



SAFETY DATA SHEET

In compliance with EC Regulations No.: 1907/2006, 830/2015 and 1272/2008 (CLP).

Date last modified: 19 December 2017 - Version 6.0

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

1.1 Product Identifier

Product Name: ALKALINITY CONTROL

Product Code #: 673001 (30 lt)

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

Intended Use: Industrial applications; Boiler Water Treatment.

Uses advised against: This product is not recommended for any industrial, professional or consumer use other than the Intended Uses above and the instructions written in this Safety Data Sheet.

1.3 Details of the supplier of the safety data sheet

Company/undertaking identification

Supplier/Manufacturer:

Marichem Marigases Hellas SA

Sfaktirias 64,

185 45 Piraeus,

Greece

Tel. No.: ++30 210 4148800

Fax No.: ++30 210 4133985

<http://www.marichem-marigases.com>

e-mail: mail@marichem-marigases.com

1.4 Emergency telephone number

Tel. No.: ++30 210 4148800 (including working hours)

Emergency Information:

Inside U.S. and Canada: (800)-424-9300 (CHEMTREC)

Outside U.S. and Canada: 1-703-527-3887 (CHEMTREC)

National Emergency Centre (Greece): ++30 210 7793777

2. HAZARDS IDENTIFICATION

2.1 Classification of the mixture

Classification under EC 1272/2008 regulation - GHS classification.

Skin corrosion: category 1

SIGNAL WORD: DANGER



Hazard Statement(s):

H314 Causes severe skin burns and eye damage.

Classification under Directives 67/548/EEC, 1999/45/EC and their amendments.

The preparation is classified as dangerous.

Causes severe burns.

Colorless or slightly colored, odorless liquid.

2.2 Label Elements

Labelling according to GHS (1272/2008/EC)

The substance is classified and labelled according to the CLP Regulation.

SYMBOL:



SIGNAL WORD: DANGER

Hazard Statement(s):

H314 Causes severe skin burns and eye damage.

Precautionary Statement(s):

Prevention:

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P284 Wear respiratory protection.

Response:

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P363 Wash contaminated clothing before re-use.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310 Immediately call a POISON CENTER or doctor/physician.
P321 Specific treatment (see First Aid Measures on Safety Data Sheet).
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
P391 Collect spillage.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards

The mixture does not meet the criteria for PBT or vPvB in accordance with Annex XIII of 1907/2006/EC.

Product classification and labelling according to Directive 67/548/EEC, European Dangerous Preparations Directive (1999/45/EC), European Regulation 648/2004 and their amendments.

Symbol: **C, Corrosive**



C, Corrosive

Risk Phrases

R-phrases: R35 Causes severe burns.

Safety Phrases

S-phrases: S2 Keep out of the reach of children.
 S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
 S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
 S23 Do not breathe gas/vapour.
 S38 In case of insufficient ventilation, wear suitable respiratory equipment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Composition:

Ingredients	CAS Number	Proportion	Hazard Code(s)*
Sodium Hydroxide	1310-73-2	10-30%	H314.
Other ingredients that do not contribute to the classification of the product	-	30-70%	-

*See section 16 for the full text of the Hazard Code(s) declared above.

Occupational Exposure Limits, if available, are listed in section 8.

4. FIRST AID MEASURES

4.1. Description of first aid measures

4.1.1. **In case of inhalation:** Move to fresh air. Oxygen or artificial respiration if needed. Victim to lie down in the recovery position, cover and keep him warm. Call a physician immediately.

4.1.2. **In case of skin contact:** Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water. Keep warm and in a quiet place. Call a physician or poison control centre immediately. Wash contaminated clothing before re-use.

4.1.3. **In case of eye contact:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of difficulty of opening the lids, administer an analgesic eye wash (oxybuprocaine). Call a physician or poison control centre immediately. Take victim immediately to hospital.

4.1.4. **In case of ingestion:** Call a physician or poison control centre immediately. Take victim immediately to hospital. If swallowed, rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.1.5. **Information to physician:** Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.

