Safety Data Sheet

According to Annex II to REACH – Regulation 2015/830

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

1.1. Product identifier

Code: **18/012**
Product name **DNAD NOF**

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

Intended use **Detergent additive**

1.3. Details of the supplier of the safety data sheet

Name **CHEMTEC S.r.l**
Full address **Via Alberto da Giussano 36/O**
District and Country **20011 CORBETTA (MI)**
ITALIA
tel. +39 02 92867461
fax +39 02 87366254
e-mail address of the competent person
responsible for the Safety Data Sheet **labo@chemtec.it**
Product distribution by: **CHEMTEC S.r.l**

1.4. Emergency telephone number

For inquiries refer to: **+39 02 92867461 during office hour 8.30-12.30 - 13.30-17.30**
For urgent inquires refer to: **Local emergency services**

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 (EU) Regulation 2015/830.
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:

Serious eye damage, category 1	H318	Causes serious eye damage.
Skin irritation, category 2	H315	Causes skin irritation.

2.2. Label elements

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

Hazard pictograms:

Signal words: DANGER

Hazard statements:

H318 Causes serious eye damage.
H315 Causes skin irritation.

Precautionary statements:

P264 Wash the skin thoroughly after handling.

P280 Wear protective gloves / eye protection / face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER / doctor if you feel unwell.

Contains: ALCOHOLS, C8-10, ETHERS WITH POLYETHYLENE-POLYPROPYLENE GLYCOL MONOBENZYL ETHER

Ingredients according to Regulation (EC) No. 648/2004
30% and more non-ionic surfactants

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)**
ALCOHOLS, C8-10, ETHERS WITH POLYETHYLENE-POLYPROPYLENE GLYCOL MONOBENZYL ETHER		
CAS 68154-99-4	10 ≤ x ≤ 20	Acute Tox. 4 H312, Eye Dam. 1 H318, Skin Irrit. 2 H315
EC		
INDEX -		
2-(2-BUTOXYETHOXY)ETHANOL		
CAS 112-34-5	5 ≤ x ≤10	Eye Irrit. 2 H319
EC 203-961-6		
INDEX 603-096-00-8		
Reg. no. 01-2119475104-44		
ALKYLAMINOPOLYETHOXY-POLYPROPOXYPROPANOL		
CAS 68603-58-7	2 ≤ x ≤ 5	Acute Tox. 4 H302
EC		
INDEX -		
ALCOHOLS, C16-18 AND C18-UNSATD., ETHOXYLATED		
CAS 68002-96-0	2 ≤ x ≤ 5	Aquatic Chronic 4 H413
EC 614-209-5		
INDEX -		
OXIRANE, 2-METHYL-, POLYMER WITH OXIRANE, MONO(2-PROPYLHEPTYL) ETHER		
CAS	0,5 ≤ x ≤ 2,0	Eye Irrit. 2 H319, Skin Irrit. 2 H315
EC		
INDEX -		
Reg. no. 02-2119630747-33		

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 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.
SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Wash contaminated clothing before using it again.
INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.

INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

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 for the doctor: symptomatically treatment.

SECTION 5. Firefighting measures

5.1. Extinguishing media
SUITABLE EXTINGUISHING EQUIPMENT
The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.
UNSUITABLE EXTINGUISHING EQUIPMENT
None in particular.

5.2. Special hazards arising from the substance or mixture
HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
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
Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

7.2. Conditions for safe storage, including any incompatibilities
Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

Storage class TRGS 510 (Germany): 10

7.3. Specific end use(s)
Detergent additive.

SECTION 8. Exposure controls/personal protection

8.1. Control parameters
Regulatory References:

DEU	Deutschland	TRGS 900 (Fassung 31.1.2018 ber.) - Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte
DNK	Danmark	Graensevaerdier per stoffer og materialer
ESP	España	INSHT - Límites de exposición profesional para agentes químicos en España 2017
FIN	Suomi	HTP-arvot 2012. Haitallisiksi tunnetut pitoisuudet - Sosiaali- ja terveysministeriön julkaisuja 2012:5
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
NLD	Nederland	Databank of the social and Economic Concil of Netherlands (SER) Values, AF 2011:18
POL	Polska	ROZPORZĄDZENIE MINISTRA PRACY I POLITYKI SPOŁECZNEJ z dnia 7 czerwca 2017 r
EU	OEL EU	Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2017

