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

1.1 Product identifier

grease
Article number: 31941, 31942

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

1.2.1 Relevant uses

Grease

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

Skin Sens. 1: H317 May cause an allergic skin reaction.
Repr. 1B: H360Df May damage the unborn child. Suspected of damaging fertility.
Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects.

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 DANGER

Contains: Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, CAS: 68411-46-1

5,5'-Dithiodi-1,3,4-thiadiazole-2(3H)-thione, CAS: 72676-55-2

Naphthenic acids, zinc salts, basic, CAS: 84418-50-8

Hexanoic acid, 2-ethyl-, zinc salt, basic, CAS: 85203-81-2

Hazard statements
H317 May cause an allergic skin reaction.
H360Df May damage the unborn child. Suspected of damaging fertility.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements
P201 Obtain special instructions before use.
P261 Avoid breathing vapors/spray.
P273 Avoid release to the environment.
P280 Wear protective gloves.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents / container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Special labelling Restricted to professional users.

2.3 Other hazards

Physico-chemical hazards No particular hazards known.

Human health dangers Contains no ingredients with endocrine-disrupting properties.

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.

SECTION 3: Composition / Information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

The product is a mixture.

Range [%]	Substance
5 - < 10	Dilithium azelate
	CAS: 38900-29-7
1 - < 2,5	Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)
	CAS: 4259-15-8
0,1 - < 1	Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene
	CAS: 68411-46-1
0,1 - < 1	5,5'-Dithiodi-1,3,4-thiadiazole-2(3H)-thione
	CAS: 72676-55-2
0,25 - < 1	2,6-di-tert-butyl-p-cresol
	CAS: 128-37-0
0,1 - < 1	Naphthenic acids, zinc salts, basic
	CAS: 84418-50-8
0,1 - < 0,3	Hexanoic acid, 2-ethyl-, zinc salt, basic
	CAS: 85203-81-2

Comment on component parts For full text of H-statements: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information Change soaked clothing.

Inhalation Ensure supply of fresh air.
In the event of symptoms seek medical treatment.

Skin contact When in contact with the skin, clean with soap and water.
Consult a doctor if skin irritation persists.

Eye contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Ingestion Seek medical advice immediately.
Do not induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Allergic reactions

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.
Carbon monoxide (CO)

5.3 Advice for firefighters

Use self-contained breathing apparatus.

Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.
Cool containers at risk with water spray jet.

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.

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 in a well-ventilated place.
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)

Substance
2,6-di-tert-butyl-p-cresol
CAS: 128-37-0
Long-term exposure: 2 mg/m³, ACGIH, A4 (i, h)

DNEL

Substance
2,6-di-tert-butyl-p-cresol, CAS: 128-37-0
Industrial, inhalative, Long-term - systemic effects, 1.76 mg/m³
Industrial, dermal, Long-term - systemic effects, 500 µg/kg bw/day
general population, inhalative, Long-term - systemic effects, 435 µg/m³
general population, dermal, Long-term - systemic effects, 250 µg/kg bw/day
general population, oral, Long-term - systemic effects, 250 µg/kg bw/day
Dilithium azelate, CAS: 38900-29-7
Industrial, dermal, Acute - local effects, 46 µg/cm²
general population, dermal, Acute - systemic effects, 23 µg/cm²
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate), CAS: 4259-15-8
Industrial, dermal, Long-term - systemic effects, 9,6 mg/kg bw/d
Industrial, inhalative, Long-term - systemic effects, 6,6 mg/m³
general population, inhalative, Long-term - systemic effects, 1,67 mg/m³
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
Hexanoic acid, 2-ethyl-, zinc salt, basic, CAS: 85203-81-2
Industrial, inhalative, Long-term - systemic effects, 20.83 mg/m³
Industrial, dermal, Long-term - systemic effects, 6,41 mg/kg bw/d
general population, inhalative, Long-term - systemic effects, 10,42 mg/m³
general population, oral, Long-term - systemic effects, 3,21 mg/kg bw/d
general population, dermal, Long-term - systemic effects, 3,21 mg/kg bw/d
Naphthenic acids, zinc salts, basic, CAS: 84418-50-8
There are no DNEL values established for the substance.
5,5'-Dithiodi-1,3,4-thiadiazole-2(3H)-thione, CAS: 72676-55-2
Industrial, inhalative, Long-term - systemic effects, 3.29 mg/m³ (AF=75)
Industrial, dermal, Long-term - systemic effects, 0.93 mg/kg bw/d (AF=300)
general population, dermal, Long-term - systemic effects, 0.33 mg/kg bw/d (AF=600)
general population, inhalative, Long-term - systemic effects, 0.56 mg/m³ (AF=150)
general population, oral, Long-term - systemic effects, 0.17 mg/kg bw/d (AF=600)
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, CAS: 68411-46-1
Industrial, inhalative, Long-term - systemic effects, 0,31 mg/m³
Industrial, dermal, Long-term - systemic effects, 0,44 mg/kg bw/day
general population, inhalative, Long-term - systemic effects, 0,08 mg/m³
general population, dermal, Long-term - systemic effects, 0,22 mg/kg bw/day
general population, oral, Long-term - systemic effects, 0,05 mg/kg bw/day

