

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

### 1.1 Product identifier

**febi 21829 gear oil**  
**Article number: 21829**

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

#### 1.2.1 Relevant uses

Lubricant

#### 1.2.2 Uses advised against

None known.

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

**Company** Ferdinand Bilstein GmbH + Co. KG  
Wilhelmstr. 47  
58256 Ennepetal / GERMANY  
Phone +49 2333 911-0  
Fax +49 2333 911-444  
Homepage [www.febi.com](http://www.febi.com)  
E-mail [info@febi.com](mailto:info@febi.com)

#### Address enquiries to

**Technical information** [info@febi.com](mailto:info@febi.com)

**Safety Data Sheet** [info@febi.com](mailto:info@febi.com)

### 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 (GB) CLP]

Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects.

### 2.2 Label elements

The product is required to be labelled in accordance with regulation CLP.

**Hazard pictograms** none

**Signal word** none

**Hazard statements** H412 Harmful to aquatic life with long lasting effects.

**Precautionary statements** P273 Avoid release to the environment.  
P501 Dispose of contents/container in accordance with local/national regulation.

**Special labelling** 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.

**Human health dangers** Frequent persistent contact with the skin can cause skin irritation.  
If swallowed or in the event of vomiting, risk of product entering the lungs.

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

**Other hazards** none

## SECTION 3: Composition / Information on ingredients

### 3.1 Substances

not applicable

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### 3.2 Mixtures

The product is a mixture.

Range [%]	Substance
0,25- < 1	2,2'-(C16-18 (evennumbered, C18 unsaturated) alkyl imino) diethanol CAS: 1218787-32-6, EINECS/ELINCS: 620-540-6, Reg-No.: 01-2119510877-33-XXXX GHS/CLP: Acute Tox. 4: H302 - Skin Corr. 1C: H314 - Aquatic Acute 1: H400 - Aquatic Chronic 1: H410, M-Factor (acute): 10
0,1 - < 1	Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched) EINECS/ELINCS: 931-384-6, Reg-No.: 01-2119493620-38 GHS/CLP: Acute Tox. 4: H302 - Eye Dam. 1: H318 - Skin Sens. 1: H317 - Aquatic Chronic 2: H411 SCL [%]: > 50: Eye Dam. 1: H318, >= 9,39: Skin Sens. 1B: H317, > 50: Eye Irrit. 2: H319

**Comment on component parts**

All chemical substances in this material are included on or exempted from listing on the IECSC Inventory.  
Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.  
For full text of H-statements: see SECTION 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General information	Change soaked clothing.
Inhalation	Ensure supply of fresh air. In the event of symptoms seek medical treatment.
Skin contact	When in contact with the skin, clean with soap and water. Consult a doctor if skin irritation persists.
Eye contact	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.
Ingestion	Do not induce vomiting. Rinse out mouth and give plenty of water to drink. Get medical advice.

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

Irritant effects

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

Treat symptomatically.  
Forward this sheet to your doctor.

## SECTION 5: Fire-fighting measures

### 5.1 Extinguishing media

Suitable extinguishing media	Foam, dry powder, water spray jet, carbon dioxide
Extinguishing media that must not be used	Full water jet

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

Not combusted hydrocarbons.  
Risk of formation of toxic pyrolysis products.  
Carbon monoxide (CO)

### 5.3 Advice for firefighters

Do not inhale explosion and/or combustion gases.

Use self-contained breathing apparatus.

Cool containers at risk with water spray jet.

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. general-purpose 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

Avoid formation of aerosols.

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

Use barrier skin cream.

Wash face and/or hands before break and end of work.

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

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

Take off contaminated clothing and wash before reuse.

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

Keep only in original container.

Prevent penetration into the ground.

Do not store together with food and animal food/diet.