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	
TLV	DNK	67,5	10			
VLA	ESP	67,5	10	101,2	15	
HTP	FIN	68	10			
VLEP	ITA	67,5	10	101,2	15	
OEL	NLD	50		100		SKIN
NDS	POL	67		100		
OEL	EU	67,5	10	101,2	15	
TLV-ACGIH		66	10			

Predicted no-effect concentration - PNEC		
Normal value in fresh water	1,1	mg/l
Normal value in marine water	0,11	mg/l
Normal value for fresh water sediment	4,4	mg/kg
Normal value for marine water sediment	0,44	mg/kg
Normal value for water, intermittent release	11	mg/l
Normal value of STP microorganisms	200	mg/l
Normal value for the food chain (secondary poisoning)	56	mg/kg
Normal value for the terrestrial compartment	0,32	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral			VND	5 mg/kg				
Inhalation	60,7 mg/m3	VND	40,5 mg/m3	40,5 mg/m3	101,2 mg/m3	VND	67,5 mg/m3	67,5 mg/m3
Skin			VND	50 mg/kg			VND	83 mg/kg

Legend:
(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.
VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

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.
Provide an emergency shower with face and eye wash station.
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 II 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 a hood visor or protective visor combined with airtight 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.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Clear liquid
Colour	Colourless
Odour	Mild
Odour threshold	Not available
pH	7,00- 7,50
Melting point / freezing point	Not available
Initial boiling point	100 °C
Boiling range	Not available
Flash point	Not applicable
Evaporation Rate	Not available
Flammability of solids and gases	Not applicable
Lower inflammability limit	Not available
Upper inflammability limit	Not available
Lower explosive limit	Not available
Upper explosive limit	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1,025 - 1,035 kg/l
Solubility	in water: soluble
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Explosive properties	Not applicable
Oxidising properties	Not available

9.2. Other information

VOC (Directive 2010/75/EC) : 5,00 % - 50,19 g/litre

SECTION 10. Stability and reactivity

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

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-(2-BUTOXYETHOXY)ETHANOL
Reacts with: strong oxidising agents, light metals.

10.4. Conditions to avoid
None in particular. However the usual precautions used for chemical products should be respected.

ALCOHOLS, C8-10, ETHERS WITH POLYETHYLENE-POLYPROPYLENE GLYCOL MONOBENZYL ETHER
Avoid exposure to: high temperatures.
ALCOHOLS, C16-18 AND C18-UNSATD., ETHOXYLATED
Avoid exposure to: naked flames, electrostatic discharges, ignition sources.
ALKYLAMINOPOLYETHOXY-POLYPROPOXYPROPANOL
Avoid exposure to: high temperatures.
OXIRANE, 2-METHYL-, POLYMER WITH OXIRANE, MONO(2-PROPYLHEPTYL) ETHER
Avoid exposure to: high temperatures.

10.5. Incompatible materials
ALCOHOLS, C8-10, ETHERS WITH POLYETHYLENE-POLYPROPYLENE GLYCOL MONOBENZYL ETHER
Avoid contact with: strong acids, strong bases, strong oxidising agents, strong reducing agents.
2-(2-BUTOXYETHOXY)ETHANOL
Incompatible with: strong oxidising agents.
ALCOHOLS, C16-18 AND C18-UNSATD., ETHOXYLATED
Avoid contact with: oxidising agents,acids.
ALKYLAMINOPOLYETHOXY-POLYPROPOXYPROPANOL
Avoid contact with: strong acids, strong bases, strong oxidising agents.
OXIRANE, 2-METHYL-, POLYMER WITH OXIRANE, MONO(2-PROPYLHEPTYL) ETHER
Avoid contact with: acids, alkaline substances, caustic substances, halogens.

10.6. Hazardous decomposition products
ALCOHOLS, C16-18 AND C18-UNSATD., ETHOXYLATED
When heated to decomposition releases: carbon monoxide, carbon dioxide.
ALKYLAMINOPOLYETHOXY-POLYPROPOXYPROPANOL
May develop: nitric oxide.

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.

11.1. Information on toxicological effects
Metabolism, toxicokinetics, mechanism of action and other information
Information not available.

Information on likely routes of exposure
Information not available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure
Information not available.

Interactive effects
Information not available.

