

Safety Data Sheet HighPerformance Color Light Red

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

1.1. Product identification

Name: HighPerformance Color Light Red

1.2. Relevant identifies uses of the substance or mixture and uses advised against:

VOC free, polyfunctional colorant suitable for water-based products for industry, decorative and wood

1.3. Details of the supplier of the safety data sheet:

edelundstein GmbH
Einsteinstraße 12
D-33104 Paderborn
www.edel-und-stein.com
info@edel-und-stein.com

1.4. Emergency telephone number:

05254/9330731

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture:

EC regulation criteria 1272/2008 (CLP):

Skin Sens. 1, **H317** May cause an allergic skin reaction

Adverse physicochemical, human health an enviromental effects: No other hazards

2.2. Label elements

Symbols:



Warning Hazard statements:

H317 May cause an allergic skin reaction

Precautionary statements:

P261 Avoid breathing dust/fume/gas/mist/vapours/spray
 P272 Contaminated work clothing should not be allowed out of the workplace.
 P280 Wear protective gloves/clothing and eye/face protection.
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P362+P364 Take off contaminated clothing and wash it before reuse.
 P501 Dispose of contents/container in accordance with applicable regulations.

Special Provisions:

EUH208 Contains 2-octyl-2H-isothiazol-3-one. May produce an allergic reaction.
 EUH208 Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.
 EUH208 Contains reaction mass of 5-chloro-2-methyl-2H-isothiazolin-3-one [EC no. 247-500-7]; and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1). May produce an allergic reaction.

Contains:

2-methyl-2H-isothiazol-3-one

Special provisions according to Annex XVII of REACH and subsequent amendments:
 None

2.3. Other hazards

1195.P00130/6

vPvB Substances: None - PBT Substances: None

Other Hazards: No other hazards

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances.

Not applicable.

3.2. Mixtures.

Hazardous components within the meaning of the CLP regulation and related classification:

>= 0.1% - < 0.25% 1-methoxy-2-propanol; propylene glycol mono methyl ether
 REACH No.: 01-2119457435-35-XXXX, Index Number: 603-064-00-3, CAS: 107-98-2, EC: 203-539-1

| | | |
|--------------|------|------------------------------------|
| Flam. Liq. 3 | H226 | Flammable liquid and vapour. |
| STOT SE 3 | H336 | May cause drowsiness or dizziness. |

200 ppm **2-ottil-2H-isothiazol-3-one**

Index number: 613-112-00-5, CAS: 26530-20-1, EC: 247-761-7

| | | |
|--------------------|------|---|
| Skin Corr. 1B | H314 | Causes severe skin burns and eye damage. |
| Skin Sens. 1,1A,1B | H317 | May cause an allergic skin reaction. |
| Aquatic Acute 1 | H400 | Very toxic to aquatic life. M=10. |
| Aquatic Chronic 1 | H410 | Very toxic to aquatic life with long lasting effects. M=1. |
| Acute Tox. 3 | H311 | Toxic in contact with skin. |
| Acute Tox. 3 | H331 | Toxic if inhaled. |
| Acute Tox. 4 | H302 | Harmful if swallowed. |

81 ppm **1,2-benzisotiazol-3(2H)-one**

REACH No.: 01-2120761540-60-XXXX, Numero Index: 613-088-00-6, CAS: 2634-33-5, EC: 220-120-9

| | | |
|-------------------|------|--|
| Skin Irrit. 2 | H315 | Causes skin irritation. |
| Aquatic Chronic 2 | H411 | Toxic to aquatic life with long lasting effects. |
| Eye Dam. 1 | H318 | Causes serious eye damage. |
| Skin Sens. 1 | H317 | May cause an allergic skin reaction. |
| Aquatic Acute 1 | H400 | Very toxic to aquatic life. |
| Acute Tox. 4 | H302 | Harmful if swallowed. |

