

Safety data sheet

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

1.1. Product identifier.

Code: TBOILER
Product name: TOPTHERM CLEAN BOILER

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

Intended use. CLEANER TO RESTORE THE CORRECT HEAT EXCHANGE IN BOILERS TO REMOVES THE SCALES OF METAL OXIDES AND LIMESCALE DEPOSIT FROM TRADITIONAL AND/OR CONDENSING BOILER'S PRIMARY CIRCUIT

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

Name. Foridra S.r.l.
Full address. SS 16 Adriatica 17/A
District and Country. 60022 Castelfidardo (AN)
Italia
Tel. 0717211048
Fax. 0717819950

e-mail address of the competent person.

responsible for the Safety Data Sheet. ufficiotecnico@foridra.it

1.4. Emergency telephone number.

For urgent inquiries refer to. Centro Antiveleni Ospedale Niguarda +39 0266101029

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:

Serious eye damage, category 1	H318	Causes serious eye damage.
Skin irritation, category 2	H315	Causes skin irritation.
Specific target organ toxicity - single exposure, category 3	H335	May cause respiratory irritation.

2.2. Label elements.

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

Hazard pictograms:

TOPTHERM CLEAN BOILER



Signal words:

Danger

Hazard statements:

H318 Causes serious eye damage.
H315 Causes skin irritation.
H335 May cause respiratory irritation.

Precautionary statements:

P264 Wash . . . thoroughly after handling.
P280 Wear protective gloves / eye protection / face protection.
P304+P340 IF INHALED: remove person to fresh air and keep comfortable for breathing.
P310 Immediately call a POISON CENTER / doctor / . . .
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Contains: CITRIC ACID
 1H-BENZOTRIAZOLE
 ETHANOLAMINE

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:

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

Identification.**CITRIC ACID**

CAS. 77-92-9

 $40 \leq x < 50$

EC. 201-069-1

INDEX. -

Reg. no. 01-2119457026-42-xxxx

1H-BENZOTRIAZOLE

CAS. 95-14-7

 $1 \leq x < 4$ **Classification 1272/2008 (CLP).**

Eye Dam. 1 H318, Skin Irrit. 2
 H315, STOT SE 3 H335

Acute Tox. 4 H302, Acute
 Tox. 4 H332, Eye Irrit. 2
 H319, Skin Irrit. 2 H315,
 STOT SE 3 H335, Aquatic

Chronic 3 H412

EC. 202-394-1

INDEX. -

Reg. no. 05-2115947788-23-0000

ETHANOLAMINE

CAS. 141-43-5

 $1 \leq x < 3$ Acute Tox. 4 H302, Acute
Tox. 4 H312, Acute Tox. 4
H332, Skin Corr. 1B H314,
STOT SE 3 H335

EC. 205-483-3

INDEX. 603-030-00-8

Reg. no. 01-2119486455-28-xxx

PHOSPHORIC ACID

CAS. 7664-38-2

 $0,5 \leq x < 0,6$

Skin Corr. 1B H314, Note B

EC. 231-633-2

INDEX. 015-011-00-6

Reg. no. 01-2119485924-24-xxxx

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.

For symptoms and effects caused by the contained substances, see chap. 11.

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**

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.

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
FRA	France	JORF n°0109 du 10 mai 2012 page 8773 texte n° 102
GBR	United Kingdom	EH40/2005 Workplace exposure limits
GRC	Ελλάδα	ΕΦΗΜΕΡΙΣ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ - ΤΕΥΧΟΣ ΠΡΩΤΟ Αρ. Φύλλου 19 - 9 Φεβρουαρίου 2012
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
PRT	Portugal	Ministério da Economia e do Emprego Consolida as prescrições mínimas em matéria de proteção dos trabalhadores contra os riscos para a segurança e a saúde devido à exposição a agentes químicos no trabalho - Diário da Republica I 26; 2012-02-06
EU	OEL EU	Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC.
	TLV-ACGIH	ACGIH 2016

CITRIC ACID

Threshold Limit Value.

Type	Country	TWA/8h	STEL/15min	
		mg/m3	ppm	mg/m3
				ppm
VLEP	ITA	10		INHAL.

