Safety data sheet

In accordance with Annex II of REACH - Regulation (EU) 2020/878 and Annex II of UK REACH

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

1.1. Product identifier

Code: NanoPhos_GA_210820-015

UFI product name: NANOMAX ANTIALGAE

YFRV-R0RX-Q00J-8T94

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

Intended use Water-based masonry preservative and mold remediation

1.3. Details of the supplier of the safety data sheet

Name and surname NANOPHOS SA

Full address Technological and cultural park

District and country 19 500 Lavrio (Greece)
Greece

Phone +30 22920 69312

Fax +30 22920 69303

email address of competent persons on

responsible for the safety data sheet iarabatz@NanoPhos.com

Supplier: Ioannis Arabatzis

1.4. Emergency telephone number

For urgent requests, contact +30 210 7793777

Bucharest Emergency Clinical Hospital: Calea Floreasca no. 8, sector 1, Bucharest
Permanently callable phone number: 021 5992300, ext. 291 e-mailspital@urgentafloreasca.ro
Targu Mures County Emergency Clinical Hospital: Str. Prof. Dr. G. Marinescu no. 50, Tg. Mureÿ, Mureÿ County. Permanently callable phone number: 212111, 211292, 217235 e-mail: secretariat@spitjudms.ro

SECTION 2. Hazard identification

2.1. Classification of the substance or mixture

The product is classified as hazardous in accordance with the provisions of Regulation (EC) No. 1272/2008 (CLP) (and subsequent amendments and supplements). The product therefore requires a safety data sheet that complies with the provisions of Regulation (EU) 2020/878.
Any additional information on health and/or environmental risks is presented in sections 11 and 12 of this sheet. Classification and

indication of danger:

Serious eye injuries, category 1	H318	Causes serious eye damage.
Skin irritation, category 2	H315	Causes skin irritation.
Skin sensitization, category 1A	H317	It may cause an allergic skin reaction.
Hazardous to the aquatic environment, chronic toxicity, category 2	H411	Toxic to aquatic life with long-term effects duration.

2.2. Label elements

Hazard labelling in accordance with Regulation (EC) No 1272/2008 (CLP) and subsequent amendments and supplements. Pictograms

of danger:



Signal words: **danger**

Hazard phrases:

H318	**Causes serious eye damage.**
H315	**Causes skin irritation.**
H317	**It may cause an allergic skin reaction.**
H411	**Toxic to aquatic life with long lasting effects duration.**

Caution statements:

P305+P351+P338	**IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**
P280	**Wear protective gloves/eye protection/face protection.**
P310	**Call a POISON CENTER or doctor immediately.**
P273	**Avoid release to the environment.**
P391	**Collect the spills.**
P321	**Specific treatment (see . . . on this label).**
P362+P364	**Remove contaminated clothing and wash before reuse.**
P272	**Contaminated work clothes should not be left outside the workplace.**
P501	**Dispose of contents or container in accordance with local/ national/international regulations.**
P102	**Keep out of reach of children.**
P101	**If medical advice is needed, have the product container or label at hand.**
P261	**Avoid breathing fumes, mist or spray.**
P264	**Wash thoroughly with plenty of soap and water after handling.**

Contain: Quaternary ammonium compounds, benzyl-C12-14 (even number) alkyldimethyl, chlorides
octylinone (ISO), 2-octyl-2H-isothiazol-3-one
3-iodo-2-propynyl butylcarbamate

The product is not intended for uses as defined in Directive 2004/42/EC.

2.3. Other hazards

Based on the available data, the product does not contain PBT or vPvB in percentages greater than 0.1%. The product does not contain substances with endocrine disrupting properties in concentration greater than 0.1%.

