

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

### 1.1 Product identifier

**grease**  
**Article number: 28194, 28193**

### 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]

No classification.

### 2.2 Label elements

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

**Hazard pictograms** none

**Signal word** none

**Hazard statements** none

**Precautionary statements** none

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

Contains: Naphthenic acids, zinc salts. 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.

**Environmental hazards** Does not contain any PBT or vPvB substances.  
Contains no ingredients with endocrine-disrupting properties.

**Other hazards** none

## SECTION 3: Composition / Information on ingredients

### 3.1 Substances

not applicable

### 3.2 Mixtures

The product is a mixture.

Range [%]	Substance
1 - < 2,5	Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl) and iso-Bu and iso-Pr) esters, zinc salts
	CAS: 85940-28-9, EINECS/ELINCS: 288-917-4, Reg-No.: 01-2119521201-61-XXXX
	GHS/CLP: Eye Dam. 1: H318 - Skin Irrit. 2: H315 - Aquatic Chronic 2: H411
0,1 - < 1	Naphthenic acids, zinc salts
	CAS: 12001-85-3, EINECS/ELINCS: 234-409-2, Reg-No.: 01-2120783834-41-XXXX
	GHS/CLP: Eye Irrit. 2: H319 - Skin Sens. 1B: H317 - Aquatic Chronic 2: H411
0,1 - < 1	Dilithium tetraborate
	CAS: 12007-60-2, EINECS/ELINCS: 234-514-3, Reg-No.: 01-2120770724-49-XXXX
	GHS/CLP: Eye Dam. 1: H318 - Acute Tox. 4: H302 - Repr. 2: H361d
	SCL [%]: >= 3,8: Repr. 2: H361

#### Comment on component parts

For full text of H-statements: see SECTION 16.  
Contains less than 3% w/w DMSO-extract (only for mineral oils)

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General information	Take off contaminated clothing and wash before reuse.
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	Seek medical advice 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

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 within 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

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

No special measures necessary if used correctly.

Do not eat, drink or smoke when using this product.  
Use barrier skin cream.  
Wash hands before breaks and after work.  
Cloths contaminated with product should not be kept in trouser pockets.

### 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.  
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 (UK)

not relevant

#### Ingredients with occupational exposure limits to be monitored EU (2004/37/EG)

not relevant

#### DNEL

Substance
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts, CAS: 85940-28-9
Industrial, inhalative, Long-term - systemic effects, 6,6 mg/m <sup>3</sup>
Industrial, dermal, Long-term - systemic effects, 9,6 mg/kg bw/d
general population, inhalative, Long-term - systemic effects, 1,67 mg/m <sup>3</sup>
general population, dermal, Long-term - systemic effects, 4,8 mg/kg bw/d
general population, oral, Long-term - systemic effects, 0,19 mg/kg bw/d
Naphthenic acids, zinc salts, CAS: 12001-85-3
Industrial, inhalative, Long-term - systemic effects, 1.18 mg/m <sup>3</sup> (AF=75)
Industrial, dermal, Long-term - systemic effects, 3.3 mg/kg bw/d (AF=30)
general population, dermal, Long-term - systemic effects, 1.7 mg/kg bw/d (AF=60)
general population, oral, Long-term - systemic effects, 0.17 mg/kg bw/d (AF=600)
general population, inhalative, Long-term - systemic effects, 0.29 mg/m <sup>3</sup> (AF=150)
Dilithium tetraborate, CAS: 12007-60-2
Industrial, inhalative, Long-term - systemic effects, 7.1 mg/m <sup>3</sup> (AF= 12.5)
Industrial, dermal, Long-term - systemic effects, 333 mg/kg bw/D (AF= 30)
general population, dermal, Long-term - systemic effects, 166 mg/kg bw/D (AF= 60)
general population, oral, Long-term - systemic effects, 0.83 mg/kg bw/D (AF= 60)
general population, inhalative, Long-term - systemic effects, 1.74 mg/m <sup>3</sup> (AF= 25)