PNEC

Substance

2,6-di-tert-butyl-p-cresol, CAS: 128-37-0
freshwater, 199 ng/L
sediment (seawater), 19.9 ng/L
sewage treatment plants (STP), 17 µg/L
sediment (freshwater), 458.19 µg/kg sediment dw
sediment (seawater), 45.82 µg/kg sediment dw
oral (food), 16.67 mg/kg food
Dilithium azelate, CAS: 38900-29-7
freshwater, 23 µg/L
seawater, 2,3 µg/L
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate), CAS: 4259-15-8
freshwater, 4 µg/L (AF= 100)
seawater, 4.6 µg/L (AF= 10 000)
sewage treatment plants (STP), 3.8 mg/L (AF= 100)
sediment (freshwater), 0.322 mg/kg dw
sediment (seawater), 0.0322 mg/kg dw
soil, 0.062 mg/kg dw
oral (food), 8.33 mg/kg food (AF=300)
Hexanoic acid, 2-ethyl-, zinc salt, basic, CAS: 85203-81-2
freshwater, 89,6 µg/L
seawater, 26,5 µg/L
sewage treatment plants (STP), 226 µg/L
sediment (freshwater), 8,17 mg/kg sediment dw
sediment (seawater), 0,817 mg/kg sediment dw
soil, 1,36 mg/kg soil dw
Naphthenic acids, zinc salts, basic, CAS: 84418-50-8
freshwater, 6,39 µg/L
seawater, 0,64 µg/L
sewage treatment plants (STP), 147,73 µg/L
sediment (freshwater), 31,93 mg/kg Sediment dw
sediment (seawater), 3,19 mg/kg Sediment dw
soil, 6,38 mg/kg Boden dw
5,5'-Dithiodi-1,3,4-thiadiazole-2(3H)-thione, CAS: 72676-55-2
soil, 0.166 mg/kg soil dw
freshwater, 0.003 mg/L (AF=1000)
seawater, 0 mg/L (AF=10 000)
sewage treatment plants (STP), 0.31 mg/L (AF=10)
sediment (freshwater), 0.039 mg/kg dw
sediment (seawater), 0.004 mg/kg dw
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, CAS: 68411-46-1
freshwater, 0,034 mg/L
seawater, 0,003 mg/L
sewage treatment plants (STP), 10 mg/L
sediment (freshwater), 0,446 mg/kg sediment dw
sediment (seawater), 0,045 mg/kg sediment dw
soil, 17,6 mg/kg soil dw
oral (food), 0,833 mg/kg food

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. General 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. > 0,38 mm; Nitrile rubber, >480 min (EN 374-1/-2/-3).
Skin protection	Protective clothing (EN 340)
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	light brown
Odor	characteristic
Odor threshold	Not applicable
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
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Oxidizing properties	No
Vapor pressure/gas pressure [kPa]	Not applicable
Density [g/cm³]	1,15 (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: 200°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

Strong heating.