SECTION 3. Composition/information on ingredients

3.2. Mixtures

Contain:

Identification	x= Conc. %	Classification (EC) 1272/2008 (CLP)
Quaternary ammonium compounds, benzyl-C12-14 (numbered para)alkyldimethyl, chlorides		
INDEX -	3 x< 5	Acute Tox. 4 H302, Skin Corr. 1B H314, Eye Dam. 1 H318, Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1
EC 270-325-2		ATE Oral: 500 mg/kg
CAS 68424-85-1		
2-(2-butoxyethoxy)ethanol		
INDEX 603-096-00-8	0 < x< 5	Eye Irrit. 2 H319
EC 203-961-6		
CAS 112-34-5		
3-iodo-2-propynyl butylcarbamate		
INDEX -	0 < x< 0.25	Acute Tox. 3 H331, Acute Tox. 4 H302, STOT RE 1 H372, Eye Dam. 1 H318, Skin Sens. 1 H317, Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1
EC 259-627-5		LD50 Oral: 1276 mg/kg, LC50 Inhalation vapor: 8 mg/l/4h
CAS 55406-53-6		
octhylinone (ISO), 2-octyl-2H-isothiazol-3-one		
INDEX 613-112-00-5	0.025 x < 0.1	Acute Tox. 2 H330, Acute Tox. 3 H301, Acute Toxicity. 3 H311, Skin Corr. 1C H314, Eye Dam. 1 H318, Skin Sens. 1A H317, Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=100, EUH071
EC 247-761-7		Skin Sensitization 1A H317: 0.0015%
CAS 26530-20-1		ATE Oral: 100 mg/kg, LD50 Dermal: 690 mg/kg, ATE Inhalation gas: 100 ppm
REACH Reg. 01-2120768921-45- XXXX		

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

SECTION 4. First aid measures

4.1. Description of first aid measures

If in doubt or if symptoms are present, contact a doctor and show him/her this document. In case of more severe symptoms, seek medical help immediately.

EYES: Remove contact lenses, if present and easy to do. Rinse immediately with plenty of water for at least 15 minutes, holding the eyelids wide open. Get medical advice/attention.

SKIN: Remove all contaminated clothing immediately. Wash immediately and thoroughly with running water (and soap, if possible). Get medical advice/attention. Avoid further contact with contaminated clothing.

INGESTION: Do not induce vomiting unless directed to do so by a physician. Do not give anything by mouth to an unconscious person. Get medical advice/attention.

INHALATION: Remove victim to fresh air, away from the scene of the accident. In case of respiratory symptoms (cough, wheezing, difficulty breathing, asthma), keep victim in a position comfortable for breathing. If necessary, administer oxygen. If subject has stopped breathing, administer artificial respiration. Obtain medical advice/attention.

Rescuer's protection

It is good practice for rescuers providing support to a person who has been exposed to a chemical substance or mixture to wear personal protective equipment.
The nature of this protection depends on the hazard level of the substance or mixture, the type of exposure and the degree of contamination. In the absence of other more specific indications, the use of disposable gloves is recommended in case of possible contact with body fluids. For the type of PPE appropriate to the characteristics of the substance or mixture, see section 8.

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

No specific information is known regarding symptoms and effects caused by the product.

DELAYED EFFECTS: Based on currently available information, there are no known cases of delayed effects following exposure to this product.

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

Call a POISON CENTER or doctor immediately.

Means available at the workplace for specific and immediate treatment Running water

for washing skin and eyes.

SECTION 5. Firefighting measures

5.1. Extinguishing media

ADEQUATE FIRE EXTINGUISHING EQUIPMENT
Extinguishing equipment should be of the conventional type: carbon dioxide, foam, powder and water spray. INADEQUATE 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 water jets to cool containers to prevent product decomposition and the release of substances potentially hazardous to health. Always wear full fire-fighting equipment. Collect extinguishing water to prevent it from flowing into the sewage system. Dispose of contaminated used water for extinguishing and fire debris in accordance with applicable regulations.
SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS
Normal firefighting clothing, namely firefighter's kit (BS EN 469), gloves (BS EN 659) and boots (HO specifications A29 and A30) in combination with a positive pressure, open circuit, self-contained breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Block the drain if there is no danger.
Wear appropriate protective equipment (including personal protective equipment as specified in section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. This applies to both processing personnel and those involved in emergency procedures.

6.2. Environmental precautions

The product must not enter the sewage system or come into contact with surface or underground water.

6.3. Methods and materials for containment and cleaning up

Collect spilled product in a suitable container. Assess the compatibility of the container to be used by checking section 10. Absorb the remainder with inert absorbent material.