72 ppm **2-metil-2H-isotiazol-3-one**

REACH No.: 01-2120764690-50-XXXX, CAS: 2682-20-4, EC: 220-239-6

| | | |
|-------------------|------|---|
| Acute Tox. 2 | H330 | Fatal if inhaled. |
| Acute Tox. 3 | H311 | Toxic in contact with skin. |
| Acute Tox. 3 | H301 | Toxic if swallowed. |
| Skin Corr. 1B | H314 | Causes severe skin burns and eye damage. |
| Eye Dam. 1 | H318 | Causes serious eye damage. |
| Skin Sens. 1A | H317 | May cause an allergic skin reaction. |
| Aquatic Acute 1 | H400 | Very toxic to aquatic life. M=10. |
| Aquatic Chronic 1 | H410 | Very toxic to aquatic life with long lasting effects. M=1. |

EUH071 Corrosive to the respiratory tract..

15 ppm

reaction mass of 5-chloro-2-methyl-2H-isothiazolin-3-one; and 2- methyl-2H-isothiazol-3-one (3:1).

Numero Index: 613-167-00-5, CAS: 55965-84-9

| | | |
|-------------------|--------|--|
| Acute Tox. 2 | H330 | Fatal if inhaled. |
| Acute Tox. 2 | H310 | Fatal in contact with skin. |
| Acute Tox. 3 | H301 | Toxic if swallowed. |
| Skin Corr. 1C | H314 | Causes severe skin burns and eye damage. |
| Eye Dam. 1 | H318 | Causes serious eye damage. |
| Skin Sens. 1A | H317 | May cause an allergic skin reaction. |
| Aquatic Acute 1 | H400 | Very toxic to aquatic life. M=100 |
| Aquatic Chronic 1 | H410 | Very toxic to aquatic life with long lasting effects. M=100. |
| | EUH071 | Corrosive to the respiratory tract. |

The full text of H-phrases is shown in section 16.

4. FIRST AID MEASURES

4.1. Description of first aid measures:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap. Wash thoroughly the body (shower or bath). Remove contaminated clothing immediately and dispose off safely. In case of eyes contact: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In case of Ingestion: Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY. In case of Inhalation: Remove casualty to fresh air and keep warm and at rest.

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

None

4.3. Indication of any immediate medical attention and special treatment needed:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Treatment: None

5. FIREFIGHTING MEASURES

5.1. Extinguishing media:

Suitable extinguishing media:

Water.

Carbon dioxide (CO₂).

Extinguishing media which must not be used for safety reasons: None in particular.

5.2. Special hazards arising from the substance or mixture:

Do not inhale explosion and combustion gases. Burning produces heavy smoke.

5.3. Advice for firefighters:

Use suitable breathing apparatus. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Move undamaged containers from immediate hazard area if it can be done safely.

6. ACCIDENTAL RELEASE MEASURES**6.1. Personal precautions, protective equipment and emergency procedures:**

Wear personal protection equipment. Remove all sources of ignition. Remove persons to safety. See protective measures under point 7 and 8.

6.2. Environmental precautions:

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains. Retain contaminated washing water and dispose it. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities. Suitable material for taking up: absorbing material, organic, sand..

6.3. Methods and material for containment and cleaning up:

Wash with plenty of water.

6.4. Reference to other sections:

See also sections 8 and 13.

7. HANDLING AND STORAGE**7.1. Precautions for safe handling:**

Avoid contact with skin and eyes, inhalation of vapours and mists. Don't use empty container before they have been cleaned. Before making transfer operations, assure that there aren't any incompatible material residuals in the containers. Contaminated

clothing should be changed before entering eating areas. Do not eat or drink while working. See also section 8 for recommended protective equipment.

7.2. Conditions for safe storage, including any incompatibilities:

Keep away from food, drink and feed. Incompatible materials: None in particular. Instructions as regards storage premises: Adequately ventilated premises.

