



**Ferdinand Bilstein GmbH + Co. KG**

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

**1.1 Product identifier**

**febi 170166 Gear oil SAE 80W-90 (GL-4/5)  
Article number: 170166, 170167, 170168**

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

**1.2.1 Relevant uses**

Gearbox oil

**1.2.2 Uses advised against**

None known.

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

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**1.4 Emergency telephone number**

**Advisory body** +49 (0)89-19240 (24h) (English)

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture [REGULATION (EC) No 1272/2008]**

No classification.

**2.2 Label elements**

The product is required to be labelled in accordance with regulation (EC) No 1272/2008 (CLP).

**Hazard pictograms** none

**Signal word** none

**Hazard statements** none

**Precautionary statements** none

**Special labelling** EUH210 Safety data sheet available on request.

Contains: Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched). EUH208 May produce an allergic reaction.

**2.3 Other hazards**

**Physico-chemical hazards** No particular hazards known.

**Environmental hazards** Does not contain any PBT or vPvB substances.

**Other hazards** No particular hazards known.

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## SECTION 3: Composition / Information on ingredients

## Product-type:

3.2 The product is a mixture.

Range [%]	Substance
1 - < 5	Polysulfides, di-tert-Bu CAS: 68937-96-2, EINECS/ELINCS: 273-103-3, Reg-No.: 01-2119540515-43-XXXX GHS/CLP: Skin Sens. 1B: H317 - Aquatic Chronic 3: H412
1 - < 5	Methacrylate copolymer EINECS/ELINCS: Polymer GHS/CLP: Eye Irrit. 2: H319
1 - < 2,5	Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched) CAS: -, EINECS/ELINCS: 931-384-6, Reg-No.: 01-2119493620-38-XXXX GHS/CLP: Acute Tox. 4: H302 - Skin Sens. 1: H317 - Eye Dam. 1: H318 - Aquatic Chronic 2: H411

## Comment on component parts

Contains less than 3% w/w DMSO-extract (only for mineral oils)  
Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.  
For full text of H-statements and R-phrases: see SECTION 16.

## SECTION 4: First aid measures

## 4.1 Description of first aid measures

<b>General information</b>	Change soaked clothing.
<b>Inhalation</b>	Ensure supply of fresh air. In the event of symptoms seek medical treatment.
<b>Skin contact</b>	In case of contact with skin wash off immediately with plenty of water. Consult a doctor if skin irritation persists.
<b>Eye contact</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
<b>Ingestion</b>	Consult a doctor immediately. Do not induce vomiting. Rinse out mouth and give plenty of water to drink.

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

Allergic reactions

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

Treat symptomatically.  
Forward this sheet to the doctor.

## SECTION 5: Fire-fighting measures

## 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	foam, dry powder, water spray jet, carbon dioxide
<b>Extinguishing media that must not be used</b>	Full water jet.

## 5.2 Special hazards arising from the substance or mixture

Risk of formation of toxic pyrolysis products.  
Carbon monoxide (CO)  
Sulphur oxides (SOx).  
Nitrogen oxides (NOx).

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**5.3 Advice for firefighters**

Do not inhale explosion and/or combustion gases.

Use self-contained breathing apparatus.

Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

**SECTION 6: Accidental release measures**

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

High risk of slipping due to leakage/spillage of product.

Forms slippery surfaces with water.

**6.2 Environmental precautions**

Prevent spread over a wide area (e.g. by containment or oil barriers).

Do not discharge into the drains/surface waters/groundwater.

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

Take up with absorbent material (e.g. oil binder).

Dispose of absorbed material in accordance with the regulations.

**6.4 Reference to other sections**

See SECTION 8+13

**SECTION 7: Handling and storage**

**7.1 Precautions for safe handling**

No special measures necessary if used correctly.

Use only in well-ventilated areas.

Use solvent-resistant equipment.

Do not eat, drink or smoke when using this product.

After worktime and before work breaks the affected skin areas must be thoroughly cleaned.

Use barrier skin cream.

Cloths contaminated with product should not be kept in trouser pockets.

Take off contaminated clothing and wash before reuse.

