

## Safety data sheet

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

#### 1.1. Product identifier

Product name **NV ANTIRUGGINE**

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

Intended use **Water primer suitable for all ferrous surfaces, protects against corrosion and rust formation. Professional and domestic use.**

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

Name **Oikos Srl**  
 Full address **via Cherubini, 2**  
 District and Country **47043 Gatteo a Mare (FC)**  
**Italia**  
 Tel. **0039-0547-681412**  
 Fax **0039-0547-681430**

e-mail address of the competent person responsible for the Safety Data Sheet **CertificazioneProdotti@oikos-group.it**

#### 1.4. Emergency telephone number

For urgent inquiries refer to **Oikos s.r.l. 0039-0547-681412 (9.00-18.00 CET)**  
**NHS 111-dial 111**

### SECTION 2. Hazards identification

#### 2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of EC Regulation 1907/2006 and subsequent amendments.

Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:  
 Hazardous to the aquatic environment, chronic toxicity, category 3 H412 Harmful to aquatic life with long lasting effects.

#### 2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms: --

Signal words: --

Hazard statements:  
 H412 Harmful to aquatic life with long lasting effects.  
 EUH208 Contains: 1,2-Benzisothiazol-3(2H)-one  
 May produce an allergic reaction.

Precautionary statements:  
 P273 Avoid release to the environment.  
 P501 Dispose of contents / container in accordance with local regulation.

VOC (Directive 2004/42/EC) :

One-pack performance coatings.

VOC given in g/litre of product in a ready-to-use condition : 95.00  
 Limit value: 140.00

#### 2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

## SECTION 3. Composition/information on ingredients

## 3.1. Substances

Information not relevant

## 3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification 1272/2008 (CLP)
<b>2-BUTOXYETHANOL</b>		
CAS 111-76-2	1.5 ≤ x < 2	Acute Tox. 4 H302, Acute Tox. 4 H312, Acute Tox. 4 H332, Eye Irrit. 2 H319, Skin Irrit. 2 H315
EC 203-905-0		
INDEX 603-014-00-0		
Reg. no. 01-2119475108-36		
<b>TRIZINC BIS (ORTHOPHOSPHATE)</b>		
CAS 7779-90-0	1.5 ≤ x < 2	Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1
EC 231-944-3		
INDEX 030-011-00-6		
Reg. no. 01-2119485044-40-0000		
<b>ZINC OXIDE</b>		
CAS 1314-13-2	0.43 ≤ x < 0.45	Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1
EC 215-222-5		
INDEX 030-013-00-7		
Reg. no. 01-2119463881-32		
<b>2-(2-BUTOXYETHOXY)ETHANOL</b>		
CAS 112-34-5	0.31 ≤ x < 0.33	Eye Irrit. 2 H319
EC 203-961-6		
INDEX 603-096-00-8		
Reg. no. 01-2119475104-44		
<b>1,2-Benzisothiazol-3(2H)-one</b>		
CAS 2634-33-5	0.005 ≤ x < 0.0064	Acute Tox. 2 H330, Acute Tox. 4 H302, Eye Dam. 1 H318, Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Acute 1 H400 M=1, Aquatic Chronic 2 H411
EC 220-120-9		
INDEX 613-088-00-6		

The full wording of hazard (H) phrases is given in section 16 of the sheet.

## SECTION 4. First aid measures

## 4.1. Description of first aid measures

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully. Get medical advice/attention.

SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.

INGESTION: Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.

INHALATION: Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

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

Specific information on symptoms and effects caused by the product are unknown.

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

Information not available

## SECTION 5. Firefighting measures

## 5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT

Extinguishing substances are: carbon dioxide, foam, chemical powder. For product loss or leakage that has not caught fire, water spray can be used to disperse flammable vapours and protect those trying to stem the leak.

UNSUITABLE EXTINGUISHING EQUIPMENT

Do not use jets of water. Water is not effective for putting out fires but can be used to cool containers exposed to flames to prevent explosions.

## 5.2. Special hazards arising from the substance or mixture

### SECTION 5. Firefighting measures ... / >>

#### HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Excess pressure may form in containers exposed to fire at a risk of explosion. Do not breathe combustion products.

#### 5.3. Advice for firefighters

##### GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

##### SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

### SECTION 6. Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

#### 6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

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

Collect the leaked product into a suitable container. If the product is flammable, use explosion-proof equipment. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.

Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

#### 6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

### SECTION 7. Handling and storage

#### 7.1. Precautions for safe handling

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat. Avoid leakage of the product into the environment.

#### 7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store in a well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. Keep containers away from any incompatible materials, see section 10 for details.

#### 7.3. Specific end use(s)

Information not available

### SECTION 8. Exposure controls/personal protection

#### 8.1. Control parameters

Regulatory References:

DEU	Deutschland	MAK-und BAT-Werte-Liste 2012
ESP	España	INSHT - Límites de exposición profesional para agentes químicos en España 2015
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
POL	Polska	ROZPORZĄDZENIE MINISTRA PRACY I POLITYKI SPOŁECZNEJ z dnia 16 grudnia 2011r
EU	OEL EU	Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 91/322/EEC.

### SECTION 8. Exposure controls/personal protection ... / >>

TLV-ACGIH      ACGIH 2016

#### 2-(2-BUTOXYETHOXY)ETHANOL

##### Threshold Limit Value

Type	Country	TWA/8h		STEL/15min	
		mg/m3	ppm	mg/m3	ppm
AGW	DEU	67	10	100.5	15
MAK	DEU	67	10	100.5	15
VLA	ESP	67.5	10	101.2	15
VLEP	ITA	67.5	10	101.2	15
NDS	POL	67		100	
OEL	EU	67.5	10	101.2	15
TLV-ACGIH		66	10		

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

### 8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

#### HAND PROTECTION

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.

#### SKIN PROTECTION

Wear category I professional long-sleeved overalls and safety footwear (see Directive 89/686/EEC and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

#### EYE PROTECTION

Wear airtight protective goggles (see standard EN 166).

#### 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 A 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.

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. The protection provided by masks is in any case limited.

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

#### ENVIRONMENTAL EXPOSURE CONTROLS

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

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

### SECTION 9. Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Appearance		paste
Colour		White and the colour chart shades
Odour		Feeble
Odour threshold		Not applicable
pH		8,5-9
Melting point / freezing point		Not applicable
Initial boiling point	>	100 °C
Boiling range		Not applicable
Flash point		Not applicable
Evaporation Rate		Not applicable
Flammability of solids and gases		not flammable
Lower inflammability limit		Not applicable
Upper inflammability limit		Not applicable
Lower explosive limit		Not applicable
Upper explosive limit		Not applicable
Vapour pressure		Not applicable
Vapour density		Not applicable
Solubility		Mixable in water

**SECTION 9. Physical and chemical properties** ... / >>

Partition coefficient: n-octanol/water	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not applicable
Viscosity	4000 cps
Explosive properties	not applicable
Oxidising properties	not applicable

Not applicable it means that is not useful for the determination of hazard.

**9.2. Other information**

Information not available

**SECTION 10. Stability and reactivity****10.1. Reactivity**

There are no particular risks of reaction with other substances in normal conditions of use.

2-BUTOXYETHANOL  
Decomposes under the effect of heat.

**10.2. Chemical stability**

The product is stable in normal conditions of use and storage.

**10.3. Possibility of hazardous reactions**

No hazardous reactions are foreseeable in normal conditions of use and storage.

2-BUTOXYETHANOL  
May react dangerously with: aluminium, oxidising agents. Forms peroxides with: air.

2-(2-BUTOXYETHOXY)ETHANOL  
May react with: oxidising substances. May form peroxides with: oxygen. Develops hydrogen on contact with: aluminium. May form explosive mixtures with: air.

**10.4. Conditions to avoid**

None in particular. However the usual precautions used for chemical products should be respected.

2-BUTOXYETHANOL  
Avoid exposure to: sources of heat, naked flames.

2-(2-BUTOXYETHOXY)ETHANOL  
Avoid exposure to: air.

**10.5. Incompatible materials**

2-(2-BUTOXYETHOXY)ETHANOL  
Incompatible with: oxidising substances, strong acids, alkaline metals.

**10.6. Hazardous decomposition products**

2-BUTOXYETHANOL  
May develop: hydrogen.

2-(2-BUTOXYETHOXY)ETHANOL  
May develop: hydrogen.

**SECTION 11. Toxicological information**

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.