Predicted no-effect concentration - PNEC.

Normal value in fresh water	0,44	mg/l
Normal value in marine water	0,044	mg/l
Normal value for fresh water sediment	34,6	mg/kg
Normal value for marine water sediment	3,46	mg/kg
Normal value of STP microorganisms	1000	mg/l
Normal value for the terrestrial compartment	33,1	mg/kg

ETHANOLAMINE

Threshold Limit Value.

Type	Country	TWA/8h	STEL/15min	
		mg/m3	ppm	mg/m3
				ppm
AGW	DEU	5,1	2	10,2
MAK	DEU	5,1	2	10,2
VLA	ESP	2,5	1	7,5
VLEP	FRA	2,5	1	7,6
WEL	GBR	2,5	1	7,6
TLV	GRC	2,5	1	7,6
				3
				SKIN.

TOPTHERM CLEAN BOILER

VLEP	ITA	2,5	1	7,6	3	SKIN.
VLE	PRT	2,5	1	7,6	3	SKIN.
OEL	EU	2,5	1	7,6	3	SKIN.
TLV-ACGIH		7,5	3	15	6	

Predicted no-effect concentration - PNEC.

Normal value in fresh water	0,085	mg/l
Normal value in marine water	0,0085	mg/l
Normal value for fresh water sediment	0,425	mg/kg
Normal value for marine water sediment	0,0425	mg/kg
Normal value for water, intermittent release	0,025	mg/l
Normal value of STP microorganisms	100	mg/l
Normal value for the terrestrial compartment	0,035	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers.	Acute systemic	Chronic local	Chronic systemic	Effects on workers	Acute systemic	Chronic local	Chronic systemic
	Acute local				Acute local			
Oral.			VND	3,75 mg/kg/d				
Inhalation.			2 mg/m3	2 mg/m3			3,3 mg/m3	VND
Skin.			VND	0,24 mg/kg/d			VND	1 mg/kg/d

PHOSPHORIC ACID

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	2		4		INHAL.
MAK	DEU	2		4		INHAL.
VLA	ESP	1		2		
VLEP	FRA	1	0,2	2	0,5	
WEL	GBR	1		2		
TLV	GRC	1		3		
VLEP	ITA	1		2		
VLE	PRT	1		2		
OEL	EU	1		2		
TLV-ACGIH		1		3		

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. 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	liquid
Colour	colourless
Odour	characteristic
Odour threshold.	Not available.
pH.	3
Melting point / freezing point.	Not available.
Initial boiling point.	Not available.
Boiling range.	Not available.
Flash point.	Not available.
Evaporation Rate	Not available.
Flammability of solids and gases	not flammable
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.	1,20
Solubility	soluble in water
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature.	Not available.
Decomposition temperature.	Not available.
Viscosity	Not available.
Explosive properties	Not available.
Oxidising properties	Not available.

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.

1H-BENZOTRIAZOLE

Decomposes at 160°C/320°F.

PHOSPHORIC ACID

Decomposes at temperatures above 200°C/392°F.

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.

ETHANOLAMINE

May react dangerously with: acrylonitrile, chloroepoxypropane, chlorosulphuric acid, hydrogen chloride, iron-sulphur compounds, acetic acid, acetic anhydride, mesityl oxide, nitric acid, sulphuric acid, strong acids, vinyl acetate, cellulose nitrate.

PHOSPHORIC ACID

Risk of explosion on contact with: nitromethane. May react dangerously with: alkalis, sodium borohydride.

10.4. Conditions to avoid.

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

ETHANOLAMINE

Avoid exposure to: air, sources of heat.

10.5. Incompatible materials.

ETHANOLAMINE

Incompatible with: iron, strong acids, strong oxidants.

PHOSPHORIC ACID

Incompatible with: metals, strong alkalis, aldehydes, organic sulphides, peroxides.

10.6. Hazardous decomposition products.

1H-BENZOTRIAZOLE

May develop: nitric oxide.

ETHANOLAMINE

May develop: nitric oxide, carbon oxides.