ACUTE TOXICITY

LC50 (Inhalation) of the mixture:	Not classified (no significant component)
LD50 (Oral) of the mixture:	>2000 mg/kg
LD50 (Dermal) of the mixture:	>2000 mg/kg

OXIRANE, 2-METHYL-, POLYMER WITH OXIRANE, MONO(2-PROPYLHEPTYL) ETHER

LD50 (Oral)	> 2000 mg/kg Rat

2-(2-BUTOXYETHOXY)ETHANOL

LD50 (Oral)	2410 mg/kg Rat (OECD -401)
LD50 (Dermal)	2764 mg/kg Rabbit (OECD -402)
LC50 (Inhalation)	> 29 ppm/2h Rat

ALCOHOLS, C8-10, ETHERS WITH POLYETHYLENE-POLYPROPYLENE GLYCOL MONOBENZYL ETHER

LD50 (Oral)	2414 mg/kg Rat
LD50 (Dermal)	2000 mg/kg Rabbit
LC50 (Inhalation)	> 7,1 mg/l Steam - Rat

ALKYLAMINOPOLYETHOXY-POLYPROPOXYPROPANOL

LD50 (Oral)	> 1270 mg/kg Rat

ALCOHOLS, C16-18 AND C18-UNSATD., ETHOXYLATED

LD50 (Oral)	> 2000 mg/kg Rat

SKIN CORROSION / IRRITATION
Causes skin irritation.

SERIOUS EYE DAMAGE / IRRITATION
Causes serious eye damage.

RESPIRATORY OR SKIN SENSITISATION
Does not meet the classification criteria for this hazard class.

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

No specific data are available for this product. Handle it according to good working practices. Avoid littering. Do not contaminate soil and waterways. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation. Please take all the proper measures to reduce

harmful effects on aquifers.

12.1. Toxicity

OXIRANE, 2-METHYL-, POLYMER WITH OXIRANE, MONO(2-PROPYLHEPTYL) ETHER

LC50 - for Fish	10 mg/l/96h
EC50 - for Crustacea	10 mg/l/48h
EC50 - for Algae / Aquatic Plants	10 mg/l/72h

2-(2-BUTOXYETHOXY)ETHANOL

LC50 - for Fish	1300 mg/l/96h Lepomis macrochiurus (OECD -203)
EC50 - for Crustacea	> 100 mg/l/48h Daphnia magna

ALCOHOLS, C8-10, ETHERS WITH POLYETHYLENE-POLYPROPYLENE GLYCOL MONOBENZYL ETHER

EC50 - for Crustacea	6,3 mg/l/48h Daphnia magna

ALKYLAMINOPOLYETHOXY-POLYPROPOXYPROPANOL

LC50 - for Fish	186 mg/l/96h Oncorhynchus mykiss
EC50 - for Crustacea	660 mg/l/48h Daphnia magna

12.2. Persistence and degradability

OXIRANE, 2-METHYL-, POLYMER WITH OXIRANE, MONO(2-PROPYLHEPTYL) ETHER

Solubility in water	Soluble

Rapidly degradable

2-(2-BUTOXYETHOXY)ETHANOL

Solubility in water	1000 - 10000 mg/l

Rapidly degradable

ALCOHOLS, C8-10, ETHERS WITH POLYETHYLENE-POLYPROPYLENE GLYCOL MONOBENZYL ETHER

Solubility in water	100 %

Rapidly degradable

ALKYLAMINOPOLYETHOXY-POLYPROPOXYPROPANOL

Solubility in water	Soluble

NOT rapidly degradable

ALCOHOLS, C16-18 AND C18-UNSATD., ETHOXYLATED

NOT rapidly degradable

12.3. Bioaccumulative potential

2-(2-BUTOXYETHOXY)ETHANOL

Partition coefficient: n-octanol/water	1

ALCOHOLS, C8-10, ETHERS WITH POLYETHYLENE-POLYPROPYLENE GLYCOL MONOBENZYL ETHER

Partition coefficient: n-octanol/water	3,46
BCF	90 Fish

12.4. Mobility in soil
Information not available.

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. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.
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.

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: None

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006
Product

Point	3	

Contained substance

Point	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 authorisarion (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
Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

Regulation (EC) No. 648/2004
Ingredients according to Regulation (EC) No. 648/2004.

German regulation on the classification of substances hazardous to water (VwVwS 2005)
WGK 1: Low hazard to waters.

15.2. Chemical safety assessment
No chemical safety assessment has been processed for the mixture.

SECTION 16. Other information

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

Acute Tox. 4	Acute toxicity, category 4
Eye Dam. 1	Serious eye damage, category 1
Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
Aquatic Chronic 4	Hazardous to the aquatic environment, chronic toxicity, category 4
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H413	May cause long lasting harmful effects to aquatic life.

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 (EC) 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
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X 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 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 / 03 / 04 / 05 / 08 / 09 / 10 / 11 / 12 / 15.