7.3. Specific end use(s):

None in particular.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters:

1-methoxy-2-propanol; propylene glycol mono methyl ether - CAS: 107-98-2
 UE - TWA(8h): 375 mg/m³, 100 ppm - STEL: 563 mg/m³, 150 ppm - Note: Skin
 MAK - TWA(8h): 187 mg/m³, 50 ppm – STEL(15min): 187 mg/m³, 50 ppm - Note:
 AT AUSTRIA
 ACGIH - TWA(8h): 50 ppm - STEL: 100 ppm - Note: A4 - Eye and URT irr
 TLV - TWA(8h): 270 mg/m³ - STEL(15min): 550 mg/m³ - Note: CZ – CZECH REP.
 MAK - TWA(8h): 370 mg/m³, 100 ppm - STEL(15min): 740 mg/m³, 200 ppm - Note:
 DE - GERMANY
 VLEP - TWA(8h): 188 mg/m³, 50 ppm - STEL(15min): 375 mg/m³, 10 ppm - Note:
 FR FRANCE
 GVI - TWA(8h): 375 mg/m³, 100 ppm - STEL: 568 mg/m³, 150 ppm - Note: HR
 CROATIA: K (Skin)

DNEL Exposure Limit Values

1-methoxy-2-propanol; propylene glycol mono methyl ether - CAS: 107-98-2

Consumer: 33 mg/kg p.c./day - Exposure: Human Oral - Frequency: Long Term, systemic effects

Industrial worker: 369 mg/m³ – Professional worker: 369 mg/m³ - Consumer: 43.9 mg/m³ - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Industrial worker: 183 mg/kg p.c./day - Professional worker: 183 mg/kg p.c./day - Consumer: 78 mg/kg p.c./day - Exposure: Human Dermal - Frequency: Long Term, systemic effects

Industrial worker: 553.5 mg/m³ - Professional worker: 553.5 mg/m³ – Exposure: Human Inhalation - Frequency: Short Time, systemic effects

Industrial worker: 553.5 mg/m³ - Professional worker: 553.5 mg/m³ - Exposure: Human Inhalation - Frequency: Short Time, local effects

Concentration expected to not have effects on the environment - PNEC**1-methoxy-2-propanol; propylene glycol mono methyl ether - CAS: 107-98-2**

Reference value in freshwater: 10 mg/l

Reference value for sediments in freshwater: 52.3 mg/kg

Reference value for sediments in salt water: 5.2 mg/kg

Reference value for STP micro-organisms: 100 mg/l

Reference value for the land compartment: 4.59 mg/kg

8.2. Exposure controls:**EYE PROTECTION:**

Use close fitting safety goggles, don't use eye lens.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Protect hands with category III work gloves (see standard EN 374). The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability. The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

RESPIRATORY PROTECTION:

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type B filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required (DIN EN 141). Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. Not needed for normal use.

THERMAL HAZARDS:

None

ENVIRONMENTAL EXPOSURE CONTROLS:

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

APPROPRIATE ENGINEERING CONTROLS:

None

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties:

| | |
|--|--------------------------------|
| Appearance and Colour | Liquid, red |
| Odour | characteristic |
| Odour threshold. | Not available. |
| pH. | 8,5 |
| Melting point / freezing point. | Not relevant. |
| Initial boiling point and boiling range | > 100 °C. |
| Flash point. | > 93 °C. |
| Evaporation Rate | Not available. |
| Flammability of solids and gases | Not relevant. |
| Upper / Lower flammability or explosive limit. | Not relevant. |
| Vapour pressure. | Not available. |
| Vapour density | Not available. |
| Relative density. | 1,140 g/cm ³ – 20°C |
| Solubility in Water | soluble |
| Solubility in oil: | Not available |
| Partition coefficient: n-octanol/water | Not available. |
| Auto-ignition temperature. | Not relevant. |
| Decomposition temperature. | Not available. |
| Viscosity | 600 – 1000 mPA A3-V20 |
| Explosive properties | Not relevant. |
| Oxidising properties | Not available. |

9.2. Other information

| | |
|---------------------------------------|---------------|
| Miscibility: | Not available |
| Fat Solubility: | Not available |
| Conductivity: | Not available |
| Substance Groups relevant properties: | Not available |

10. STABILITY AND REACTIVITY

10.1. Reactivity.

Stable under normal conditions

10.2. Chemical stability.

Stable under normal conditions

10.3. Possibility of hazardous reactions.

None

10.4. Conditions to avoid.

Stable under normal conditions

10.5. Incompatible materials.

None in particular

10.6. Hazardous decomposition products.

None

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects:

Toxicological information of the mixture:

ACUTE TOXICITY:

It does not meet the classification criteria for this hazard class.