Contaminated work clothing should not be allowed out of the workplace.

**7.2 Conditions for safe storage, including any incompatibilities**

Keep only in original container.

Prevent penetration into the ground.

Do not store together with oxidizing agents.

Keep container tightly closed.

Keep container in a well-ventilated place.

**7.3 Specific end use(s)**

See product use, SECTION 1.2



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**SECTION 8: Exposure controls / personal protection**

**8.1 Control parameters**

**Ingredients with occupational exposure limits to be monitored (GB)**

not applicable

**DNEL**

Substance
Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched), CAS: -
Industrial, inhalative, Long-term - systemic effects: 8,56 mg/m <sup>3</sup> /8h (ECHA CHEM).
Industrial, dermal, Long-term - systemic effects: 12,5 mg/kg/8h (ECHA CHEM).
general population, oral, Long-term - systemic effects: 0,25 mg/kg bw/day.
general population, dermal, Acute - local effects: 0,024 mg/cm <sup>2</sup> .
general population, dermal, Long-term - systemic effects: 6,25 mg/kg bw/day.
general population, inhalative, Long-term - systemic effects: 2,2 mg/m <sup>3</sup> .
Polysulfides, di-tert-Bu, CAS: 68937-96-2
Industrial, dermal, Long-term - systemic effects: 3,33 mg/kg bw/day.
Industrial, inhalative, Long-term - systemic effects: 14,5 mg/m <sup>3</sup> .
general population, dermal, Long-term - systemic effects: 1,66 mg/kg bw/day.
general population, inhalative, Long-term - systemic effects: 2,6 mg/m <sup>3</sup> .

**PNEC**

Substance
Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched), CAS: -
sewage treatment plants (STP), 24.33 mg/l (ECHA CHEM).
soil, 2,54 mg/kg soil dw (ECHA CHEM).
sediment (seawater), 0,313 mg/kg (ECHA CHEM).
sediment (freshwater), 3,13 mg/kg (ECHA CHEM).
seawater, 0,00012 mg/l (ECHA CHEM).
freshwater, 0,0012 mg/l (ECHA CHEM).
Polysulfides, di-tert-Bu, CAS: 68937-96-2
oral (food), 6,66 mg/kg.
soil, 311504 mg/kg soil.
sediment (seawater), 9413 mg/kg sediment.
sediment (freshwater), 94130 mg/kg sediment.
sewage treatment plants (STP), 45 mg/l.
freshwater, 0,063 mg/l.

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## 8.2 Exposure controls

<b>Additional advice on system design</b>	Ensure adequate ventilation on workstation. General exposure limit for oil mist should be noted. Measurement methods for taking workplace measurements must meet the performance requirements of DIN EN 482. For example, recommendations are given in the IFA's list of hazardous substances.
<b>Eye protection</b>	Safety glasses. (EN 166:2001)
<b>Hand protection</b>	The details concerned are recommendations. Please contact the glove supplier for further information. > 0,4 mm: Nitrile rubber, >120 min (EN 374-1/-2/-3).
<b>Skin protection</b>	Light protective clothing.
<b>Other</b>	Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier. Do not inhale gases/vapours/aerosols. Avoid contact with eyes and skin.
<b>Respiratory protection</b>	not applicable
<b>Thermal hazards</b>	No information available.
<b>Delimitation and monitoring of the environmental exposition</b>	Comply with applicable environmental regulations limiting discharge to air, water and soil.

## SECTION 9: Physical and chemical properties

## 9.1 Information on basic physical and chemical properties

<b>Form</b>	liquid
<b>Color</b>	brown
<b>Odor</b>	characteristic
<b>Odour threshold</b>	No information available.
<b>pH-value</b>	not applicable
<b>pH-value [1%]</b>	not applicable
<b>Boiling point [°C]</b>	No information available.
<b>Flash point [°C]</b>	200
<b>Flammability (solid, gas) [°C]</b>	No information available.
<b>Lower explosion limit</b>	No information available.
<b>Upper explosion limit</b>	No information available.
<b>Oxidising properties</b>	no
<b>Vapour pressure/gas pressure [kPa]</b>	No information available.
<b>Density [g/ml]</b>	0,89 (15 °C / 59,0 °F)
<b>Bulk density [kg/m³]</b>	not applicable
<b>Solubility in water</b>	immiscible
<b>Partition coefficient [n-octanol/water]</b>	No information available.
<b>Viscosity</b>	142 mm²/s (40°C)
<b>Relative vapour density determined in air</b>	No information available.
<b>Evaporation speed</b>	No information available.
<b>Melting point [°C]</b>	No information available.
<b>Autoignition temperature [°C]</b>	not applicable
<b>Decomposition temperature [°C]</b>	No information available.

