

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
E-mail info@febi.com

Address enquiries to

Technical information info@febi.com
Safety Data Sheet 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

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.

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. |

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 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

Risk of formation of toxic pyrolysis products.
Sulphur oxides (SO_x).
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 (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 ³ |
| Industrial, dermal, Long-term - systemic effects, 9,6 mg/kg bw/d |
| general population, inhalative, Long-term - systemic effects, 1,67 mg/m ³ |
| 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 ³ (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 ³ (AF=150) |
| Dilithium tetraborate, CAS: 12007-60-2 |
| Industrial, inhalative, Long-term - systemic effects, 7.1 mg/m ³ (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 ³ (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

| | |
|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Additional advice on system design | Ensure adequate ventilation on workstation. General exposure limit for oil mist should be noted. |
| Eye protection | If there is a risk of splashing: safety glasses |
| Hand protection | 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). |
| Skin protection | light protective clothing |
| Other | 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. |
| Respiratory protection | Not required under normal conditions. |
| Thermal hazards | none |
| Delimitation and monitoring of the environmental exposition | 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

| | |
|----------------------------------------------------------------------|-------------------------------------|
| Physical state | solid |
| Form | pasty |
| Color | green |
| Odor | characteristic |
| Odour threshold | not relevant |
| pH-value | not applicable |
| pH-value [1%] | not applicable |
| Boiling point or initial boiling point and boiling range [°C] | No information available. |
| Flash point [°C] | not applicable |
| Flammability | No information available. |
| Lower explosion limit | No information available. |
| Upper explosion limit | No information available. |
| Oxidising properties | no |
| Vapour pressure/gas pressure [kPa] | No information available. |
| Density [g/cm³] | ca. 0,9 (DIN 51757) (25°C / 77,0°F) |
| Relative density | not determined |
| Bulk density [kg/m³] | not applicable |
| Solubility in water | immiscible |
| Solubility other solvents | No information available. |
| Partition coefficient n-octanol/water (log value) | No information available. |
| Kinematic viscosity | NGLI 2 |
| Relative vapour density | No information available. |
| Melting point [°C] | No information available. |
| Auto-ignition temperature [°C] | No information available. |
| Decomposition temperature [°C] | No information available. |
| Particle characteristics | 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 hazard classes as defined in Regulation (EC) No 1272/2008

Acute oral toxicity

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|---------------------------------------------------------------------------------------------------------------|
| 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.
Classification was carried out based on substance-specific concentration limits.

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|---------------------------------------------------------------------------------------------------------------|
| 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.

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|---------------------------------------------------------------------------------------------------------------|
| 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 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, 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.

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|---------------------------------------------------------------------------------------------------------------|
| 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 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.

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 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

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

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

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"

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/EWG ((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 $\geq 0.1\%$ that are subject to authorisation.

- **Annex XVII (REACH)** According to Annex XVII of Regulation (EC) 1907/2006 (REACH) the product contains $\geq 0.1\%$ 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** Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.

- **VOC (2010/75/CE)** not relevant

15.2 Chemical safety assessment

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

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

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