

Ferdinand Bilstein GmbH + Co. KG

Date printed 25.05.2022, Revision 25.05.2022

Version 12. Supersedes version: 11

Page 1 / 15

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

1.1 Product identifier

brake fluid DOT 4 PLUS

Article number: 26748, 23932, 23930

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

121 Relevantuses

brake fluid

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

Repr. 2: H361d Suspected of damaging the unborn child.

2.2 Label elements

The product is classified as hazardous in accordance to OSHA Standard 29 CFR 1910.1200

(HCS 2012)

Hazard pictograms

Signal word WARNING

Contains: Tris[2-(2-(2-methoxyethoxy)ethoxy)ethyl]orthoborate, CAS: 30989-05-0

Hazard statements H361d Suspected of damaging the unborn child.

Precautionary statements P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood. P280 Wear protective gloves/protective clothing/eye protection/face protection.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P405 Store locked up.

P501 Dispose of contents/container to in accordance with local/regional/national/international

regulation.

2.3 Other hazards

Physico-chemical hazards Material will burn in fire.

Environmental hazards Does not contain any PBT or vPvB substances.

Other hazards None

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



Ferdinand Bilstein GmbH + Co. KG

Date printed 25.05.2022, Revision 25.05.2022

Version 12. Supersedes version: 11

Page 2 / 15

SECTION 3: Composition / Information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

The product is a mixture.

Range [%]	Substance
30 - 90	Tris[2-(2-(2-methoxyethoxy)ethoxy)ethyl]orthoborate
	CAS: 30989-05-0
5 - 9.9	2-(2-(2-Butoxyethoxy)ethoxy)ethanol
	CAS: 143-22-6
0 - 5	Polyethylene glycol butyl ether
	CAS: 9004-77-7
0 -2.99	2-(2-Methoxyethoxy)ethanol
	CAS: 111-77-3

Comment on component parts

Substances of Very High Concern - SVHC: substances are not contained or are below 0,1%.

For full text of H-statements and R-phrases: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

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

No information available.

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 Full

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)



Ferdinand Bilstein GmbH + Co. KG

Date printed 25.05.2022, Revision 25.05.2022

Version 12. Supersedes version: 11

Page 3 / 15

5.3 Advice for firefighters

Use self-contained breathing apparatus.

Collect contaminated firefighting water separately, must not be discharged into the drains. 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

Ensure adequate ventilation.

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 within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Use only in well-ventilated areas.

The product is combustible.

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

Use barrier skin cream.

Wash hands before breaks and after work.

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.

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

Keep in a cool place. Store in a dry place.

Keep container tightly closed.

Protect from heat/overheating.

Keep container in a well-ventilated place.

Recommended storage temperature: 18 - 23°C

7.3 Specific end use(s)

See product use, SECTION 1.2



Ferdinand Bilstein GmbH + Co. KG

Date printed 25.05.2022, Revision 25.05.2022

Version 12. Supersedes version: 11

Page 4 / 15

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (US)