## 9.2 Other information

No information available.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

See SECTION 10.3.

### 10.2 Chemical stability

The product is stable under standard conditions.

### 10.3 Possibility of hazardous reactions

Reactions with strong oxidizing agents.

### 10.4 Conditions to avoid

No special measures necessary.

### 10.5 Incompatible materials

Strong oxidizing agent.  
Strong basic compounds  
strong acids

### 10.6 Hazardous decomposition products

No hazardous decomposition products known.

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## SECTION 11: Toxicological information

## 11.1 Information on toxicological effects

## Acute toxicity

Substance
Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched), CAS: -
LD50, oral, Rat: 2000 mg/kg bw (OECD 401).
Polysulfides, di-tert-Bu, CAS: 68937-96-2
LD0, dermal, Rat: 2000 mg/kg bw.
LD0, oral, Rat: 2000 mg/kg bw.

<b>Serious eye damage/irritation</b>	Based on the available information, the classification criteria are not fulfilled. Non-irritant. Classification was carried out based on substance-specific concentration limits. The undiluted substance "931-384-6" is an irritant while the 50% formulation in mineral oil was not an irritant.
<b>Skin corrosion/irritation</b>	Toxicological data of complete product are not available. No classification. Calculation method
<b>Respiratory or skin sensitisation</b>	Non-sensitizing. On basis of test data
<b>Specific target organ toxicity — single exposure</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Specific target organ toxicity — repeated exposure</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Mutagenicity</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Reproduction toxicity</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Carcinogenicity</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Aspiration hazard</b>	Based on the available information, the classification criteria are not fulfilled.
<b>General remarks</b>	Toxicological data of complete product are not available. The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists.

## SECTION 12: Ecological information

## 12.1 Toxicity

Substance
Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched), CAS: -
EC50, (96h), Pseudokirchneriella subcapitata: 6,4 mg/l (OECD 201).
EL50, (21d), Daphnia magna: 0,91 mg/l (OECD 211).
EL50, (48h), Daphnia magna: 91,4 mg/l (OECD 202).
LL50, (96h), Oncorhynchus mykiss: 24 mg/l (OECD 203).
Polysulfides, di-tert-Bu, CAS: 68937-96-2
LC50, (96h), Danio rerio: > 0,088 mg/l.
EL50, (48h), Daphnia magna: 63 mg/l.
NOEC, (28d), Activated sewage sludge: 45,1 mg/l.
NOEC, (96h), Danio rerio: >= 0,088 mg/l.
NOELR, (48h), Daphnia magna: 18 mg/l.

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**12.2 Persistence and degradability**

<b>Behaviour in environment compartments</b>	not determined
<b>Behaviour in sewage plant</b>	not determined
<b>Biological degradability</b>	not determined

**12.3 Bioaccumulative potential**

No information available.

**12.4 Mobility in soil**

No information available.

**12.5 Results of PBT and vPvB assessment**

Based on all available information not to be classified as PBT or vPvB respectively.

**12.6 Other adverse effects**

Ecological data of complete product are not available.  
Do not discharge product unmonitored into the environment or into the drainage.

**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**

Waste material c It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

**Product**

In according to RoHS!  
Disposal in an incineration plant in accordance with the regulations of the local authorities.

**Waste no. (recommended)**

130205\* mineral-based non-chlorinated engine, gear and lubricating oils

**Contaminated packaging**

Uncontaminated packaging may be taken for recycling.  
Packaging that cannot be cleaned should be disposed of as for product.

