

**Brake fluid  
Revline DOT 4**

Made on: 2015.02.03

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**SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

**1.1. Product identifier**

Trade name: Revline DOT 4

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

Identified uses: Revline DOT-4 is intended for hydraulic braking systems and clutches of cars, trucks, buses, trailers, motorcycles, battery-electric trucks, etc. as directed by the device user manuals.

Uses advised against: other uses are not recommended.

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

Manufacturer: Rafineria w Jaśle

Address: 40-007 Katowice, ul. Uniwersytecka 13

Phone/Fax No. +48 (13) 44 66 433

E-mail: [biurozarzadu@rwj.com.pl](mailto:biurozarzadu@rwj.com.pl)

Production plant

38-200 Jasło, ul. 3 Maja 101

(13) 44 66 316/(13) 44 66 315

[biuro@rwj.com.pl](mailto:biuro@rwj.com.pl)

**1.4. Emergency telephone number:**

Company contact phone no.: in working hours from 7.00 a.m till 3.00 p.m. +48 (13) 44 66 316

In case of emergency: 112 ( Emergency number), 998 ( Fire Brigade), 999 ( Ambulance Service)

**SECTION 2. HAZARDS IDENTIFICATION**

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

Hazards	According to Directive (EC) No.1272/2008 (CLP):	According to Council Directive 1999/45/EEC
Resulting from physicochemical properties:	Not classified	Not classified
For humans:	Not classified	Not classified
For environment:	Not classified	Not classified

**2.2. Label elements**

Pictogram:None

Signal word:None

Hazard statements:None

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**Precautionary statements:**

**S2**-Keep out of reach of children.

**S24**-Avoid contact with skin.

**S46**-If swallowed, seek medical advice immediately - show the packaging or label.

**2.3. Other hazards**

The product does not meet the PBT or vPvB criteria according to Annex XIII of REACH Regulation.

**SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS**

**3.1. Substances** – not applicable

**3.2. Mixtures:** mixture of diethylene glycol, alkyl ether and corrosion inhibitor.

Hazardous ingredients and its concentrations in the mixture:

<u>Substance name</u>	<u>CAS No/ EC No</u>	<u>REACH registration number</u>	<u>Concentration [% wt.]</u>	<u>Classification according to 67/548/EEC</u>	<u>Classification according to 1272/2008 (CLP)</u>
Diethylene glycol	01-2119457857-21-XXXX	111-46-6/ 203-872-2	3 < C < 5	Xn, R22	Acute Tox.4; H302
2-(2-(2-butoxyethoxy)ethoxy)ethanol	01-2119475107-38-XXXX	143-22-6/ 205-592-6	3 < C < 5	Xi, R41	Eye Dam. 1, H318

Description of R, H phrases is given in Section 16.

**SECTION 4. FIRST AID MEASURES**

**4.1. Description of first aid measures**

**Inhalation:**

In case of poisoning by inhalation provide access to fresh air. Call for medical help in case of no amelioration.

**Skin contact:**

Immediately remove contaminated/soaked clothes and shoes. Thoroughly wash contaminated skin with soapy water or mild detergent, and then rinse with water. Consult a doctor if irritation symptoms appear and persist.

**Eye contact:**

Flush the contaminated eyes with running water, remove contact lenses (if worn) and continue flushing for approx. 15 minutes. When flushing, keep the eyelids wide open and move the eyeball. Consult a doctor if symptoms appear and persist.

**Swallowing:**

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Move the victim to fresh air. Provide copious amounts of water to drink. In case of spontaneous vomiting, keep the victim in a forward leaning position with facet directed down. Call for medical help in case of no amelioration.

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

Dizziness, drowsiness, agitation, inebriation, narcosis, coma. Nausea, vomiting. Headache, disturbances of vision, loss of vision.

In the first period of poisoning after swallowing, symptoms similar to a state of alcohol intoxication: agitation, slurred speech, impaired balance and coordination.