Not applicable

DNEL

Substance
2-(2-(2-Butoxyethoxy)ethoxy)ethanol, CAS: 143-22-6
Industrial, dermal, Long-term - local effects, 5.65 mg/cm ²
Industrial, inhalative, Long-term - systemic effects, 24 mg/m³
Industrial, inhalative, Acute - systemic effects, 96 mg/m³
Industrial, inhalative, Long-term - local effects, 30.5 mg/m³
Industrial, inhalative, Acute - local effects, 96 mg/m³
Industrial, dermal, Acute - systemic effects, 400 mg/kg bw/day
Industrial, dermal, Acute - local effects, 8.35 mg/cm²
Industrial, dermal, Long-term - systemic effects, 208 mg/kg bw/day
general population, oral, Acute - systemic effects, 103.4 mg/kg bw/day
general population, dermal, Long-term - local effects, 2.823 mg/cm ²
general population, oral, Long-term - systemic effects, 12.5 mg/kg bw/day
general population, dermal, Acute - local effects, 4.173 mg/cm ²
general population, inhalative, Long-term - systemic effects, 12 mg/m³
general population, dermal, Acute - systemic effects, 200 mg/kg bw/day
general population, inhalative, Long-term - local effects, 15.252 mg/m³
general population, inhalative, Acute - local effects, 48 mg/m³
general population, dermal, Long-term - systemic effects, 125 mg/kg bw/day
general population, inhalative, Acute - systemic effects, 48 mg/m³
2-(2-Methoxyethoxy)ethanol, CAS: 111-77-3
Industrial, dermal, Long-term - systemic effects, 2.22 mg/kg bw/day
Industrial, inhalative, Long-term - systemic effects, 50.1 mg/m³
general population, oral, Long-term - systemic effects, 7.5 mg/kg bw/day
general population, inhalative, Long-term - systemic effects, 30.1 mg/m³
general population, dermal, Long-term - systemic effects, 1.33 mg/kg bw/day
Polyethylene glycol butyl ether, CAS: 9004-77-7
Industrial, dermal, Long-term - systemic effects, 208 mg/kg bw/day
Industrial, inhalative, Long-term - systemic effects, 195 mg/m³
general population, dermal, Long-term - systemic effects, 125 mg/kg bw/day
general population, inhalative, Long-term - systemic effects, 117 mg/m³
general population, oral, Long-term - systemic effects, 12.5 mg/kg bw/day
Tris[2-(2-(2-methoxyethoxy)ethoxy)ethyl]orthoborate, CAS: 30989-05-0
Industrial, inhalative, Long-term - systemic effects, 14.8 mg/m³ (AF=25)
Industrial, dermal, Long-term - systemic effects, 4.2 mg/kg bw/d (AF=100)
general population, inhalative, Long-term - systemic effects, 2.6 mg/m³ (AF=50)
general population, oral, Long-term - systemic effects, 1.5 mg/kg bw/d (AF=200)
general population, dermal, Long-term - systemic effects, 1.5 mg/kg bw/d (AF=200)

PNEC

Substance



Ferdinand Bilstein GmbH + Co. KG

Date printed 25.05.2022, Revision 25.05.2022

Version 12. Supersedes version: 11

Page 5 / 15

2-(2-(2-Butoxyethoxy)ethoxy)ethanol, CAS: 143-22-6
sediment (seawater), 770 - 1111.5 μg/kg sediment dw
sediment (freshwater), 7.7 - 11.115 mg/kg sediment dw
sewage treatment plants (STP), 199.5 - 200 mg/L
seawater, 200 - 142570 µg/L
freshwater, 2 - 100 mg/L
soil, 470 - 11510 μg/kg soil dw
2-(2-Methoxyethoxy)ethanol, CAS: 111-77-3
seawater, 1.2 mg/L
sewage treatment plants (STP), 10000 mg/L
sediment (freshwater), 44.4 mg/kg sediment dw
sediment (seawater), 0.44 mg/kg sediment dw
freshwater, 12 mg/L
terrestrial, 2.1 mg/kg
oral (food), 0.09 g/kg
Polyethylene glycol butyl ether, CAS: 9004-77-7
sediment (freshwater), 6.6 mg/kg sediment dw
freshwater, 4.5 mg/L
sewage treatment plants (STP), 500 mg/L
sediment (seawater), 660 μg/kg sediment dw
soil, 1.02 - 1.32 mg/kg soil dw
oral (food), 111 - 333 mg/kg food
seawater, 310 µg/L

8.2 Exposure controls

Additional advice on system design 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.

Eye protection 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). > 0.4 mm; Butyl rubber, >480 min (EN 374-1/-2/-3).

Oil-resistant protective clothing. Skin protection

> 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.

Do not inhale vapors.