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

Corrosive. The substance is very corrosive to the eyes, the skin and the respiratory tract. Corrosive on ingestion. Inhalation of an aerosol of the substance may cause lung oedema. Repeated or prolonged contact with skin may cause dermatitis.

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

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential.

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media:

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2. Special hazards arising from the substance

The product is not flammable. Not combustible. Reacts violently with water. Gives off hydrogen by reaction with metals. With light metal (aluminium, magnesium), zinc, lead reacts releasing hydrogen, which may form explosive mixture with air, in this case sodium hydroxide must be diluted with plenty of water.

5.3. Advice for fire-fighters

Special protective equipment:

In the event of fire, wear self-contained compressed air breathing apparatus. Use personal protective equipment. Wear chemical resistant suit.

Further information:

In case of fire in the surroundings: use appropriate extinguishing media. Cool containers / tanks with water spray.

Fire hazard class: - No danger of fire.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. Advice for non-emergency personnel

Prevent further leakage or spillage if safe to do so. Keep away from incompatible products.

6.1.2. Advice for emergency responders

Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ventilate the area. Wear suitable protective clothing.

6.2. Environmental precautions

Should not be released into the environment. Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3. Methods and material for containment and cleaning up

Spilled material shall be covered with suitable absorbing material, e.g. dry soil or sand and the collected material shall be transported in a closed container into a safe depository for disposal. Keep in properly labelled containers. Keep in suitable, closed containers for disposal. Treat recovered material as described in the section "Disposal considerations".

6.4. Reference to other sections

See in Section 13: "Disposal considerations".

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Do not taste or swallow. Avoid contact with skin and avoid breathing vapor/mist. Do not eat, drink or smoke in work area. Do not get in eyes, on skin, on clothing. When diluting, always add the product to water. Never add water to the product. Avoid prolonged or repeated exposure. Any protective clothing or shoes which become contaminated should be removed immediately and thoroughly laundered before reuse.

Use only equipment and materials which are compatible with the product. Keep away from incompatible products. Preferably transfer by pump or gravity.

7.2. Conditions for safe storage, including any incompatibilities

Store in original pail or drum. Store in closed, properly labeled pails or drums. Keep in a well-ventilated place. Keep in a dry place. Do not remove or deface labels or tags. Aluminum equipment should not be used for storage and transfer.

Keep container closed. Keep away from incompatible products.

Packaging material

Suitable material:

Stainless steel, polyethylene, paper+PE

Unsuitable material:

No data available.

7.3. Specific end use(s):

Cleaning product for industrial use only.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

The recommended control strategies:

1. Employ good industrial hygiene practice.
2. Use local exhaust ventilation.
3. Enclose the process.
4. Seek the advice of a specialist.

8.1. Control parameters

Substance name: **Sodium hydroxide**

Countries	Limit value (8 hours)		Limit value (short term)	
	ppm	mg/m ³	ppm	mg/m ³
Austria		2 inhalable aerosol		4 inhalable aerosol
Belgium		2		
Denmark		2	2	
France		2		
Hungary		2	2	
Poland		0.5	1	
Spain		2		
Sweden		1	(2)	
Switzerland		2 inhalable aerosol	2 inhalable aerosol	
United Kingdom			2	

Remarks: (2) Inhalable dust

Source: http://bgia-online.hvbg.de/LIMITVALUE/WebForm_gw.aspx

8.1.1 DNEL (Derived No-Effect Level)/PNEC (Predicted No-Effect Concentration)-values

Workers:

Acute / short-term (dermal, inhalation – local and systemic effects)/

Long term (dermal – local and systemic effects, inhalation – systemic effects):

The focus is the occurrence of local effects after acute and repeated exposure at those places where Sodium Hydroxide is produced and/or used. This is because Sodium Hydroxide is not expected to become systemically available in the body under normal handling and use conditions.

DNEL long-term inhalation=1.0 mg/m³ (local effects)

General population:

Acute / short-term (dermal, inhalation, oral – systemic effects; dermal, inhalation - local)/

Long term (dermal, inhalation, oral – systemic effects; dermal - local effects):

As sodium hydroxide is not expected to become systemically available in the body under normal handling and use conditions, the focus is on possible risks from acute exposure (local effects).