SKIN CORROSION / SKIN IRRITATION

It does not meet the classification criteria for this hazard class.

SEVERE EYE DAMAGE / EYE IRRITATION

It does not meet the classification criteria for this hazard class.

RESPIRATORY OR SKIN SENSITISATION

May produce an allergic reaction. Skin Sens. 1A H317

GERM CELLS MUTAGENICITY

It does not meet the classification criteria for this hazard class.

CARCINOGENICITY

It does not meet the classification criteria for this hazard class.

REPRODUCTIVE TOXICITY

It does not meet the classification criteria for this hazard class.

SPECIFIC TOXICITY FOR TARGET ORGANS (STOT) - SINGLE EXPOSURE

It does not meet the classification criteria for this hazard class.

SPECIFIC TOXICITY FOR TARGET ORGANS (STOT) - REPEATED EXPOSURE

It does not meet the classification criteria for this hazard class.

ASPIRATION HAZARD

It does not meet the classification criteria for this hazard class.

Toxicological information of the mixture:

2-propanolo; propilene glicol mono metil etere - CAS: 107-98-2

a) acute toxicity:

Test: LD50 - Oral - Species: Rat = 4016 mg/kg

Test: LD50 - Dermal - Species: Rat > 2000 mg/kg

Test: LC50 - Inhalation - Species: Rat = 54.6 mg/l - Duration: 4h

Test: LC50 - Vapours inhalation - Species: Rat > 7000 ppm - Duration: 8h

b) skin corrosion / skin irritation:

Test: Sensitization for Inhalation: None

1,2-benzisotiazol-3(2H)-one - CAS: 2634-33-5

a) acute toxicity:

Test: LD50: Skin - Species: Rat > 5000 mg/kg

Test: LD50: Oral - Species: Rat = 1020 mg/kg

Reaction mass of 5-chloro-2-methyl-2H-isothiazolin-3-one [EC no. 247-500-7]; and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1) - CAS: 55965-84-9

a) acute toxicity:

Test: LD50: Oral - Species: Rat = 66 mg/kg - Fount: OECD 401

Test: LD50: Skin - Species: Rat > 141 mg/kg - Fount: OECD 402

d) respiratory or skin sensitisation:

Test: skin sensitisation - Skin: Positive

12. ECOLOGICAL INFORMATION

12.1. Toxicity:

Adopt good working practices, so that the product is not released into the environment.

1-metossi-2-propanolo; propilene glicol mono metil etere - CAS: 107-98-2

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish > 6800 mg/l - Duration h: 96 - Note: Leuciscus Idus

Endpoint: EC50 - Species: Algae > 1000 mg/l - Duration h: 72

Endpoint: EC50 - Species: Daphnia > 21100-25900 mg/l - Duration h: 48

Endpoint: EC50 - Species: Fish = 20800 mg/l - Duration h: 96 - Note: Pimephales Promelas

b) Chronic aquatic toxicity:

Endpoint: NOEC - Species: Daphnia > 1000 mg/l - Duration h: 504

1,2-benzisotiazol-3(2H)-one - CAS: 2634-33-5

a) Aquatic acute toxicity:

Endpoint: EC50 - Species: Daphnia = 3.7 mg/l - Duration h: 48

Endpoint: EC50 - Species: Algae = 0.37 mg/l - Duration h: 72

Endpoint: LC50 - Species: Fish = 1.9 mg/l - Duration h: 96

Endpoint: EC50 - Species: Daphnia = 4.4 mg/l - Duration h: 48 - Note: Daphnia magna

Reaction mass of 5-chloro-2-methyl-2H-isothiazolin-3-one [EC no. 247-500-7]; and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1) - CAS: 55965-84-9

a) Aquatic acute toxicity:

Endpoint: EC50 - Species: Algae = 0.048 mg/l - Duration h: 72
 Endpoint: EC50 - Species: Daphnia = 0.1 mg/l - Duration h: 48
 Endpoint: EC50 - Species: Fish = 0.22 mg/l - Duration h: 96
 Endpoint: NOEC - Species: Algae = 0.0012 mg/l - Duration h: 72
 Endpoint: NOEC - Species: Daphnia = 0.004 mg/l - Note: 21 d
 Endpoint: NOEC - Species: Fish = 0.098 mg/l - Note: 28 d

12.2. Persistence and degradability:

1-metossi-2-propanolo; propilene glicol mono metil etere - CAS: 107-98-2
 Biodegradability: Rapidly biodegradable

12.3. Bioaccumulative potential:

1-metossi-2-propanolo; propilene glicol mono metil etere - CAS: 107-98-2
 Bioaccumulation: Not bioaccumulative - Test: Kow – Partition Coefficient - 0.49

12.4. Mobility in soil:

1-metossi-2-propanolo; propilene glicol mono metil etere - CAS: 107-98-2
 Mobility in soil: Mobile

12.5. Results of PBT and vPvB assessment:

vPvB Substances: None - PBT Substances: None

12.6. Other adverse effects:

None

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

Recover if possible. In so doing, comply with the local and national regulations currently in force

14. TRANSPORT INFORMATION

14.1. UN Number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class

Not applicable.

14.4. Packaging group

Not applicable.

14.5. Environmental hazards

Not applicable.

14.6. Special precautions for users.

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code.

Information not pertinent.

15. REGULATORY INFORMATION

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

D.Lgs. 9/4/2008 n. 81

D.M. Lavoro 26/02/2004 (Occupational exposure limit values)

Regulation (EC) n. 1907/2006 (REACH)

Regulation (EC) n. 1272/2008 (CLP)

Regulation (EC) n. 790/2009 (ATP 1 CLP) e (UE) n. 758/2013

Regulation (EC) 2015/830

Regulation (EC) n. 286/2011 (ATP 2 CLP)

Regulation (EC) n. 618/2012 (ATP 3 CLP)

Regulation (EC) n. 487/2013 (ATP 4 CLP)

Regulation (EC) n. 944/2013 (ATP 5 CLP)

Regulation (EC) n. 605/2014 (ATP 6 CLP)

Regulation (EC) n. 2015/1221 (ATP 7 CLP)

Regulation (EC) n. 2016/918 (ATP 8 CLP)

Regulation (EC) n. 2016/1179 (ATP 9 CLP)

Regulation (EC) n. 2017/776 (ATP 10 CLP)

Regulation (EC) n. 2018/669 (ATP 11 CLP)

Regulation (EC) n. 2018/1480 (ATP 13 CLP)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product: Restriction 3

Restrictions related to the substances contained: No restriction.

Volatile Organic compounds - VOCs = 0.68 %

Volatile Organic compounds - VOCs = 7.82 g/l

Volatile CMR substances = 0.00 %

Halogenated VOCs which are assigned the risk phrase R40 = 0.00 %

Organic Carbon - C = 0.00

Where applicable, refer to the following regulatory provisions:

- Ministerial Circulars 46 e 61 (Ammine aromatiche).
- Directive 2012/18/EU (Seveso III)
- Regulation 648/2004/CE (Detergents)
- D.L. 3/4/2006 n. 152 Environmental regulations
- Dir. 2004/42/CE (VOC Directive)

Provisions related to directives EU 2012/18 (Seveso III): N.A.