In the event of occupational exposure limits being exceeded or of inadequate ventilation: wear Respiratory protection

appropriate respiratory protection.

Short term: filter apparatus, filter A. (DIN EN 14387)

Thermal hazards

Delimitation and monitoring of the environmental exposition

Comply with applicable environmental regulations limiting discharge to air, water and soil.



Ferdinand Bilstein GmbH + Co. KG

Date printed 25.05.2022, Revision 25.05.2022

Version 12. Supersedes version: 11

Page 6 / 15

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state Liquid

Coloramber colourOdorcharacteristicOdor thresholdNot applicable

pH-value 7 - 11.5

pH-value [1%] No information available.

 Boiling point [°C]
 > 260

 Flash point [°C]
 > 120

 Flammability [°C]
 > 280

Lower explosion limitNo information available.Upper explosion limitNo information available.

Oxidizing properties
No
Vapor pressure/gas pressure [kPa] 1 mbar
Density [g/cm³] ca. 1.07
Relative density
Rulk density [kg/m³] Not applicable
Solubility in water
No

Solubility other solvents No information available.

Partition coefficient [n-octanol/water] 1.5

Kinematic viscosity max. 1500 cSt (-40°C)

min. 1.5 cSt (100°C) 5 - 10 cSt (20°C)

Relative vapour density

No information available.

Evaporation speed

No information available.

Melting point [°C] < -50
Auto-ignition temperature > 280°C

Decomposition temperature [°C] 300

Particle characteristics No information available.

9.2 Other information

No information available.

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). Decomposes begins at ca. 360 °C.

10.3 Possibility of hazardous reactions

Reactions with oxidizing agents. The product is hygroscopic.

10.4 Conditions to avoid

See SECTION 7.2.



Ferdinand Bilstein GmbH + Co. KG

Date printed 25.05.2022, Revision 25.05.2022

Version 12. Supersedes version: 11

Page 7 / 15

10.5 Incompatible materials

Oxidizing agent

10.6 Hazardous decomposition products

No hazardous decomposition products known.



Ferdinand Bilstein GmbH + Co. KG

Date printed 25.05.2022, Revision 25.05.2022

Version 12. Supersedes version: 11

Page 8 / 15

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

Product	
ATE-mix, Rat, > 5000 mg/kg bw	

ATE-IIIX, Rat, > 5000 Hig/kg bw	
Substance	
2-(2-(2-Butoxyethoxy)ethoxy)ethanol, CAS: 143-22-6	
LD50, oral, Rat, 5000 - 11300 mg/kg bw	
LD0, oral, Rat, 5 mL/kg bw	
2-(2-Methoxyethoxy)ethanol, CAS: 111-77-3	
LD50, oral, Rat, 7128 mg/kg	
Polyethylene glycol butyl ether, CAS: 9004-77-7	
LD50, oral, Rat, 2000 - 2630 mg/kg bw	
Tris[2-(2-(2-methoxyethoxy)ethoxy)ethyl]orthoborate, CAS: 30989-05-0	
LD50, oral, Rat, > 2000 mg/kg bw, OECD 401	

Acute dermal toxicity

Product	
ATE-mix, Rabbit, > 3000mg/kg bw	
Cubatanas	

Substance
2-(2-(2-Butoxyethoxy)ethoxy)ethanol, CAS: 143-22-6
LC50, dermal, Rabbit, 3540 mg/kg bw
LDLo, dermal, Rabbit, 2000 mg/kg bw
2-(2-Methoxyethoxy)ethanol, CAS: 111-77-3
LD50, dermal, Rabbit, 9404 mg/kg
Polyethylene glycol butyl ether, CAS: 9004-77-7
LD50, dermal, Rabbit, 3540 mg/kg bw
Tris[2-(2-(2-methoxyethoxy)ethoxy)ethyl]orthoborate, CAS: 30989-05-0
LD50, dermal, Rat, > 2000 mg/kg bw

Acute inhalational toxicity

Substance	
2-(2-(2-Butoxyethoxy)ethoxy)ethanol, CAS: 143-22-6	
LC50, inhalative, Rat, 2.4 mg/L air	
, inhalative, Rat, 1.2 mg/L air, 8h	
2-(2-Methoxyethoxy)ethanol, CAS: 111-77-3	
LC0, inhalativ (vapor), Rat. > 1.2 mg/l 6h	

Serious eye damage/irritation Toxicological data of complete product are not available.