10.5 Incompatible materials

Oxidizing agent
Strong bases.
strong acids

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

Product
ATE-mix, oral, 33658 mg/kg

Substance
2,6-di-tert-butyl-p-cresol, CAS: 128-37-0
LD50, oral, Rat, 2930 - 6000 mg/kg bw
Dilithium azelate, CAS: 38900-29-7
LD50, oral, Rat, 300 mg/kg bw
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate), CAS: 4259-15-8
LD50, oral, Rat, 3100 mg/kg bw
Hexanoic acid, 2-ethyl-, zinc salt, basic, CAS: 85203-81-2
LD50, oral, Rat, 2000 - 5000 mg/kg bw
Naphthenic acids, zinc salts, basic, CAS: 84418-50-8
LD50, oral, Rat, > 2000 mg/kg bw
5,5'-Dithiodi-1,3,4-thiadiazole-2(3H)-thione, CAS: 72676-55-2
LD50, oral, Rat, > 2000 mg/kg
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, CAS: 68411-46-1
LC50, oral, Rat, > 5000 mg/kg, OECD 401

Acute dermal toxicity

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

Substance
2,6-di-tert-butyl-p-cresol, CAS: 128-37-0
LD50, dermal, Rat, > 2000 mg/kg bw
Dilithium azelate, CAS: 38900-29-7
LD50, dermal, Rat, > 2000 mg/kg bw
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate), CAS: 4259-15-8
LD50, dermal, Rabbit, 5000 mg/kg bw
Hexanoic acid, 2-ethyl-, zinc salt, basic, CAS: 85203-81-2
LD50, dermal, Rat, > 2 000 mg/kg
Naphthenic acids, zinc salts, basic, CAS: 84418-50-8
LD50, dermal, Rat, > 2000 mg/kg bw
5,5'-Dithiodi-1,3,4-thiadiazole-2(3H)-thione, CAS: 72676-55-2
LD50, dermal, Rabbit, > 2000 mg/kg
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, CAS: 68411-46-1
LD50, dermal, Rat, > 2000 mg/kg, OECD 402

Acute inhalational toxicity

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

Substance

Naphthenic acids, zinc salts, basic, CAS: 84418-50-8
LC50, inhalative, Rat, > 0.42 mg/l/4h

Serious eye damage/irritation

CAS 4259-15-8 (< 50%) Slight irritant effect - does not require labelling.
Based on the information available, the classification criteria have not been fulfilled.
The classification occurred based on substance-specific concentration limits.

Substance
2,6-di-tert-butyl-p-cresol, CAS: 128-37-0
Eye, non-irritating
Dilithium azelate, CAS: 38900-29-7
Rabbit, OECD 406, non-irritating
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate), CAS: 4259-15-8
Eye, Rabbit, OECD 405, corrosive
Hexanoic acid, 2-ethyl-, zinc salt, basic, CAS: 85203-81-2
Eye, irritant
Naphthenic acids, zinc salts, basic, CAS: 84418-50-8
Eye, Rabbit, OECD 405, non-irritating
5,5'-Dithiodi-1,3,4-thiadiazole-2(3H)-thione, CAS: 72676-55-2
Eye, non-irritating
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, CAS: 68411-46-1
Eye, OECD 405, non-irritating

Skin corrosion/irritation

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

Substance
2,6-di-tert-butyl-p-cresol, CAS: 128-37-0
dermal, non-irritating
Dilithium azelate, CAS: 38900-29-7
dermal, non-irritating
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate), CAS: 4259-15-8
dermal, Rabbit, OECD 404, non-irritating
Naphthenic acids, zinc salts, basic, CAS: 84418-50-8
dermal, Rabbit, OECD 404, non-irritating
5,5'-Dithiodi-1,3,4-thiadiazole-2(3H)-thione, CAS: 72676-55-2
dermal, non-irritating
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, CAS: 68411-46-1
dermal, non-irritating