15.2 Chemical safety assessment:

No

16. OTHER INFORMATION

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

| | |
|--------------------|---|
| Flam. Liq. 3 | Flammable liquid, category 3 |
| Acute Tox. 2 | Acute Toxicity (Dermal) Category 2 |
| Acute Tox. 2 | Acute Toxicity (Inhalation), Category 2 |
| Acute Tox. 3 | Acute Toxicity (Dermal), Category 3 |
| Acute Tox. 3 | Acute Toxicity (Inhalation), Category 3 |
| Acute Tox. 3 | Acute Toxicity (Oral), Category 3 |
| Acute Tox. 4 | Acute Toxicity (Oral), Category 4 |
| Skin Corr. 1B | Skin corrosion, Category 1B |
| Skin Corr. 1C | Skin corrosion, Category 1C |
| Skin Irrit. 2 | Skin irritation, Category 2 |
| Eye Dam. 1 | Severe eye damage, Category 1 |
| Skin Sens. 1 | Skin sensitization, Category 1 |
| Skin Sens. 1,1A,1B | Skin sensitization, Category 1,1A,1B |
| Skin Sens. 1A | Skin sensitization, Category 1A |
| Repr. 2 | Reproductive toxicity, Category 2 |
| STOT SE 3 | Specific target organ toxicity – single exposure, category 3 |
| Aquatic Acute 1 | Hazardous to aquatic environments, acute toxicity, category 1 |
| Aquatic Chronic 1 | Hazardous to aquatic environments, chronic toxicity, category 1 |
| Aquatic Chronic 2 | Hazardous to aquatic environments, chronic toxicity, category 2 |

KEY:

- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- EC NUMBER: Identification number in ESIS (European Substances Information System)
- CLP: Regulation EC 1272/2008
- DNEL: Derived no effect level
- EmS: Emergency Schedule
- GHS: Global harmonized system for classification and labelling of chemical products

- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization concentration for 50% of the test population
- IMDG: International maritime dangerous goods code - IMO: International Maritime Organization
- INDEX NUMBER: Index number of CLP Annex VI
- LC50: 50% of lethal concentration
- LD50: 50% lethal dose
- OEL: Occupational exposure level
- PBT: Persistent, bioaccumulative, and toxic according to REACH
- PEC: Predicted environmental concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: Regulation EC 1907/2006
- RID: Regulation concerning the international carriage of dangerous goods by rail
- TLV: Threshold limit value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic compound
- vPvB: Very persistent and very bioaccumulative according to REACH-WGK: Water hazard class (Germany)

GENERAL BIBLIOGRAPHY

1. Regulation (EU) 1907/2006 of the European Parliament (REACH)
 2. Regulation (EU) 1272/2008 of the European Parliament (CLP)
 3. Regulation (EU) 790/2009 of the European Parliament (I Atp. CLP)
 4. Regulation (EU) 2015/830 of the European Parliament
 5. Regulation (EU) 286/2011 of the European Parliament (II Atp. CLP)
 6. Regulation (EU) 618/2012 of the European Parliament (III Atp. CLP)
 7. Regulation (EU) 487/2013 of the European Parliament (IV Atp. CLP)
 8. Regulation (EU) 944/2013 of the European Parliament (V Atp. CLP)
 9. Regulation (EU) 605/2014 of the European Parliament (VI Atp. CLP)
 10. Regulation (EU) 2015/1221 of the European Parliament (VII Atp. CLP)
 11. Regulation (EU) 2016/918 of the European Parliament (VIII Atp. CLP)
- The Merck Index. - 10th Edition
 - Handling Chemical Safety
 - INRS - Fiche Toxicologique (toxicological sheet)
 - Patty - Industrial Hygiene and Toxicology
 - N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition

- IFA GESTIS Website
- ECHA website
- Database of SDS templates for chemical substances - Ministry of Health and National Institute of Health

Note: The information contained in this sheet is based on our knowledge at the date of the last version. The user must satisfy himself as to the suitability and completeness of the information in relation to the specific use of the product. Our company assumes no liability whatsoever for the suggested, improper, irresponsible, direct or indirect use of the product and recommends that those who use our products check themselves the reliability and completeness of the information in relation to the applications for which the product is intended. The information is the result of application knowledge and laboratory testing and is expressed as such. They do not constitute a commitment on our part, also in relation to any third party rights arising from damages of various kinds. Our company guarantees constant quality in its products: any ascertained liability shall be limited to the exclusive value of our product. Given the impossibility of controlling the ways in which our products are used on all the various sites, our company cannot assume any responsibility in relation to the application and execution skills of the works.