It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

**SECTION 11. Toxicological information** ... / >>**11.1. Information on toxicological effects**Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

2-(2-BUTOXYETHOXY)ETHANOL

WORKERS: inhalation; contact with the skin.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

2-(2-BUTOXYETHOXY)ETHANOL

May be absorbed by inhalation, ingestion and skin contact; is irritating for the skin and especially for the eyes. May cause damage to the spleen. At room temperature the danger of inhalation is unlikely, due to the low vapour pressure of the substance.

Interactive effects

Information not available

ACUTE TOXICITY

LC50 (Inhalation - vapours) of the mixture:

Not classified (no significant component)

LC50 (Inhalation - mists / powders) of the mixture:

&gt; 5 mg/l

LD50 (Oral) of the mixture:

&gt;2000 mg/kg

LD50 (Dermal) of the mixture:

&gt;2000 mg/kg

2-(2-BUTOXYETHOXY)ETHANOL

5660 mg/kg LD50 (Oral)

2700 mg/kg LD50 (Dermal)

2-BUTOXYETHANOL

1414 mg/kg LD50 (Oral)

99 mg/kg LD50 (Dermal)

2.2 mg/l/4h RE50 (Inhalation)

TRIZINC BIS (ORTHOPHOSPHATE)

&gt; 5000 mg/kg RE50 (Oral)

&gt; 5.7 mg/l/4h RE50 (Inhalation)

ZINC OXIDE

&gt; 5000 mg/kg RE50 (Oral)

&gt; 2000 mg/l RE50 (Dermal)

&gt; 5.7 mg/l RE50 (Inhalation)

1,2-Benzisothiazol-3(2H)-one

1193 mg/kg LD50 (Oral)

4115 mg/kg LD50 (Dermal)

SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class

SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

RESPIRATORY OR SKIN SENSITISATION

May produce an allergic reaction.

Contains:

1,2-Benzisothiazol-3(2H)-one

**SECTION 11. Toxicological information** ... / >>GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

**SECTION 12. Ecological information**

This product is dangerous for the environment and the aquatic organisms. In the long term, it have negative effects on aquatic environment.

**12.1. Toxicity**

## 2-(2-BUTOXYETHOXY)ETHANOL

LC50 - for Fish	1300 mg/l <i>Lepomis macrochirus</i>
EC50 - for Crustacea	> 100 mg/l/48h <i>Daphnia Magna</i>
EC50 - for Algae / Aquatic Plants	100 mg/l/96h <i>Desmodesmus subspicatus</i>

## 2-BUTOXYETHANOL

LC50 - for Fish	1464 mg/l/96h
EC50 - for Crustacea	1800 mg/l/48h
EC50 - for Algae / Aquatic Plants	1840 mg/l/72h
EC10 for Algae / Aquatic Plants	679 mg/l/72h
Chronic NOEC for Fish	100 mg/l 21 days
Chronic NOEC for Crustacea	100 mg/l 21 days
Chronic NOEC for Algae / Aquatic Plants	286 mg/l 72 h

## TRIZINC BIS (ORTHOPHOSPHATE)

LC50 - for Fish	0.78 mg/l/96h <i>Pimephales promelas</i>
EC50 - for Crustacea	0.86 mg/l/48h <i>Daphnia magna</i>

## ZINC OXIDE

LC50 - for Fish	0.14 mg/l/96h <i>Oncorhynchus mykiss</i>
EC50 - for Crustacea	0.17 mg/l/48h <i>Daphnia magna</i>
EC10 for Algae / Aquatic Plants	2.05 mg/l/72h
Chronic NOEC for Algae / Aquatic Plants	1.071 mg/l 16 days

## 1,2-Benzisothiazol-3(2H)-one

EC10 for Algae / Aquatic Plants	0.04 mg/l/72h <i>Selenastrum capricornutum</i>
Chronic NOEC for Fish	0.21 mg/l <i>Oncorhynchus mykiss</i>
Chronic NOEC for Crustacea	1.2 mg/l <i>Daphnia magna</i>

**12.2. Persistence and degradability**

**SECTION 12. Ecological information** ... / >>

2-(2-BUTOXYETHOXY)ETHANOL  
Solubility in water 1000 - 10000 mg/l  
Rapidly biodegradable

2-BUTOXYETHANOL  
Solubility in water 1000 - 10000 mg/l  
Rapidly biodegradable

TRIZINC BIS (ORTHOPHOSPHATE)  
Solubility in water 2.7 mg/l  
Biodegradability: Information not available