**4.3. Indication of any immediate medical attention and special treatment needed**

Do not induce vomiting and do not administer anything orally to an unconscious person. Show the material safety data sheet or the label/container to the medical staff. A person providing first aid in the area where vapour/fog concentration is unknown should be equipped with the appropriate respiratory protection.

Indications for a doctor: symptomatic treatment.

**SECTION 5. PROCEEDING IN CASE OF FIRE**

**5.1. Extinguishing media**

**Suitable extinguishing media:** carbon dioxide, dry powder, foam; water spray.

**Unsuitable extinguishing media:** water jet.

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

Not inflammable. Avoid breathing products being released in the fire environment. In the fire environment smokes containing carbon oxides and other unidentified thermal decomposition products of mineral oils are formed. Avoid breathing products being released in the fire environment - they may be hazardous for health.

**5.3. Advice for firefighters**

Proceed in accordance to procedures applicable for extinguishing chemical fire.

For large fires should be extinguished from a safe distance behind cover, using remote sprinkler. Containers exposed to fire or high temperature should be cooled by dispersed streams of water from a safe distance, if possible and safe remove from the danger area and continue spraying until complete cool. Do not allow the fire fighting sewage and residues penetrate into drains and waterways.

Remove wastewater and residue after firefighting in accordance with valid regulations. People participating in the fire-extinguishing action should be properly trained, equipped with a full protective clothing and a self-containing breathing apparatus.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

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

Use individual protection measures – see section 8 of the Safety Data Sheet.

Limit the access of bystanders to the endangered area until proper cleaning operations are finished. In the case of great leakage isolate the endangered area. Avoid contact with the eyes, skin and clothes.

Do not inhale vapours / mist. When released in an enclosed / confined spaces provide effective ventilation

**6.2. Environmental precautions**

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Prevent the product from penetrating drains, waters or soil. If it is possible and safe, stop or limit product release, (seal, shut off the fluid source, place the damaged container in an emergency container). Limit spreading of the great leakages by embanking the area.

Notify respective authorities in the case of release of large quantities of the product and environmental pollution.

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

Cover up small spillage with soil, sand, vermiculite or other absorbent material and collect in an appropriate, closed, labelled waste container. Pump off large amounts of liquid. Clean the contaminated area with water with detergent. Rinse residues with water. Larger amounts collected dispose according to the applicable regulations. If necessary, obtain help from specialist companies dealing with waste transport and utilisation in order to remove the product/absorbent material contaminated with the product.

### 6.4. Reference to other sections

For information on appropriate personal protection equipment see Section 8.

For information regarding waste disposal see Section 13.

## SECTION 7. HANDLING AND STORAGE

### 7.1. Precautions for safe handling

During use in closed areas provide effective ventilation. Avoid contact with eyes, skin, and clothing and inhalation of vapours / mist. Unused containers tightly closed. Essential hygiene rules should be observed: do not eat, drink or smoke during work, wash hands with soapy water after work/after break in work. Do not use contaminated clothing; immediately remove contaminated clothing and wash before reuse. Use individual protection measures in accordance with the information contained in section 8 of the Safety Data Sheet.

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

In a place of use and storage of the product, provide easy access to emergency equipment (in case of fire, release, etc.). Store should be stored in tightly sealed and properly labelled containers, in a cool, well ventilated place with a non-absorbing ground.

The product may be stored in storage tanks in accordance with applicable regulations.

Store far from heat sources, protect against mechanical contamination and water accumulation. Keep away from strong oxidisers.

### 7.3. Specific end use(s)

None.

## SECTION 8. EXPOSURE CONTROL AND PERSONAL PROTECTION EQUIPMENT

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### 8.1. Control parameters

TLV-TWA: 10 mg/m<sup>3</sup> aerosol at a workplace

TLV-STEL: not determined

Diethylene glycol

TLV-TWA: 15 mg/m<sup>3</sup>,

TLV-STEL: 50 mg/m<sup>3</sup>,

TLV-C: not determined

Concentration limits of substances in biological material: not determined

\*In conditions when vapours and fumes are formed - not applicable.