**Waste no. (recommended)**

150110\*

**SECTION 14: Transport information**

**14.1 UN number**

**Transport by land according to ADR/RID** not applicable

**Inland navigation (ADN)** not applicable

**Marine transport in accordance with IMDG** not applicable

**Air transport in accordance with IATA** not applicable



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**14.2 UN proper shipping name**

Transport by land according to ADR/RID NO DANGEROUS GOODS

Inland navigation (ADN) NO DANGEROUS GOODS

Marine transport in accordance with IMDG NOT CLASSIFIED AS "DANGEROUS GOODS"

Air transport in accordance with IATA NOT CLASSIFIED AS "DANGEROUS GOODS"

**14.3 Transport hazard class(es)**

Transport by land according to ADR/RID not applicable

Inland navigation (ADN) not applicable

Marine transport in accordance with IMDG not applicable

Air transport in accordance with IATA not applicable

**14.4 Packing group**

Transport by land according to ADR/RID not applicable

Inland navigation (ADN) not applicable

Marine transport in accordance with IMDG not applicable

Air transport in accordance with IATA not applicable

**14.5 Environmental hazards**

Transport by land according to ADR/RID no

Inland navigation (ADN) no

Marine transport in accordance with IMDG no

Air transport in accordance with IATA no

**14.6 Special precautions for user**

Relevant information under SECTION 6 to 8.

**14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code**

not applicable

**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

<b>EEC-REGULATIONS</b>	1991/689 (2001/118); 2010/75; 2004/42; 648/2004; 1907/2006 (REACH); 1272/2008; 75/324/EEC (2016/2037/EC); (EU) 2015/830; (EU) 2016/131; (EU) 517/2014
<b>TRANSPORT-REGULATIONS</b>	ADR (2019); IMDG-Code (2019, 39. Amdt.); IATA-DGR (2019)
<b>NATIONAL REGULATIONS (GB):</b>	EH40/2005 Workplace exposure limits (Second edition, published December 2011).
- Observe employment restrictions for people	Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.
- VOC (2010/75/CE)	not applicable

**15.2 Chemical safety assessment****SECTION 16: Other information****16.1 Hazard statements (SECTION 03)**

H411 Toxic to aquatic life with long lasting effects.  
H318 Causes serious eye damage.  
H302 Harmful if swallowed.  
H317 May cause an allergic skin reaction.  
H412 Harmful to aquatic life with long lasting effects.  
H319 Causes serious eye irritation.

**16.2 Abbreviations and acronyms:**

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route  
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses  
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure  
ATE = acute toxicity estimate  
CAS = Chemical Abstracts Service  
CLP = Classification, Labelling and Packaging  
DMEL = Derived Minimum Effect Level  
DNEL = Derived No Effect Level  
EC50 = Median effective concentration  
ECB = European Chemicals Bureau  
EEC = European Economic Community  
EINECS = European Inventory of Existing Commercial Chemical Substances  
ELINCS = European List of Notified Chemical Substances  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk  
IC50 = Inhibition concentration, 50%  
IMDG = International Maritime Code for Dangerous Goods  
IUCLID = International Uniform Chemical Information Database  
LC50 = Lethal concentration, 50%  
LD50 = Median lethal dose  
LC0 = lethal concentration, 0%  
LOAEL = lowest-observed-adverse-effect level  
MARPOL = International Convention for the Prevention of Marine Pollution from Ships  
NOAEL = No Observed Adverse Effect Level  
NOEC = No Observed Effect Concentration  
PBT = Persistent, Bioaccumulative and Toxic substance  
PNEC = Predicted No-Effect Concentration  
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals  
STP = Sewage Treatment Plant  
TLV@TWA = Threshold limit value – time-weighted average  
TLV@STEL = Threshold limit value – short-time exposure limit  
VOC = Volatile Organic Compounds  
vPvB = very Persistent and very Bioaccumulative

**16.3 Other information****Classification procedure**

**Safety Data Sheet 1907/2006/EC - REACH (GB)**

**febi 170166 Gear oil SAE 80W-90 (GL-4/5) Article number 170166, 170167, 170168**



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**Modified position**

none