PHOSPHORIC ACID

May develop: phosphoryl oxides.

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.

ACUTE TOXICITY.

LC50 (Inhalation - vapours) of the mixture: > 20 mg/l

LC50 (Inhalation - mists / powders) of the mixture: > 5 mg/l

LD50 (Oral) of the mixture: > 2000 mg/kg

LD50 (Dermal) of the mixture: > 2000 mg/kg

PHOSPHORIC ACID

LD50 (Oral). 1530 mg/kg Rat

LD50 (Dermal). 2740 mg/kg Rabbit

LC50 (Inhalation). > 0,85 mg/l/1h Rat

CITRIC ACID

LD50 (Oral). 5400 mg/kg Rat

LD50 (Dermal). > 2000 mg/kg rat

1H-BENZOTRIAZOLE

LD50 (Oral). > 1000 mg/kg Rat

LD50 (Dermal). > 1000 mg/kg Rat

LC50 (Inhalation). 1,91 Rat

ETHANOLAMINE

LD50 (Oral). 1515 mg/kg (OECD - linea guida 401)

LD50 (Dermal). 2504 mg/kg coniglio (OECD - linea guida 402)

LC50 (Inhalation). > 1,3 mg/l/4h ratto (IRT) l'UE ha classificato la sostanza come "Nocivo", è stato testato il vapore

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.

May cause respiratory irritation.

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.

Information not available.

12.2. Persistence and degradability.

PHOSPHORIC ACID

Solubility in water. > 850000 mg/l

Biodegradability: Information not available.

CITRIC ACID

Solubility in water. > 10000 mg/l

Rapidly biodegradable.

1H-BENZOTRIAZOLE

Solubility in water. > 10000 mg/l

ETHANOLAMINE

Solubility in water. 1000 - 10000 mg/l

Rapidly biodegradable.

12.3. Bioaccumulative potential.

CITRIC ACID

BCF. 3,2

1H-BENZOTRIAZOLE

Partition coefficient: n-octanol/water. 1,34

ETHANOLAMINE

Partition coefficient: n-octanol/water. -2,3

12.4. Mobility in soil.

ETHANOLAMINE

Partition coefficient: soil/water. -0,5646

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.

Waste transportation may be subject to ADR restrictions.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. Transport information.**14.1. UN number.**

ADR / RID, IMDG, 1760
IATA:

14.2. UN proper shipping name.

ADR / RID:	CORROSIVE LIQUID, N.O.S. (CITRIC ACID; ETHANOLAMINE)
IMDG:	CORROSIVE LIQUID, N.O.S. (CITRIC ACID; ETHANOLAMINE)
IATA:	CORROSIVE LIQUID, N.O.S. (CITRIC ACID; ETHANOLAMINE)

14.3. Transport hazard class(es).

ADR / RID:	Class: 8	Label: 8
IMDG:	Class: 8	Label: 8
IATA:	Class: 8	Label: 8



TOPTHERM CLEAN BOILER

14.4. Packing group.

ADR / RID, IMDG, III
IATA:

14.5. Environmental hazards.

ADR / RID: NO
IMDG: NO
IATA: NO

14.6. Special precautions for user.

ADR / RID:	HIN - Kemler: 80	Limited Quantities: 5 L	Tunnel restriction code: (E)
IMDG:	Special Provision: - EMS: F-A, S-B	Limited Quantities: 5 L	
IATA:	Cargo:	Maximum quantity: 60 L	Packaging instructions: 856
	Pass.:	Maximum quantity: 5 L	Packaging instructions: 852
	Special Instructions:	A3, A803	

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:

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

Product.
Point. 3

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.

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.

15.2. Chemical safety assessment.

No chemical safety assessment has been processed for the mixture and the substances it contains.

SECTION 16. Other information.

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

Acute Tox. 4	Acute toxicity, category 4
Skin Corr. 1B	Skin corrosion, category 1B
Eye Dam. 1	Serious eye damage, category 1
Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic toxicity, category 3
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H412	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

TOPTHERM CLEAN BOILER

- 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
- 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
 - ECHA website

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 / 13 / 14 / 15.