Ensure that the spill area is well ventilated. Contaminated material should be disposed of in accordance with the provisions of section 13.

6.4. Reference to other sections

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

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Before handling the product, consult all other sections of this Material Safety Data Sheet. Avoid release to the environment. Do not eat, drink or smoke during use. Remove any contaminated clothing and personal protective equipment before entering areas where people eat.

7.2. Conditions for safe storage, including any incompatibilities

Keep only in the original container. Store containers tightly closed 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 is not available.

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Regulatory references:

GBR	**United Kingdom**	**EH40/2005 Occupational Exposure Limits (Fourth Edition 2020)**
eu	**EU OEL**	**Directive (EU) 2022/431; Directive (EU) 2019/1831; Directive (EU) 2019/130; Directive (EU) 2019/983; 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 98/24/EC; Directive 91/322/EEC.**

Quaternary ammonium compounds, benzyl-C12-14 (even numbered)alkyldimethyl, chlorides
Predicted No Effect Concentration - PNEC

Normal value in fresh water	0.0009	mg/l
Normal value in seawater	0.00096	mg/l
Normal value for freshwater sediments	12.27	mg/kg
Normal value for marine water sediments	13.09	mg/kg
Normal value for water, intermittent release	0.00016	mg/l
Normal value of STP microorganisms	0.4	mg/l

Health - Derived No Effect Level - DNEL / DMEL

	Effects on consume				Effects on workers			
Route of exposure	Acute local	Acute systemic	Local news	CHRONIC systemic	Acute local	Acute systemic	Local Chronicle	Chronicle Sistema
Oral				3.4 mg/kg/day				
Inhalation				1.64 mg/m3				3.96 mg/m3
Skin				3.4 mg/kg/day				5.7 mg/kg/day

2-(2-butoxyethoxy)ethanol

Threshold limit value

Type Country		TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
WEL	GBR	67.5	10	101.2	15	
steel	eu	67.5	10	101.2	15	

Health - Derived No Effect Level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	CHRONIC Sistema	Local acute	Acute systemic	Local Chronicle	Chronicle Sistema
Inhalation							67.5 mg/m3	67.5 mg/m3

Legend:

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

VND= hazard identified, but no DNEL/PNEC available; NEA = no expected exposure; NPI = no hazard identified; LOW= low hazard; MED = medium hazard; HIGH = high hazard.

8.2. Exposure control

Since the use of appropriate technical equipment must always take priority over personal protective equipment, ensure that the workplace is well ventilated through effective local exhaust ventilation.
When choosing personal protective equipment, seek advice from the chemical supplier. Personal protective equipment must bear the CE marking, which attests to its compliance with the applicable standards.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION
Protect your hands with category III work gloves.
When choosing the material for work gloves (see standard EN 374) the following must be taken into account: compatibility, degradation, permeation time.
The resistance of work gloves to chemical agents should be checked before use, as it can be unpredictable. The wear time of the gloves depends on the duration and type of use.

SKIN PROTECTION

Wear professional long-sleeved category II overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash your body with soap and water after removing protective clothing.

EYE PROTECTION
Wear tight-fitting safety goggles (see standard EN ISO 16321).

RESPIRATORY PROTECTION
Respiratory protective devices must be used if the technical measures adopted are not adequate to limit the worker's exposure to the limit values.
considered. Use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit concentration of use. (see standard EN 14387).
If the substance in question is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in case of emergency, wear an open-circuit compressed air breathing apparatus (in accordance with standard EN 137) or an external suction breathing apparatus (in accordance with standard EN 138).
For correct choice of respiratory protective device, see standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROL
Emissions generated by manufacturing processes, including those generated by ventilation equipment, must be verified to ensure compliance with environmental standards.

Product residues must not be disposed of indiscriminately with wastewater or by discharge into watercourses.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

property	Value	Information
appearance	liquid	
Color	transparency	
Smell	characteristic	
Melting point/freezing point	not available	
Initial boiling point	not available	
FLASH	not available	
Lower explosive limit	not available	
Upper explosion limit	not available	
Flash point	> 60 °C	
Autoignition temperature	not available	
Decomposition temperature	not available	
pH	7.5	
Kinematic viscosity	not available	
Dynamic viscosity	2mPa.s	
Solubility	not available	
Partition coefficient: n-octanol/water	not available	
Vapor pressure	not available	
Density and/or relative density	1.00±0.05 kg/L kg/l	
Relative vapor density	not available	
Particle characteristics	does not apply	

9.2. Other information

9.2.1. Information on physical hazard classes

Information is not available.