No classification.
Calculation method

Substance	
2-(2-Methoxyethoxy)ethanol, CAS: 111-77-3	
Eve. non-irritating	

Skin corrosion/irritation

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



Ferdinand Bilstein GmbH + Co. KG

Date printed 25.05.2022, Revision 25.05.2022

Version 12. Supersedes version: 11

Page 9 / 15

Substance
2-(2-Methoxyethoxy)ethanol, CAS: 111-77-3
dermal, non-irritating

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

Substance

2-(2-Methoxyethoxy)ethanol, CAS: 111-77-3

dermal, non-sensitizing

Substance

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

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

Substance

2-(2-(2-Butoxyethoxy)ethoxy)ethanol, CAS: 143-22-6

NOAEL, dermal, Rat, 5000 mg/kg bw/day

NOAEL, oral, Rat, 500 mg/kg bw/day

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

Reproduction toxicity Suspected of damaging the unborn child.

Calculation method

2-(2-Methoxyethoxy)ethanol, CAS: 111-77-3

NOAEL, dermal, Rabbit, 50 mg/kg bw/day, adverse effect observed, Effect on developmental toxicity,

NOAEL, oral, 200 mg/kg bw/day, adverse effect observed, Effect on developmental toxicity,

CarcinogenicityBased on the information available, the classification criteria have not been fulfilled.Aspiration hazardBased on the information available, the classification criteria have not been fulfilled.General remarksGeneral 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.



Ferdinand Bilstein GmbH + Co. KG

Date printed 25.05.2022, Revision 25.05.2022

Version 12. Supersedes version: 11

Page 10 / 15

SECTION 12: Ecological information

12.1 Toxicity

Substance	
2-(2-(2-Butoxyethoxy)ethoxy)ethanol, CAS: 143-22-6	
LC50, (48h), fish, 2.4 g/L	
LC50, (24h), fish, 2.4 - 2.967 g/L	
LC50, (96h), fish, 2.182 - 14.257 g/L	
EC50, (72h), Algae, 500 - 3211 mg/L	
EC50, (21d), Invertebrates, 518.3 mg/L	
IC50, (16h), Water microorganisms, 5 g/L	
LC0, (96h), fish, 2.15 g/L	
NOEC, (21d), Invertebrates, 97.7 - 174.6 mg/L	
NOEC, (21d), fish, 174.6 mg/L	
NOEC, (72h), Algae, 62.5 - 499 mg/L	
LC100, (96h), fish, 4.6 g/L	
EC10, (21d), Invertebrates, 233.9 - 235.6 mg/L	
EC10, (72h), Algae, 151 - 1185 mg/L	
EC20, (72h), Algae, 270 - 364 mg/L	
2-(2-Methoxyethoxy)ethanol, CAS: 111-77-3	
LC50, (96h), Pimephales promelas, 5741 mg/L	
EC50, (96h), Pseudokirchneriella subcapitata, > 1000 mg/L	
EC50, (48h), Daphnia magna, 1192 mg/L	
Polyethylene glycol butyl ether, CAS: 9004-77-7	
LC50, (96h), fish, 1.8 g/L	
EC50, (72h), Algae, 391 mg/L	
EC50, (48h), Acartia tonsa, 310 mg/L	

12.2 Persistence and degradability

Behaviour in environment

compartments

Not determined

Behaviour in sewage plant

Not determined

Biological degradability

The product is biodegradable.