#### PNEC

Substance
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts, CAS: 85940-28-9
freshwater, 0,002 mg/l (AF=1000)
seawater, 0,0002 mg/l (AF=10000)
sewage treatment plants (STP), 100 mg/l (AF=100)
sediment (freshwater), 19,3 mg/kg dw
sediment (seawater), 1,93 mg/kg dw
soil, 15,7 mg/kg dw
Naphthenic acids, zinc salts, CAS: 12001-85-3
freshwater, 0.004 mg/L (AF= 1000)
seawater, 0 mg/L (AF= 10000)
sewage treatment plants (STP), 689.7 µg/L (AF= 1)
sediment (freshwater), 0.015 mg/kg dw
sediment (seawater), 0.002 mg/kg dw
soil, 0.001 mg/kg dw
Dilithium tetraborate, CAS: 12007-60-2
sewage treatment plants (STP), 44 mg/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
<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; Butyl rubber, >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>	Breathing apparatus in the event of aerosol or mist formation. Short term: filter apparatus, combination filter A-P1. (DIN EN 14387)
<b>Thermal hazards</b>	none
<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>	solid
<b>Form</b>	pasty
<b>Color</b>	green
<b>Odor</b>	characteristic
<b>Odour threshold</b>	not relevant
<b>pH-value</b>	not applicable
<b>pH-value [1%]</b>	not applicable
<b>Boiling point or initial boiling point and boiling range [°C]</b>	No information available.
<b>Flash point [°C]</b>	not applicable
<b>Flammability</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>	ca. 0,9 (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 (log value)</b>	No information available.
<b>Kinematic viscosity</b>	NLGI 3
<b>Relative vapour density</b>	No information available.
<b>Melting point [°C]</b>	No information available.
<b>Auto-ignition temperature [°C]</b>	No information available.
<b>Decomposition temperature [°C]</b>	No information available.
<b>Particle characteristics</b>	No information available.

## **9.2 Other information**

Drop point: > 250°C

## **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 strong oxidizing agents.

### **10.4 Conditions to avoid**

Strong heating.

### **10.5 Incompatible materials**

Oxidizing agent  
Strong acids.  
Strong basic compounds

### **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
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts, CAS: 85940-28-9
LD50, oral, Rat, 3080 mg/kg bw
Naphthenic acids, zinc salts, CAS: 12001-85-3
LD50, oral, Rat, > 2000 mg/kg
Dilithium tetraborate, CAS: 12007-60-2
LD50, oral, Rat, 300 - 2000 mg/kg bw

**Acute dermal toxicity**

Product
dermal, Based on the available information, the classification criteria are not fulfilled.
Substance
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts, CAS: 85940-28-9
LD50, dermal, Rabbit, 20000 mg/kg bw
Dilithium tetraborate, CAS: 12007-60-2
LD50, dermal, Rat, > 2000 mg/kg bw

**Acute inhalational toxicity**

Product
inhalative, Based on the available information, the classification criteria are not fulfilled.
Substance
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts, CAS: 85940-28-9
LC50, inhalative, Rat, 2.3 mg/L air, 4h

**Serious eye damage/irritation**

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

Substance
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts, CAS: 85940-28-9
Eye, Causes serious eye damage.
Naphthenic acids, zinc salts, CAS: 12001-85-3
Eye, irritant
Dilithium tetraborate, CAS: 12007-60-2
Eye, Causes serious eye damage.

**Skin corrosion/irritation**

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

Substance
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts, CAS: 85940-28-9
dermal, irritant
Naphthenic acids, zinc salts, CAS: 12001-85-3
dermal, no adverse effect observed, keine schädliche Wirkung beobachtet,

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Dilithium tetraborate, CAS: 12007-60-2
dermal, non-irritating

**Respiratory or skin sensitisation**      May produce an allergic reaction.  
Calculation method

Substance
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts, CAS: 85940-28-9
dermal, non-sensitizing
Naphthenic acids, zinc salts, CAS: 12001-85-3
dermal, sensitising
Dilithium tetraborate, CAS: 12007-60-2
dermal, non-sensitizing