DNEL long-term inhalation=1.0 mg/m³ (local effects)

PNEC aqua (freshwater, marine water, intermittent releases, STP): The toxicity of sodium hydroxide can be ascribed to the pH increase due to the addition of hydroxide ion (OH⁻) as the sodium concentrations are too low to explain the effects observed in acute toxicity studies. A generic PNEC cannot be derived from single-species toxicity data for sodium hydroxide, as the pH of natural waters as well as the buffer capacity of natural waters show considerable differences and aquatic organisms/ecosystems are adapted to these specific natural conditions, resulting in different pH optima and pH ranges that are tolerated.

PNEC (sediment (freshwater/marine water), soil): The high water solubility and very low vapour pressure indicate that sodium hydroxide will be found predominantly in water. In water (including soil or sediment pore water), sodium hydroxide is present as the sodium ion (Na⁺) and hydroxide ion (OH⁻), as solid Sodium Hydroxide rapidly dissolves and subsequently dissociates in water.

PNEC oral: According to the EU RAR (2007) bioaccumulation in organisms is not relevant for sodium hydroxide.

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Ensure adequate ventilation. Apply technical measures to comply with the occupational exposure limits.

8.2.2. Personal protection equipment

8.2.2.1. Eye / Face protection

Chemical resistant goggles must be worn.

8.2.2.2. Skin and body protection

Chemical resistant apron. Apron/boots of PVC, neoprene in case of dusts.

Hand protection

Impervious gloves. Suitable material: PVC, Neoprene, Natural Rubber, butyl-rubber.
Unsuitable material: Leather.

8.2.2.3. Respiratory protection

In the case of dust or aerosol formation use respirator with an approved filter.
Recommended Filter type: P2.

8.2.2.4. General safety and hygiene measures

Eye wash bottles or eye wash stations in compliance with applicable standards. Take off contaminated clothing and shoes immediately. Handle in accordance with good industrial hygiene and safety practice.

8.2.3. Environmental exposure controls

In accordance with local and national regulations.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

9.1.1. Appearance

Physical State: liquid

Color: Clear, colorless

Odor: Odorless

9.1.2. Basic data

Boiling Point Range: <145°C

Melting Point Range: Not available

Solubility in water: Complete

Flash Point: None

Autoignition Temperature: None

Lower Explosion Limit (vol %): None

Upper Explosion Limit (vol %): None

Vapour Pressure: 61mmHg at 20°C

pH value: 13 - 14

Specific Gravity: 1.26 gr/cm³ (at 20°C)

9.2. Other information

Surface tension: Not applicable. According to the REACH Regulation, the study need only be conducted if based on structure, surface activity is expected or can be predicted. In addition, surface activity is not a desired property of the mixture (Annex VII, column 2 adaptation).

Granulometry: Not applicable.

Stability in organic solvents and identity of relevant degradation products: Not applicable. According to the REACH Regulation, the study does not need to be conducted if the substance is inorganic (Annex IX, column 2 adaptation).

Dissociation constant: Not applicable. According to the REACH Regulation, the study does not need to be conducted if the substance is hydrolytically unstable (half-life less than 12 hours) (Annex IX, column 2 adaptation). Alkalinity Control dissociates completely in water.

Additional physico-chemical information: Alkalinity Control is a strong alkaline substance that dissociates completely in water into the sodium ion (Na⁺) and hydroxide ion (OH⁻). The dissolution/dissociation in water is strongly exothermic, so a vigorous reaction occurs when Alkalinity Control is added to water.

10. STABILITY AND REACTIVITY

10.1. Reactivity

Potential for exothermic hazard. May be corrosive to metals.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Gives off hydrogen by reaction with metals. Exothermic reaction with strong acids. Risk of violent reaction. Risk of explosion. Reacts violently with water.

10.4. Conditions to avoid

Keep away from direct sunlight. To avoid thermal decomposition, do not overheat. Freezing.

10.5. Incompatible materials

Metals, oxidizing agents, acids, aluminium, other light metals and their alloys.

