated exposure if swallowed.
Acute Tox. 4	Acute toxicity Category 4
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Eye Irrit. 2	Serious eye damage/eye irritation Category 2
Repr. 2	Reproductive toxicity Category 2
STOT RE 2	Specific target organ toxicity – repeated exposure Category 2

Legend:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration Factor
BOD	Biological Oxygen Demand
Bw	Body Weight
C&L	Classification and Labeling
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging

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CMR	Carcinogenic, Mutagenic or toxic to Reproduction
COD	Chemical Oxygen Demand
CSA	Chemical Safety Assessment
CSR	Chemical Safety Report
DMEL	Derived Minimal Effect Level
DNEL	Derived No Effect Level
ECHA	European Chemicals Agency
Ec <sub>x</sub>	Effective Concentration x%
Ed <sub>x</sub>	Effective Dose x%
ELINCS	European List of Notified Chemical Substances
ErC50	EC50 in terms of reduction of growth rate;
ES	Exposure Scenario
ESIS	European Chemical Substances Information System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC <sub>x</sub>	Lethal Concentration x%
LD <sub>x</sub>	Lethal Dose x%
LOAEC	Lowest Observed Adverse Effect Concentration
LOAEL	Lowest Observed Adverse Effect Level
LOEC	Lowest Observed Effect Concentration
LOEL	Lowest Observed Effect Level
NOEC	No observed effect concentration
NOEL	No observed effect level
NLP	No-Longer Polymer
NOAEL	No Observed Adverse Effect Level
OECD	Organisation for Economic Cooperation and Development
PBT	Persistent Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SVHC	Substance of Very High Concern
UVCB	substance of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very Persistent and very Bio-accumulative

## Revision Indicators:

Section	Subject of change	Date	Version
1	Responsible for SDS	10.04.2015	2
2	Other hazards		
5	Fire hazards		
14	Transport information		

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## Revision Indicators:

Section	Subject of change	Date	Version
2 3 9 1-16	Hazards identification Composition/information on ingredients Physical and chemical properties Other corrections, revision modification according to 2015/830 /EU	06.12.2017	3
2.2 3 1-16	Label elements Composition/information on ingredients Other corrections	14.05.2018	4