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.

Ferdinand Bilstein GmbH + Co. KG

Date printed 25.05.2022, Revision 25.05.2022

Version 12. Supersedes version: 11

Page 11 / 15

12.7 Other adverse effects

Ecological data of complete product are not available.

Do not discharge product unmonitored into the environment or into the drainage.

The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Coordinate disposal with the disposal contractor/authorities if necessary.

Contaminated packaging

Packaging that cannot be cleaned should be disposed of as for product.

Uncontaminated packaging may be taken for recycling.

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 Not applicable

IMDG

Air transport in accordance with IATA Not applicable

DOT Road Shipment Information (49 Not applicable

CFR)

14.2 UN proper shipping name

Transport by land according to

ADR/RID

NO DANGEROUS GOODS

Inland navigation (ADN)

NO DANGEROUS GOODS

IMDG

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

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

DOT Road Shipment Information (49 Not applicable

CFR)

Ferdinand Bilstein GmbH + Co. KG

Date printed 25.05.2022, Revision 25.05.2022

Version 12. Supersedes version: 11

Page 12 / 15

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**

Air transport in accordance with IATA Not applicable

DOT Road Shipment Information (49 Not applicable CFR)

14.4 Packing group

Transport by land according to ADR/RID

Not applicable

Inland navigation (ADN)

Not applicable

Marine transport in accordance with Not applicable

Air transport in accordance with IATA Not applicable

DOT Road Shipment Information (49 Not applicable CFR)

14.5 Environmental hazards

Transport by land according to

ADR/RID

No

Inland navigation (ADN)

No

Marine transport in accordance with No **IMDG**

Air transport in accordance with IATA No

DOT Road Shipment Information (49 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



Ferdinand Bilstein GmbH + Co. KG

Date printed 25.05.2022, Revision 25.05.2022

Version 12. Supersedes version: 11

Page 13 / 15

SECTION 15: Regulatory information

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

US Regulations

National regulations 29 CFR 1910.1200-HCS 2012, OSHA-PEL, ACGIH-TLV, NTP, IARC, SARA Title III, NFPA,

TSCA, California - Prop. 65

- SARA, 302 Does not contain any relevant substances fulfilling the classification criteria.

- SARA, 311 - SARA, 313

- CA Proposition 65 No components require labeling under California Proposition 65.

No chemical substances in this material are named on the California P65 list.

- TSCA All chemical substances in this material are included on or exempted from listing on the TSCA

Inventory.

- FDA

American Conference of

Governmental Industrial Hygienists -

Does not contain any relevant substances fulfilling the classification criteria.

ACGIH

International Agency for Research on Does not contain any relevant substances fulfilling the classification criteria.

Cancer IARC

National Toxicology Program - NTP This product is named NTP - National Toxicology Program (contains CAS: 111-77-3).

HAP-VOC No information available.

Transport-regulations DOT-Classification, ADR (2021); IMDG-Code (2021, 40. Amdt.); IATA-DGR (2022)

15.2 Chemical safety assessment

Not applicable



Ferdinand Bilstein GmbH + Co. KG

Date printed 25.05.2022, Revision 25.05.2022

Version 12. Supersedes version: 11

Page 14 / 15

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



Ferdinand Bilstein GmbH + Co. KG

Date printed 25.05.2022, Revision 25.05.2022

Version 12. Supersedes version: 11

Page 15 / 15

NFPA Ratings



TOP, FLAMMABILITY: 1 - Slight Hazard LEFT, HEALTH: 2*- Moderate chronic Hazard RIGHT, REACTIVITY: 0 - Minimal Hazard BOTTOM, SPECIAL NOTICE: -

HMIS Ratings



- 2*- Moderate chronic Hazard
- 1 Slight Hazard
- 0 Minimal Hazard
- X Personal protection rating to be supplied by user depending on use conditions

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

None