10.6. Hazardous decomposition products

Hydrogen.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity – oral, inhalation, dermal

No reliable studies are available for acute toxicity to Sodium Hydroxide. According to the REACH Regulation, acute toxicity testing does not need to be conducted if the substance is classified as corrosive to the skin (column 2 adaptation, Annex VIII). Sodium Hydroxide is a corrosive substance and for this reason there is no need for further acute toxicity testing.

Acute toxicity – other routes

Mouse (intraperitoneal) LD50=40 mg/kg bw

Skin corrosion / irritation: Skin Corr. 1

According to the CLP Regulation 1272/2008 Annex VI Table 3.1, the concentration limit for corrosivity to the skin of Sodium Hydroxide is considered to be 2%. Up to the most recent ATP, this has not been changed. Therefore, 2% is taken forward to the risk characterisation as concentration limit for corrosivity.

According to the CLP Regulation No 1272/2008 Annex VI Table 3.1, Sodium Hydroxide is a skin corrosive category 1A at a concentration 5%.

Rabbit irritating

Human irritating

Serious eye damage / irritation: Eye Irrit. 2

According to the CLP Regulation No 1272/2008 Annex VI Table 3.1, the concentration range for eye/skin irritation is 0.5% C < 2%.

Rabbit not irritating (1% solution of Sodium Hydroxide)

irritating (2% solution of Sodium Hydroxide)

Respiratory sensitization

Not classified. Exposure concentrations up to 1 mg/m³ were not considered adverse with regard to local effects to the respiratory tract.

Skin sensitization

Not classified. Existing data do not demonstrate that Sodium Hydroxide is a skin sensitizer.

Human Not sensitizing.

Mutagenicity

Not classified. Both in vitro and in vivo genetic toxicity tests indicated no evidence for a mutagenic activity. Furthermore Sodium Hydroxide is not expected to be systemically available in the body

under normal handling and use conditions and for this reason additional testing is considered unnecessary.

Carcinogenicity

Not classified. Sodium Hydroxide did not induce carcinogenicity in in vitro and in vivo studies. No studies were identified carcinogenicity. Product components are not listed on the IARC, NTP or OSHA carcinogens lists.

Reproductive toxicity

Not classified. Sodium Hydroxide is not expected to be systemically available in the body under normal handling and use conditions and for this reason it can be stated that the substance will not reach the foetus nor reach male and female reproductive organs. It can be concluded that a specific study to determine the developmental toxicity or the toxicity to reproduction is not necessary.

STOT-single exposure

Not classified.

STOT-repeated exposure

Not classified. No reliable studies are available for oral, inhalation and dermal repeated dose toxicity.

Aspiration hazard

Not classified.

Toxicokinetics

Sodium Hydroxide is not expected to be systemically available in the body under normal handling and use conditions.

12. ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.1. Aquatic toxicity

Short-term toxicity to fish

No reliable studies are available for the short-term toxicity to fish.

Despite of this, there is no need for additional aquatic toxicity testing with Sodium Hydroxide, as all available tests resulted in a rather small range of toxicity values (acute toxicity tests to fish: 35 - 189 mg/l) and there are sufficient data on the pH ranges.

Long-term toxicity to fish

No valid long-term toxicity studies to fish are available. Despite of this, there is no need for further toxicity testing with Sodium Hydroxide, as all available tests resulted in a rather small range of toxicity values (chronic toxicity test: 25 mg/l) and there are sufficient data on pH ranges.

Short-term toxicity to aquatic invertebrates

The tests with aquatic invertebrates resulted in acute LC50 values and toxic/lethal concentrations ranging from 30 to 1000 mg/l.

Long-term toxicity to aquatic invertebrates: Data waiving.

Toxicity to aquatic algae and cyanobacteria: Data waiving.

Toxicity to microorganisms: Data waiving.