Respiratory or skin sensitisation

May cause an allergic skin reaction.
Based on the information available, the classification criteria have been fulfilled.
Calculation method

Substance
2,6-di-tert-butyl-p-cresol, CAS: 128-37-0
dermal, non-sensitizing
Dilithium azelate, CAS: 38900-29-7
dermal, mouse, OECD 429, non-sensitizing
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate), CAS: 4259-15-8
dermal, Guinea pig, OECD 406, non-sensitizing
Hexanoic acid, 2-ethyl-, zinc salt, basic, CAS: 85203-81-2
dermal, non-sensitizing

Naphthenic acids, zinc salts, basic, CAS: 84418-50-8
dermal, Guinea pig, OECD 406, sensitising
5,5'-Dithiodi-1,3,4-thiadiazole-2(3H)-thione, CAS: 72676-55-2
dermal, sensitising
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, CAS: 68411-46-1
dermal, Guinea pig, OECD 406, 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
2,6-di-tert-butyl-p-cresol, CAS: 128-37-0
NOAEL, oral, Rat, 25 - 70 mg/kg bw/day
Dilithium azelate, CAS: 38900-29-7
NOAEL, dermal, Rat, 298 mg/kg bw/day (systemic effects), no adverse effect observed
NOAEL, dermal, Rat, 230 µg/cm² (local effects), adverse effect observed
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate), CAS: 4259-15-8
NOAEL, oral, Rat, 125 mg/kg bw/day
Naphthenic acids, zinc salts, basic, CAS: 84418-50-8
NOAEL, oral, Rat, 50 mg/kg bw/day
5,5'-Dithiodi-1,3,4-thiadiazole-2(3H)-thione, CAS: 72676-55-2
NOAEL, oral, Rat, 300 mg/kg bw/day

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

Substance
2,6-di-tert-butyl-p-cresol, CAS: 128-37-0
in vitro, negativ
in vivo, negativ
Dilithium azelate, CAS: 38900-29-7
OECD 471, no adverse effect observed
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate), CAS: 4259-15-8
InVitro, OECD 471, negativ
InVivo, OECD 474, negativ
Hexanoic acid, 2-ethyl-, zinc salt, basic, CAS: 85203-81-2
in vitro, negativ
in vivo, negativ
Naphthenic acids, zinc salts, basic, CAS: 84418-50-8
InVitro, OECD 471, negativ
InVivo, OECD 474, negativ
5,5'-Dithiodi-1,3,4-thiadiazole-2(3H)-thione, CAS: 72676-55-2
in vitro, positive
in vivo, negativ
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, CAS: 68411-46-1
in vitro, negativ

Reproduction toxicity May damage the unborn child.
Suspected of damaging fertility.
Based on the information available, the classification criteria have been fulfilled.
Calculation method

- Fertility

Substance
Dilithium azelate, CAS: 38900-29-7
NOAEL, Rat, 298,5 mg/kg bw/d (Effect on fertility), no adverse effect observed
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate), CAS: 4259-15-8
NOAEL, Rat, 30 mg/kg bw/day, OECD 421
Naphthenic acids, zinc salts, basic, CAS: 84418-50-8
NOAEL, oral, Rat, 250 mg/kg bw/day
5,5'-Dithiodi-1,3,4-thiadiazole-2(3H)-thione, CAS: 72676-55-2
NOAEL, oral, Rat, 300 mg/kg bw/d (Effect on fertility)
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, CAS: 68411-46-1
NOAEL, oral, Rat, 54 mg/kg bw/day, adverse effect observed

- Development

Substance
2,6-di-tert-butyl-p-cresol, CAS: 128-37-0
NOAEL, oral, Rat, 25 mg/kg bw/day
Dilithium azelate, CAS: 38900-29-7
NOAEL, Rat, 298,5 mg/kg bw/d (Effect on developmental toxicity, no adverse effect observed
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate), CAS: 4259-15-8
NOAEL, Rat, 30 mg/kg bw/day, OECD 421
Hexanoic acid, 2-ethyl-, zinc salt, basic, CAS: 85203-81-2
NOAEL, oral, Rat, 100 mg/kg bw/day, adverse effect observed
Naphthenic acids, zinc salts, basic, CAS: 84418-50-8
NOAEL, oral, Rat, 188 mg/kg bw/day