**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
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts, CAS: 85940-28-9
NOAEL, oral, Rat, 125 mg/kg bw/day
Naphthenic acids, zinc salts, CAS: 12001-85-3
NOAEL, oral, Rat, 89,7 mg/kg bw/day
Dilithium tetraborate, CAS: 12007-60-2
NOAEL, oral, Rat, 150 mg/kg bw/day

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

Substance
Naphthenic acids, zinc salts, CAS: 12001-85-3
in vitro, negativ

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

**- Fertility**

Substance
Dilithium tetraborate, CAS: 12007-60-2
NOAEL, oral, Rat, 150 mg/kg bw/d (Effect on fertility), no adverse effect observed

**- Development**

Substance
Dilithium tetraborate, CAS: 12007-60-2
NOAEL, oral, Rat, 50 mg/kg bw/d (Effect on developmental toxicity)

**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

11.2.1 Endocrine disrupting properties	Contains no ingredients with endocrine-disrupting properties.
11.2.2 Other information	none

SECTION 12: Ecological information

12.1 Toxicity

Product
Based on the available information, the classification criteria are not fulfilled.
Substance
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts, CAS: 85940-28-9
EC50, (48h), Invertebrates, 5.4 mg/L
EC50, (96h), Algae, 2 - 2.1 mg/L
NOEC, (21d), Invertebrates, 400 - 800 µg/L
LL50, (96h), Oncorhynchus mykiss, 4,5 mg/l
Naphthenic acids, zinc salts, CAS: 12001-85-3
EC50, (72h), Algae, 4 mg/L
EL50, (48h), Daphnia magna, 35 mg/L
LL50, (96h), fish, 100 mg/L
Dilithium tetraborate, CAS: 12007-60-2
LC50, (96h), fish, 100 mg/L
EC50, (48h), Daphnia magna, 100 mg/L
EC50, (72h), Algae, 100 mg/L
NOEC, (72h), Algae, 32 mg/L

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

Contains no ingredients with endocrine-disrupting properties.

12.7 Other adverse effects

Ecological data of complete product are not available.  
Do not discharge product unmonitored into the environment.  
The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

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 disposal contractor/authorities if necessary. Dispose of as hazardous waste.
Waste no. (recommended)	120112* spent waxes and fats
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 150102 150104

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"

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**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 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/EG (2000/532/EC ); 2010/75/EU; 2004/42/EG; (EG) 648/2004; (EC) 1907/2006 (REACH); (EU) 1272/2008; 75/324/EEG ((EC) 2016/2037); (EU) 2020/878; (EU) 2016/131; (EU) 517/2014; (EU) 2019/1148; (EU) 2019/1021, (EU) 2023/707
- Comment on component parts	Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.
- Annex I (REACH)	The product is not subject to Annex I restrictions.
- Annex XIV (REACH)	According to Annex XIV of Regulation (EC) 1907/2006 (REACH) the product does not contain any substances ≥ 0.1% that are subject to authorisation.
- Annex XVII (REACH)	According to Annex XVII of Regulation (EC) 1907/2006 (REACH) the product contains ≥ 0.1% of substances with the following restrictions. 75 According to Annex XVII of Regulation (EC) 1907/2006 (REACH) the product is not subject to any restrictions.
TRANSPORT-REGULATIONS	ADR (2023); IMDG-Code (2023, 41. Amdt.); IATA-DGR (2024)
NATIONAL REGULATIONS (UK):	EH40/2005 Workplace exposure limits (Second edition, published December 2011); UK REACH; GB CLP.
- Observe employment restrictions for people	not applicable
- VOC (2010/75/CE)	0 %

15.2 Chemical safety assessment

not applicable

SECTION 16: Other information

16.1 Hazard statements (SECTION 3)

H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H411 Toxic to aquatic life with long lasting effects.  
H315 Causes skin irritation.  
  
H361d Suspected of damaging the unborn child.  
H302 Harmful if swallowed.  
H318 Causes serious eye damage.

## 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

Modified position none