*Regulation of the Minister of Work and Social Policy dated June 6th, 2014 on the maximum occupational levels of factors hazardous to health at the workplace (Journal of Laws of 23 June 2014, item 817)*

### 8.2. Exposure controls

#### Appropriate engineering controls:

General ventilation and/or local fume hood in order to maintain hazardous agent concentration in air below acceptable limits. Local fume hood is preferred, since it enables emission control at source and prevents spreading throughout the working area.

#### Individual protection measures

The requirement for use and selection of appropriate personal protection measures should take into account the type of hazard posed by the product, workplace conditions and handling of product. Use protection measures offered by reputable manufacturers.

Personal protection measures should comply with the requirements specified in the standards and regulations.

#### Eye or face protection:

Protective goggles in tight casing resistant to chemicals. It is recommended to equip the workplace with a water shower to flush eyes.

#### Skin protection:

Hand protection: protective gloves are required to protect against petroleum products made of nitrile rubber or other gloves authorized by the manufacturer of gloves for work with this type of product.

Body protection: work clothing is required.

#### Respiratory protection:

Not required under normal conditions of use. In case of insufficient ventilation, wear a mask with approved A type filter-absorber. In the case of work in the limited space / insufficient oxygen content in the air, a large uncontrolled emissions, and in all circumstances when the mask with filter-absorber does not provide sufficient protection use self-contained respiratory equipment.

#### Thermal hazards:

Not found

#### Environmental exposure controls:

Consider using precautionary measures in order to protect the area around storage tanks.

Follow the standards regarding the permissible environmental pollution identified in the regulations in force.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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

a) Appearance	: Liquid, clear colour yellow
b) Odour	: ethereal, characteristic for glycols
c) Odour threshold	: Not determined
d) pH	: 7,5 - 11
e) Melting/solidification temperature	: <- 55°C
f) Initial boiling temperature and melting temperature range	: >230°C
g) Ignition point	: >130°C
h) Evaporation rate	: No data available
i) Flammability (solid, gas)	: Not applicable
j) Upper/lower flammability limit or upper/lower explosion limit	: No data available
k) Vapour pressure	: < 1Pa at 20°C
l) Vapour density	: Not determined
m) Relative density	: 1,03 - 1,08 g/cm <sup>3</sup> ( at 20°C)
n) Solubility	: Soluble in water.
o) Distribution coefficient n-octanol/ water	: log Pow < 2
p) Self-ignition point	: >300°C
q) Decomposition temperature	: No data available
r) Viscosity	: ≥ 1,5 mm <sup>2</sup> /s w 100°C
s) Explosive properties	: Not applicable
t) Oxidizing properties	: Not applicable

### 9.2. Other information

None

## SECTION 10. STABILITY AND REACTIVITY

### 10.1. Reactivity

The product is not reactive under normal usage and storage.

### 10.2. Chemical stability

The product is stable under normal ambient conditions, as well as under the expected temperature and under the expected pressure.

### 10.3. Possibility of hazardous reactions

Risk of explosion or inflammation in contact with strong oxidizing agents.

### 10.4. Conditions to avoid:

High temperature, open flame and other ignition sources.

### 10.5. Incompatible materials

Strong oxidisers

### 10.6. Hazardous decomposition products

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Not known. Hazardous thermal decomposition products – see subsection 5.2 of the safety data sheet.

## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Acute toxicity:** it is not required to classify the product as acute toxic

LD<sub>50</sub>: >2000 mg/kg (oral, rat)

**Skin corrosion/irritation:**

Classification criteria have not been met based on the available data.

**Serious eye damage/irritation:**

Basically, it does not cause eye irritation.

**Respiratory or skin sensitisation:**

Inhalation of vapours or mists may cause irritation to the respiratory system.