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

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

SECTION 12: Ecological information

12.1 Toxicity

Substance
2,6-di-tert-butyl-p-cresol, CAS: 128-37-0
LC50, (96h), fish, 199 - 570 µg/L
EC50, (48h), Invertebrates, 480 - 610 µg/L
EC50, (96h), Algae, 758 µg/L
NOEC, (21d), Invertebrates, 23 - 316 µg/L
NOEC, (33d), fish, 53 µg/L
Dilithium azelate, CAS: 38900-29-7
LC50, (96h), fish, 100 mg/L
EC50, (48h), Crustacea, 100 mg/L
EC50, (72h), Algae, 100 mg/L
Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate), CAS: 4259-15-8
EL50, (48h), Daphnia magna, 75 mg/l (OECD 202)
NOEC, (21d), Daphnia magna, 0,4 mg/l (OECD 211)
LL50, (96h), Rainbow trout, 4,4 mg/l (OECD 203)
ErL50, (72h), Scenedesmus subspicatus, 410 mg/l (OECD 201)
EbL50, (72h), Scenedesmus subspicatus, 240 mg/l (OECD 201)
Hexanoic acid, 2-ethyl-, zinc salt, basic, CAS: 85203-81-2
LC50, (4d), fish, 112 - 100000 µg/L
LC50, (48h), Invertebrates, 95 - 1220 µg/L
EC50, (72h), Algae, 49,3 mg/L
Naphthenic acids, zinc salts, basic, CAS: 84418-50-8
LC50, (4d), fish, 112 - 5620 µg/L
EC50, (48h), Invertebrates, 155 - 20 000 µg/L
EC50, (72h), Algae, 3,62 - 29,6 mg/L
5,5'-Dithiodi-1,3,4-thiadiazole-2(3H)-thione, CAS: 72676-55-2
LC50, (96h), Pimephales promelas, > 454 mg/L
EC50, (48h), Daphnia magna, 3 mg/L
EC50, (72h), Pseudokirchneriella subcapitata, 20 mg/L
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, CAS: 68411-46-1
LC50, (96h), fish, > 100 mg/kg (OECD 203)
EC50, (72h), Algae, > 100 mg/kg (OECD 201)
EC50, (48h), Daphnia magna, 51 mg/kg (OECD 202)

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.
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

In according to RoHS!
Coordinate disposal with the disposal contractor/authorities if necessary.

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

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

National regulations	29 CFR 1910.1200-HCS 2012, OSHA-PEL, ACGIH-TLV, NTP, IARC, SARA Title III, NFPA, TSCA, California - Prop. 65
- SARA, 302	No information available.
- SARA, 311	No information available.
- SARA, 313	No information available.
- CA Proposition 65	Some chemical substances Diethanolamine in this material are named in 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 - ACGIH	No information available.
International Agency for Research on Cancer IARC	IARC: Group 2B carcinogen CAS: 111-42-2 IARC: Group 3 CAS: 128-37-0
National Toxicology Program - NTP	No information available.
HAP-VOC	< 3%
Transport-regulations	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: 2*- Moderate chronic Hazard
RIGHT, REACTIVITY: 0 - Minimal Hazard
BOTTOM, SPECIAL NOTICE: -

HMIS Ratings

HEALTH	2*
FLAMMABILITY	1
PHYSICAL HAZARD	0
PERSONAL PROTECTION	C

2*- Moderate chronic Hazard
1 - Slight Hazard
0 - Minimal Hazard
C - Safety Glasses, Gloves and Protection Apron

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, 2.1, 2.2, 2.3, 3.2, 4.2, 8.1, 8.2, 9.1, 9.2, 10.5, 11.1, 11.2, 12.6, 12.7, 15.1, 16.1, 16.2, 16.3