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

## 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, dermal, Long-term - systemic effects, 12.5 mg/kg bw/d (AF=120)
Industrial, inhalative, Long-term - systemic effects, 4.28 mg/m <sup>3</sup> (AF=30)
general population, oral, Long-term - systemic effects, 0.25 mg/kg bw/d (AF=600)
general population, dermal, Long-term - systemic effects, 6.25 mg/kg bw/d (AF=240)
general population, inhalative, Long-term - systemic effects, 1.09 mg/m <sup>3</sup> (AF=60)
2,2'-(C16-18 (evennumbered, C18 unsaturated) alkyl imino) diethanol, CAS: 1218787-32-6
Industrial, dermal, Long-term - systemic effects, 0.3 mg/kg bw/day
Industrial, inhalative, Long-term - systemic effects, 2.112 mg/m <sup>3</sup>
general population, oral, Long-term - systemic effects, 0.214 mg/kg bw/day
general population, dermal, Long-term - systemic effects, 0.214 mg/kg bw/day
general population, inhalative, Long-term - systemic effects, 0.745 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: -
oral (food), 10 mg/kg dw (AF=300)
soil, 1.17 µg/kg dw
sediment (seawater), 1.29 µg/kg dw
sediment (freshwater), 12.9 µg/kg dw
sewage treatment plants (STP), 24.33 mg/L (AF=100)
seawater, 0.24 µg/L (AF=500)
freshwater, 2.4 µg/L (AF=50)
2,2'-(C16-18 (evennumbered, C18 unsaturated) alkyl imino) diethanol, CAS: 1218787-32-6
oral (food), 2 mg/kg food
soil, 5 mg/kg soil dw
sediment (seawater), 0.169 mg/kg sediment dw
sediment (freshwater), 1.692 mg/kg sediment dw
sewage treatment plants (STP), 1500 µg/L
seawater, 0.021 µg/L
freshwater, 0.214 µg/L

## 8.2 Exposure controls

<b>Additional advice on system design</b>	Ensure adequate ventilation on workstation. 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>	If there is a risk of splashing: 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, >480 min (EN 374-1/-2/-3). > 0,4 mm; Neoprene, >480 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. Avoid contact with eyes and skin.
<b>Respiratory protection</b>	Respiratory protection mask in the event of high concentrations. Short term: filter apparatus, combination filter A-P1. (DIN EN 14387)
<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>Physical state</b>	liquid
<b>Color</b>	light yellow
<b>Odor</b>	characteristic
<b>Odour threshold</b>	not applicable
<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>	221 (ISO 2592)
<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/cm³]</b>	0,87 (DIN 51757) (15 °C / 59,0 °F)
<b>Relative density</b>	not determined
<b>Bulk density [kg/m³]</b>	not applicable
<b>Solubility in water</b>	immiscible
<b>Solubility other solvents</b>	No information available.
<b>Partition coefficient [n-octanol/water]</b>	No information available.
<b>Kinematic viscosity</b>	40,8 mm²/s (40°C); (DIN 51562)
<b>Relative vapour density</b>	No information available.
<b>Evaporation speed</b>	No information available.
<b>Melting point [°C]</b>	No information available.
<b>Auto-ignition temperature</b>	not applicable
<b>Decomposition temperature [°C]</b>	No information available.
<b>Particle characteristics</b>	No information available.

## 9.2 Other information

none

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No dangerous reactions known if used as directed.

### 10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).

### 10.3 Possibility of hazardous reactions

Reactions with oxidizing agents.

### 10.4 Conditions to avoid

Strong heating.

### 10.5 Incompatible materials

Oxidizing agent  
Strong basic compounds  
Strong acids.

### 10.6 Hazardous decomposition products

No hazardous decomposition products known.

## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute oral toxicity

Product
oral, Based on the available information, the classification criteria are not fulfilled.
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
2,2'-(C16-18 (evennumbered, C18 unsaturated) alkyl imino) diethanol, CAS: 1218787-32-6
LD50, oral, Rat, 1500 mg/kg bw (OECD 425)

#### Acute dermal toxicity

Product
dermal, Based on the available information, the classification criteria are not fulfilled.

#### Acute inhalational toxicity

Product
inhalative, Based on the available information, the classification criteria are not fulfilled.

**Serious eye damage/irritation** Based on the available information, the classification criteria are not fulfilled.

**Skin corrosion/irritation** Based on the available information, the classification criteria are not fulfilled.

**Respiratory or skin sensitisation** Toxicological data of complete product are not available.  
May produce an allergic reaction.  
Calculation method

**Specific target organ toxicity — single exposure** Based on the available information, the classification criteria are not fulfilled.