**Germ cell mutagenicity:**

Classification criteria have not been met based on the available data.

**Carcinogenicity:**

Classification criteria have not been met based on the available data.

**Reproductive toxicity:**

Classification criteria have not been met based on the available data.

**STOT – single exposure:**

No data available.

**STOT – repeated exposure:**

No data available.

**Aspiration hazard**

Not applicable.

## SECTION 12. ECOLOGICAL INFORMATION

### Hazard for environment

Product is not classified as hazardous for environment.

#### 12.1. Toxicity:

##### Water environment

For finished product no data available, data given for ethylene glycol

LC50 :> 100 mg/l 96 h *Leuciscus idus*

#### 12.2. Persistence and degradability

Readily biodegradable under oxygen conditions. There is evidence that the substance decomposes under non-oxygen conditions

#### 12.3. Bioaccumulative potential

No data available.

#### 12.4. Mobility in soil

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Mobile product.

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

According to Annex XIII of REACH Regulation, the product does not meet PBT or vPvB criteria.

**12.6. Other adverse effects**

No data available.

**SECTION 13. HANDLING OF WASTES**

**13.1. Waste treatment methods**

Comply with all applicable laws related to the disposal of dangerous substances. Do not dispose to water reservoir and sewage sludge. Avoid contamination of water and soil with concentrated product. In the case of accidental leakage, product should be diluted.

The Act of 14 December 2012 on wastes (*Dz.U. of year 2013, item 21, with amendments*)

Regulation of the Minister of Environment of 9 December 2014, on wastes catalogue (*Dz. U. 2014, item 1923*)

**Waste code:**16 01 03\* - brake fluids

**13.2. Packaging**

Recovery / recycling / utilisation of package wastes should be performed according to the applicable regulations.**NOTE:**Only completely emptied and cleaned packages may be returned for recycling.Use services of authorised companies.

*(Official Journal of 29<sup>th</sup> December 2014, item 1923). The Act of 13 June 2013 on packages and package wastes (Dz.U.item888)*

**SECTION 14. TRANSPORT INFORMATION**

The product is not a subject to transport regulations on hazardous goods included in ADR (road transport), RID (rail transport), IMDG (marine transport) and ICAO/IATA (air transport).



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14.1. UN number	:not applicable
14.2. UN Proper shipping name	:not applicable
14.3. Transport hazard class(es)	:not applicable
14.4. Packing group	:not applicable
14.5. Environmental hazards	:not applicable
14.6. Special precautions for users	:not applicable
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	:not applicable

## SECTION 15. REGULATORY INFORMATION

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

- Regulation (EC) No. 1907/2006 of the European Parliament of 18 December 2006 on registration, evaluation and authorisation of chemicals (REACH) as amended
- Regulation of the Commission (EC) No. 453/2010 of 20 May 2010 amending regulation (EC) No. 1907/2006 of the European Parliament and the Council of 18 December 2006 on registration, evaluation and authorisation of chemicals (REACH) as amended
- Regulation of the European Parliament and the Council (EC) No. 1272/2008 of 16 December 2008 on classification, labelling and packing substances and mixtures, amending and repealing directives 67/548/EEC and 1999/45/EC and amending regulation (EC) No. 1907/2006
- Regulation of the Minister of Health of 10 August 2012 on criteria and methods of classifying substances and mixtures (Journal of Laws of 2012 No 0 item 1018)
- Regulation of the Minister of Health of 23 December 2013 amending the Regulation on criteria and methods of classifying substances and mixtures (Journal of Laws of 2014, item 6)
- Regulation of the Minister of Health of 20 April 2012 on labelling packaging of dangerous substances and dangerous mixtures and some mixtures (Journal of Laws 12, item 445)
- Regulation of the Minister of Health of 23 January 2014 amending the Regulation on labelling packaging of dangerous substances and dangerous mixtures and some mixtures (Journal of Laws 2014, item 145)
- Regulation of the Minister of Health of 2 February 2011 on tests and measurements of factors harmful to life in the working environment (Journal of Laws of 2011, No. 33, item 166)
- Regulation of the Minister of Economy of 21 December 2005 on essential requirements for personal protection (Journal of Laws of 2005 No. 259, item 2173)
- Regulation of the Minister of Work and Social Policy dated June 6th, 2014 on the maximum occupational levels of factors hazardous to health at the workplace (Dz.U. 2014, item 817)
- Regulation of the Minister of Health of 30 December 2004 on occupational health and safety related to the presence of chemical agents in the workplace (Journal of Laws of 2005 No. 11, item 86)
- The Act of 14 December 2012 on wastes (Dz.U. of year 2013, item 21)
- The Act of 15 January 2015 on amendment of Act on wastes and other acts (Dz.U. item 122)
- Regulation of the Minister of Environment of 9 December 2014, on wastes catalogue (Dz. U. 2014, item 1923)

