

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

### 1.1 Product identifier

**grease**  
**Article number: 21909**

### 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

No classification.

### 2.2 Label elements

The product does not require a hazard in accordance to OSHA Standard 29 CFR 1910.1200 (HCS 2012)

**Hazard pictograms** None

**Signal word** None

**Hazard statements** None

### 2.3 Other hazards

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

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

**Other hazards** None

This product is classified as non-hazardous in accordance to OSHA Standard 29 CFR 1910.1200.

## 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
0,1 - < 1	Naphthenic acids, zinc salts CAS: 12001-85-3
0,1 - < 1	Dilithium tetraborate CAS: 12007-60-2

#### 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.

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

Allergic reactions  
Irritant effects

### 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

#### 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

Risk of formation of toxic pyrolysis products.  
Sulphur oxides (SO<sub>x</sub>).  
Carbon monoxide (CO)

### 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

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

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

Take up mechanically.  
Dispose of absorbed material in accordance within 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.  
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 oxidizing agents.  
Keep container tightly closed.

### 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 (US)**

Not applicable

**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. General limit for oil mist should be noted.
<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).
<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>	Not required under normal conditions.
<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>Odor threshold</b>	Not applicable
<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>Oxidizing properties</b>	No
<b>Vapor pressure/gas pressure [kPa]</b>	No information available.
<b>Density [g/cm<sup>3</sup>]</b>	ca. 0,9 (DIN 51757) (25°C / 77,0°F)
<b>Relative density</b>	Not determined
<b>Bulk density [kg/m<sup>3</sup>]</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>	NGLI 2
<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 acids, alkalies and oxidizing agents.

### 10.4 Conditions to avoid

See SECTION 7.2.

### 10.5 Incompatible materials

Oxidizing agent  
strong acids  
Strong bases.

### 10.6 Hazardous decomposition products

No hazardous decomposition products known.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute oral toxicity

Product
oral, Based on the information available, the classification criteria have not been 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 information available, the classification criteria have not been 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 information available, the classification criteria have not been 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 information available, the classification criteria have not been fulfilled.  
The classification occurred based on substance-specific concentration limits.

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 information available, the classification criteria have not been 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,
Dilithium tetraborate, CAS: 12007-60-2
dermal, non-irritating

**Respiratory or skin sensitisation** Based on the information available, the classification criteria have not been fulfilled.

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 information available, the classification criteria have not been fulfilled.

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

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

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

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

**General remarks** Frequent persistent contact with the skin can cause dermatitis.

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

Product
Based on the information available, the classification criteria have not been 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	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 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.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Coordinate disposal with the disposal contractor/authorities if necessary.  
Disposal in an incineration plant in accordance with the regulations of the local authorities.

#### Contaminated packaging

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

#### RCRA Hazard Class (40CFR 261)

Waste must be disposed of in accordance with federal, state and local environmental control regulations. Consult your local or regional authorities.

## SECTION 14: Transport

### 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

DOT Road Shipment Information (49 CFR) 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"

DOT Road Shipment Information (49 CFR) Not applicable

**Ferdinand Bilstein GmbH + Co. KG**

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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

DOT Road Shipment Information (49 CFR) 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

DOT Road Shipment Information (49 CFR) 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

DOT Road Shipment Information (49 CFR) 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

#### US Regulations

<b>National regulations</b>	29 CFR 1910.1200-HCS 2012, OSHA-PEL, ACGIH-TLV, NTP, IARC, SARA Title III, NFPA, TSCA, California - Prop. 65
- SARA, 302	This product does not contain any ingredients regulated under this list.
- SARA, 311	This product is not classified as hazardous under SARA 311.
- SARA, 313	This product does not contain any ingredients regulated under this list.
- CA Proposition 65	No components require labeling under California Proposition 65.
- TSCA	All chemical substances in this material are included on or exempted from listing on the TSCA Inventory.
- FDA	
<b>American Conference of Governmental Industrial Hygienists - ACGIH</b>	No information available.
<b>International Agency for Research on Cancer IARC</b>	No information available.
<b>National Toxicology Program - NTP</b>	No information available.
<b>HAP-VOC</b>	< 3 g/l
<b>Transport-regulations</b>	DOT-Classification, ADR (2023); IMDG-Code (2023, 41. Amdt.); IATA-DGR (2024)

### 15.2 Chemical safety assessment

For this product a chemical safety assessment has not been carried out.

## SECTION 16: Other information

### 16.1 Abbreviations and acronyms:

ACGIH = American Conference of Governmental Industrial Hygienists;  
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;  
CAS = Chemical Abstracts Service;  
CERCLA = Comprehensive Environmental Response, Compensation and Liability Act;  
CFR = Code of Federal Regulations;  
CPR = Controlled Products Regulations;  
DMEL = Derived Minimum Effect Level;  
DNEL = Derived No Effect Level;  
DOT = Department of Transportation;  
EC50 = Median effective concentration;  
EPA = Environmental Protection Agency;  
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;  
IARC = International Agency of Research on Cancer;  
IATA = International Air Transport Association;  
TSCA = Toxic Substance Control Act;  
HMIS = Hazardous Materials Identification System;  
NFPA = National Fire Protection Association;  
NIOSH = National Institute for Occupational Safety and Health;  
OSHA = Occupational Safety and Health Administration;  
LC50 = Lethal concentration, 50%;  
LD50 = Median lethal dose, 50%;  
MARPOL = International Convention for the Prevention of Marine Pollution from Ships;  
PBT = Persistent, Bioaccumulative and Toxic substance;  
PNEC = Predicted No-Effect Concentration;  
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals;  
SARA = Superfund Amendments and Reauthorization Act;  
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;

### 16.2 Ratings

#### NFPA Ratings



TOP, FLAMMABILITY: 1 - Slight Hazard  
LEFT, HEALTH: 1 - Slight Hazard  
RIGHT, REACTIVITY: 0 - Minimal Hazard  
BOTTOM, SPECIAL NOTICE:

#### HMIS Ratings

HEALTH	1	1 - Slight Hazard
FLAMMABILITY	1	1 - Slight Hazard
PHYSICAL HAZARD	0	0 - Minimal Hazard
PERSONAL PROTECTION	B	B - Safety Glasses and Gloves

#### PERSONAL PROTECTION:

- A - Safety Glasses
- B - Safety Glasses and Gloves
- C - Safety Glasses, Gloves and Protection Apron
- D - Face Shield, Gloves and Protection Apron
- E - Safety Glasses, Gloves and Dust Respirator
- F - Safety Glasses, Gloves, Protection Apron and Dust Respirator
- G - Safety Glasses, Gloves and Vapor Respirator.
- H - Splash Goggles, Gloves, Protection Apron and Vapor Respirator.
- I - Safety Glasses, Gloves, Dust Respirator and Vapor Respirator.
- J - Splash Goggles, Gloves, Protection Apron, Dust Respirator and Vapor Respirator.
- K - Airline Mask or Hood, Gloves, Full Suit and Boots.
- X - Personal protection rating to be supplied by user depending on use conditions

#### Modified position

1.3, 3.2, 4.2, 8.1, 9.1, 10.5, 11.1, 15.1, 16.2, 16.3