ZINC OXIDE  
Rapidly biodegradable

1,2-Benzisothiazol-3(2H)-one  
Rapidly biodegradable

**12.3. Bioaccumulative potential**

2-(2-BUTOXYETHOXY)ETHANOL  
Partition coefficient: n-octanol/water 1  
BCF < 100

2-BUTOXYETHANOL  
Partition coefficient: n-octanol/water 0.81

1,2-Benzisothiazol-3(2H)-one  
Partition coefficient: n-octanol/water 0.7  
BCF 6.95

**12.4. Mobility in soil**

2-(2-BUTOXYETHOXY)ETHANOL  
Partition coefficient: soil/water 2 stimato

**12.5. Results of PBT and vPvB assessment**

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

**12.6. Other adverse effects**

Information not available

**SECTION 13. Disposal considerations****13.1. Waste treatment methods**

Reuse, when possible. Neat product residues should be considered special non-hazardous waste.  
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.  
CONTAMINATED PACKAGING  
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

**SECTION 14. Transport information**

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

**14.1. UN number**

Not applicable



**SECTION 14. Transport information** ... / >>**14.2. UN proper shipping name**

Not applicable

**14.3. Transport hazard class(es)**

Not applicable

**14.4. Packing group**

Not applicable

**14.5. Environmental hazards**

Not applicable

**14.6. Special precautions for user**

Not applicable

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

Information not relevant

**SECTION 15. Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**Seveso Category - Directive 2012/18/EC: NoneRestrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

<u>Product</u>		
<u>Point</u>	3	
<u>Contained substance</u>		
<u>Point</u>	55	2-(2-BUTOXYETHOXY)ETHANOL Reg. no.: 01-2119475104-44

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Information not available

VOC (Directive 2004/42/EC):

One-pack performance coatings.

German regulation on the classification of substances hazardous to water (VwVwS 2005)

WGK 2: Hazard to waters

**15.2. Chemical safety assessment**A chemical safety assessment has been performed for the following contained substances  
TRIZINC BIS (ORTHOPHOSPHATE)**SECTION 16. Other information**

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

<b>Acute Tox. 2</b>	Acute toxicity, category 2
<b>Acute Tox. 4</b>	Acute toxicity, category 4

## SECTION 16. Other information ... / &gt;&gt;

<b>Eye Dam. 1</b>	Serious eye damage, category 1
<b>Eye Irrit. 2</b>	Eye irritation, category 2
<b>Skin Irrit. 2</b>	Skin irritation, category 2
<b>Skin Sens. 1</b>	Skin sensitization, category 1
<b>Aquatic Acute 1</b>	Hazardous to the aquatic environment, acute toxicity, category 1
<b>Aquatic Chronic 1</b>	Hazardous to the aquatic environment, chronic toxicity, category 1
<b>Aquatic Chronic 2</b>	Hazardous to the aquatic environment, chronic toxicity, category 2
<b>Aquatic Chronic 3</b>	Hazardous to the aquatic environment, chronic toxicity, category 3
<b>H330</b>	Fatal if inhaled.
<b>H302</b>	Harmful if swallowed.
<b>H312</b>	Harmful in contact with skin.
<b>H332</b>	Harmful if inhaled.
<b>H318</b>	Causes serious eye damage.
<b>H319</b>	Causes serious eye irritation.
<b>H315</b>	Causes skin irritation.
<b>H317</b>	May cause an allergic skin reaction.
<b>H400</b>	Very toxic to aquatic life.
<b>H410</b>	Very toxic to aquatic life with long lasting effects.
<b>H411</b>	Toxic to aquatic life with long lasting effects.
<b>H412</b>	Harmful to aquatic life with long lasting effects.

## LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- 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 Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

## GENERAL BIBLIOGRAPHY

1. Regulation (EU) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament

- The Merck Index. - 10th Edition
- Handling Chemical Safety

**SECTION 16. Other information** ... / >>

- 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 models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

**Note for users:**

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

**Changes to previous review:**

The following sections were modified:

01 / 02 / 03 / 04 / 08 / 09 / 10 / 11 / 12 / 14 / 15 / 16.

Changed TLVs in section 8.1 for following countries:

DEU,