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- The Act of 13 June 2013 on packages and package wastes (Dz.U. item 888)
- Act of 25 February 2011 on chemicals and their mixtures (Journal of Laws of 2011 No. 63 item 322)

### 15.2. Chemical safety assessment

No data available for chemical safety assessment for substances included in a mixture.

## SECTION 16. OTHER INFORMATION

### 16.1. Update range

Not applicable.

### 16.2. Abbreviations and acronyms in the Safety Data Sheet

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CLP	The Regulation on classification, labelling and packaging; Regulation (EC) No 1272/2008
DNEL	Derived No Effect Level
DPD	Dangerous Preparations Directive 1999/45 / EC
DSD	Dangerous Substances Directive 67/548 / EEC
EC <sub>50</sub>	Concentration at which 50% inhibition of growth or growth rate is observed
ICAO	Technical Instructions for the Safe Transport of Dangerous Goods by Air
IATA	International Air Transport Association
IMDG	International Maritime Transport of Dangerous Goods
TLV-TWA	Threshold Limit Value
TLV-STEL	Threshold Limit Value, Short Term Exposure Limit
TLV-C	Ceiling exposure limit
LD <sub>50</sub>	Dose that will kill 50% of the test animals
LC <sub>50</sub>	Concentration that will kill 50% of the test animals
PBT	Persistent, bioaccumulative, and toxic (substance)
PNEC	Predicted No Effect Concentration
RID	Regulations Concerning the International Carriage of Dangerous Goods by Rail
(Q)SAR	Quantitative Structure Activity
UVCB	Unknown substances, of Variable Composition, or of Biological Origin
vPvB	very Persistent, very Bioaccumulative (substance)

### 16.3. The list of applicable R-phrases in Section 3

R22–Harmful if swallowed.

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R41 – Risk of serious damage to eyes

**16.4. The list of applicable H-phrases in Section 3**

H302- Harmful if swallowed.

H318 – Causes serious eye damage

**16.5. The list of applicable hazard categories in Section 3 according to DSD/DPD:**

Xi – irritant

Xn – harmful

**16.6. The list of applicable hazard categories in Section 3 according to CLP**

Acute Tox. 4 – Acute toxicity, cat.4

Eye Dam. 1 – Serious eye damage/ eye irritation, cat. 1

This Safety Data Sheet has been prepared based on data provided by the manufacturers of ingredients the product, according to the national legislation in force at the date of SDS update and owned knowledge. Employees who use the product should be trained on risks for health, hygiene requirements, the use of individual protection measures and actions preventing the accidents.

Safety data sheet is not a quality certificate for the product. All data presented in this sheet are to be taken only as a help in safe handling in transport, distribution, use and storage. They may be obsolete or insufficient for this product used in conjunction with other materials or in different applications than those specified in the Safety Data Sheet.

The user is obliged to follow all applicable standards and regulations and is also responsible for inappropriate use of information contained in this sheet or for an inappropriate use of the product.

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