12.1.2. Sediment toxicity:

Data waiving. The high water solubility and very low vapour pressure indicate that Sodium Hydroxide will be found predominantly in water. In water (including soil or sediment pore water), Sodium Hydroxide is present as the sodium ion (Na^+) and hydroxide ion (OH^-). If emitted to surface water, sorption to particulate matter and sediment will be negligible and so it will not accumulate in living tissues.

12.1.3. Terrestrial toxicity

Toxicity to soil macroorganisms except arthropods: Data waiving.

Toxicity to terrestrial arthropods: Data waiving. If emitted to soil, sorption to soil particles will be negligible. Depending on the buffer capacity of the soil, OH^- will be neutralised in the soil pore water or the pH may increase. There is no direct exposure of soil to Sodium Hydroxide based on the available uses. In addition, no indirect exposure via air is expected.

Toxicity to terrestrial plants: Data waiving.

Toxicity to soil microorganisms: Data waiving.

Toxicity to birds: Data waiving. No exposure to birds is foreseen. Furthermore, in vivo testing with corrosive substances at concentration/dose levels causing corrosivity shall be avoided (introduction to Annex X of the REACH Regulation).

12.2. Persistence and degradability

Hydrolysis: Data waiving.

Phototransformation/photolysis: No information available.

Phototransformation in water and soil: This information is not available.

Biodegradation in water: Data waiving. According to the REACH Regulation, the study does not need to be conducted if the substance is inorganic (Annex VII, Column 2 adaption).

Biodegradation in water and sediment: Data waiving. According to the REACH Regulation, the study does not need to be conducted if the substance is inorganic (Annex VII, Column 2 adaption).

Biodegradation in soil: Data waiving. According to the REACH Regulation, the study does not need to be conducted if the substance is inorganic (Annex VII, Column 2 adaption).

Summary of degradation

Abiotic degradation: NaOH is a strong alkaline substance that dissociates completely in water to Na^+ and OH^- . High water solubility and low vapour pressure indicate that NaOH will be found predominantly in aquatic environment. This implies that it will not adsorb on particulate matter or surfaces.

Biotic degradation: According to the REACH Regulation, the study does not need to be conducted if the substance is inorganic (Annex VII, Column 2 adaption).

12.3. Bioaccumulative potential

Data waiving. According to the REACH Regulation, the study does not need to be conducted if the substance has a low potential for bioaccumulation (Annex IX, column 2 adaptation). The high water solubility and very low vapour pressure indicate that Sodium Hydroxide will be found predominantly in water. According to the EU RAR bioaccumulation in organisms is not relevant for Sodium Hydroxide.

12.4. Mobility in soil

Adsorption/desorption: Data waiving. According to the REACH Regulation, the study does not need to be conducted if based on the physical chemical properties the substance can be expected to

have a low potential for adsorption (Annex VIII, column 2 adaptation). The high water solubility and very low vapour pressure indicate that Sodium Hydroxide will be found predominantly in water. In water (including soil or sediment pore water), Sodium Hydroxide is present as the sodium ion (Na^+) and hydroxide ion (OH^-). If emitted to surface water, sorption to particulate matter and sediment will be negligible.

12.5. Results of PBT and vPvB assessment

Sodium Hydroxide does not fulfil the criteria for persistency, bioaccumulation and toxicity. Therefore, Sodium Hydroxide is not considered a PBT or vPvB substance.

12.6. Other adverse effects

No data.

The product is not harmful to the marine environment as per paragraphs 1.7.4 and 1.7.5. of Resolution MEPC. 219 (63) /Annex 24 - 2012 adoption of IMO's MARPOL Annex V.

13. DISPOSAL CONSIDERATIONS

Do not emit directly to drains, environment. Substances with high pH value shall be neutralized prior to discharge. It is to be diluted with plenty of water following careful neutralization with acidic solution.

13.1 Waste treatment methods

In accordance with the international and local waste management regulations. Waste characterization and compliance with disposal regulations are the responsibilities of the waste generator.

13.1.1. Product / Packaging disposal

Product: The unnecessary untreated product shall be considered as hazardous waste. The generated waste shall be treated by specialized companies in disposing in line with the local regulations and with the hazardous waste regulations. Recovered solids or liquids may be sent to a licensed reclaimer or disposed of in a permitted waste management facility. Consult federal, state or local disposal authorities for approved procedures.