**Specific target organ toxicity — repeated exposure** Based on the available information, the classification criteria are not fulfilled.

Substance
2,2'-(C16-18 (evennumbered, C18 unsaturated) alkyl imino) diethanol, CAS: 1218787-32-6
NOAEL, oral, Dog, 13 mg/kg bw/day

**Mutagenicity** Based on the available information, the classification criteria are not fulfilled.

**Reproduction toxicity** Based on the available information, the classification criteria are not fulfilled.

**Carcinogenicity** Based on the available information, the classification criteria are not fulfilled.

**Aspiration hazard** Based on the available information, the classification criteria are not fulfilled.

#### General remarks

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.

### 11.2 Information on other hazards

**Endocrine disrupting properties** No information available.

**Other information** none

## SECTION 12: Ecological information

### 12.1 Toxicity

Product
Based on the available information, the classification criteria are not fulfilled.
Substance
Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched), CAS: -
LC50, (96h), fish, 24 mg/l
EC50, (48h), Daphnia magna, 91,4 mg/l
2,2'-(C16-18 (evennumbered, C18 unsaturated) alkyl imino) diethanol, CAS: 1218787-32-6
LC50, (24h), Danio rerio, >0.29 mg/L (OECD 203)
EC50, (24h), Daphnia magna, 0.21 mg/L (OECD 202)
EC10, (72h), Daphnia magna, 34.1 µg/L (OECD 201)
EC10, (21d), Daphnia magna, 10.7 µg/L (OECD 211)

### 12.2 Persistence and degradability

Behaviour in environment compartments	not determined
Behaviour in sewage plant	not determined
Biological degradability	The product is slightly soluble in water. It can be largely eliminated from the water by abiotic processes, e.g. mechanical separation.

### 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 Endocrine disrupting properties

No information available.

### 12.7 Other adverse effects

Ecotoxicological data 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 must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. 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!  
Coordinate disposal with the authorities if necessary.  
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\* packaging containing residues of or contaminated by hazardous substances

## SECTION 14: Transport information

### 14.1 UN number or ID 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

### 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

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**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 Maritime transport in bulk according to IMO instruments**

not applicable

**SECTION 15: Regulatory information**

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

EEC-REGULATIONS 2008/98/EC 2000/532/EC; 2010/75/EU; 2004/42/EC; (EC) 648/2004; (EC) 1907/2006 (REACH); (EU) 1272/2008; 75/324/EEC ((EC) 2016/2037); (EU) 2020/878; (EU) 2016/131; (EU) 517/2014

TRANSPORT-REGULATIONS ADR (2021); IMDG-Code (2021, 40. Amdt.); IATA-DGR (2022)

NATIONAL REGULATIONS (GB): EH40/2005 Workplace exposure limits (Second edition, published December 2011); UK REACH; GB CLP.

- Observe employment restrictions for people no

- VOC (2010/75/CE) 0 %

**15.2 Chemical safety assessment**

not applicable

**SECTION 16: Other information**

**16.1 Hazard statements (SECTION 3)**

H410 Very toxic to aquatic life with long lasting effects.  
H400 Very toxic to aquatic life.  
H314 Causes severe skin burns and eye damage.  
H411 Toxic to aquatic life with long lasting effects.  
H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.  
H302 Harmful if swallowed.

## 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  
EL50 = Median effective loading  
ELINCS = European List of Notified Chemical Substances  
EmS = Emergency Schedules  
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  
IVIS = In vitro irritation score  
LC50 = Lethal concentration, 50%  
LD50 = Median lethal dose  
LC0 = lethal concentration, 0%  
LOAEL = lowest-observed-adverse-effect level  
LL50 = Median lethal loading  
LQ = Limited Quantities  
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

Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects. (Calculation method)

### Modified position

SECTION 2 been added: H412 Harmful to aquatic life with long lasting effects.

SECTION 2 been added: Aquatic Chronic 3

SECTION 2 deleted: EUH210 Safety data sheet available on request.

SECTION 2 deleted: No classification.

SECTION 11 been added: none