Packing: The uncleaned packing/container shall be handled in the same way as the product. The packaging material may be reused after cleaning.

13.1.2. Waste treatment options

Observe local authority regulations.

14. TRANSPORT INFORMATION

14.1 Proper Shipping Name: Sodium Hydroxide, Solution

14.2 LAND TRANSPORT

UN number:	1824		
ADR class:	8	RID class:	8

14.3 SEA TRANSPORT

UN number:	1824	EmS:	F-A, S-B
IMDG class:	8		
IMDG packing group:	II		

14.4 AIR TRANSPORT

UN number:	1824		
IATA/ICAO class:	8	Packing group:	II

15. REGULATORY INFORMATION

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

15.2 Chemical Safety Assessment

A CSA has been carried out for the raw materials in this product, from the raw materials manufacturers (when needed to be carried out).

16. OTHER INFORMATION

16.1 Full text of Hazard Code(s) referred in Section 3

H314: Causes severe skin burns and eye damage.

16.2 Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road).

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail).

IMDG: International Maritime Code for Dangerous Goods.

IATA: International Air Transport Association.

ICAO: International Civil Aviation Organization.

bw: Body weight.

Carc.: Carcinogenicity.

CAS number: Chemical Abstracts Service number.

CLP: Classification Labelling Packaging Regulation.

CSA: Chemical Safety Assessment.

CSR: Chemical Safety Report.

DNEL: Derived No Effect Level.

dw: Dry weight.

EC number: EINECS and ELINCS number.

EC: European Commission.
EC50: Half maximal effective concentration.
EINECS: European Inventory of Existing Commercial Chemical Substances.
ELINCS: European List of Notified Chemical Substances.
EmS: Emergency Schedule.
ERC: Environmental Release Category.
ES: Exposure scenario.
food: oral feed.
GHS: Globally Harmonized System of Classification and Labelling of Chemicals.
Irrit.: Irritation.
LC50: Lethal concentration, 50 %.
LD50: Median Lethal dose.
LOAEC: Lowest Observed Adverse Effect Concentration.
LOAEL: Lowest Observed Adverse Effect Level.
MK value: Maximum Concentration value.
NCO: An international corporation that provides customer service contracting.
NOAEC: No Observed Adverse Effect Concentration.
NOAEL: No Observed Adverse Effect Level.
NOEC: No Observed Effect Concentration.
OECD: Organisation for Economic Cooperation and Development.
PBT: Persistent, Bioaccumulative and Toxic.
PNEC: Predicted No Effect Concentration.
PROC: Process category.
REACH: The Registration, Evaluation, Authorisation and Restriction of Chemicals.
Resp.: Respiratory.
Sens.: Sensitization.
STEL value: Short Term Exposure Limit value.
STOT RE: Specific target organ toxicity — repeated exposure.
STOT SE: Specific target organ toxicity — single exposure.
STOT: Specific Target Organ Toxicity.
STP: Sewage Treatment Plant.
SU: Sector of use.
Tox.: Toxicity.
TWA value: Time Weighted Average value.
vPvB: Very Persistent and Very Bioaccumulative.

16.3 Notice to reader

All information, instructions and statements contained in this Material Safety Data Sheet are compiled in accordance with European Directives, corresponding national legislation and on the basis of information given by our suppliers.

The information disclosed in this Material Safety Data Sheet (which supersedes all previous versions) is believed to be correct, at the date of issue, to the best of our current knowledge and experience. It only relates to the specific product designated herein and it may not be valid when said product is used in combination with any other products or in any processed form, unless specified in the text. This document aims to provide the necessary health and safety information of the product and is not to be considered a warranty or quality specification. It is the responsibility of the recipient of this Material Safety Data Sheet to ensure that information given here is read and understood by all who use, handle, dispose of or in any way come in contact with the product.

Also, it is the responsibility of the user to comply with local legislation relating to safety, health, environment and waste management. Data and information provided concerning the product are informative, exclusively presented to the customer.