9.2.2. Other safety features

Information is not available.

SECTION 10. Stability and reactivity

10.1. Reactivity

There are no special risks of reaction with other substances under normal conditions of use.

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

No hazardous reactions are expected under normal conditions of use and storage.

10.4. Conditions to avoid

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

10.5. Incompatible materials

Information is not available.

10.6. Hazardous decomposition products

Information is not available.

SECTION 11. Toxicological information

In the absence of experimental data for the product itself, health hazards are assessed based on the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.
It is therefore necessary to consider the individual hazardous substances indicated in section 3, in order to assess the toxicological effects of exposure to the product.

11.1. Information on hazard classes as defined in Regulation (EC) No. 1272/2008

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

unavailable

Interactive effects

Information unavailable

ACUTE TOXICITY

ATE (Inhalation - vapour) of the mixture:	> 20 mg/l
ATE (oral) of the mixture:	>2000 mg/kg
ATE (Dermal) of the mixture:	Not classified (no significant component)

Quaternary ammonium compounds, benzyl-C12-14 (even numbered)alkyldimethyl, chlorides LD50 (Dermal):

	397.5 mg/kg rat
ATE (oral):	500 mg/kg estimate from table 3.1.2 of Annex I to CLP
	(figure used to calculate the acute toxicity estimate of the mixture)

3-iodo-2-propynyl butylcarbamate

LD50 (oral):	1276 mg/kg
LC50 (inhalation vapor):	8 mg/l/4h

octhylinone (ISO), 2-octyl-2H-isothiazol-3-one

LD50 (Dermal):	690 mg/kg MOUSE
LD50 (oral):	760 mg/kg RAT
LC50 (inhalation gas):	0.58 ppm/4h TWA

SKIN CORROSION / IRRITATION

Causes skin irritation

SERIOUS EYE INJURIES / IRRITATIONS

Causes serious eye damage SENSITIZATION

RESPIRATORY OR SKIN

Skin sensitizer

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

carcinogen

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

11.2. Information on other hazards

Based on available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with effects on human health under evaluation.

SECTION 12. Ecological information

This product is dangerous for the environment and is toxic to aquatic life. In the long term, it has adverse effects on the aquatic environment.

12.1. Toxicity

Quaternary ammonium compounds, benzyl-C12-14 (even numbered) alkyldimethyl, chlorides

LC50 - for fish	**0.515 mg/l/96h**
EC50 - for algae / aquatic plants	**16 mg/l/72h daphnia**
Chronic NOEC for algae/aquatic plants	**9 mg/l**

octhylinone (ISO), 2-octyl-2H-isothiazol-3-one

LC50 - for fish	**0.154 mg/l/96h**
EC50 - for crustaceans	**0.25 mg/l/48h**

3-iodo-2-propynyl butylcarbamate

LC50 - for fish	**0.183 mg/l/96h**
EC50 - for crustaceans	**0.5 mg/l/48h**

12.2. Persistence and degradability

Quaternary ammonium compounds, benzyl-C12-14 (number para)alkyldimethyl, chlorides

Rapidly degradable

12.3. Bioaccumulative potential

Information is not available.

12.4. Mobility in soil

Information is not available.

12.5. Results of PBT and vPvB assessment

Based on available data, the product does not contain PBT or vPvB in percentages greater than 0.1%.

12.6. Endocrine Disrupting Properties

Based on available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with environmental effects under assessment.

12.7. Other adverse effects

Information is not available.

SECTION 13. Disposal considerations

13.1. Waste treatment methods

Reuse, when possible. Product residues must be considered special hazardous waste. The hazard level of waste containing this product assessed in accordance with applicable regulations.

Disposal must be carried out through a licensed waste management company, in accordance with national and local regulations.
The transport of waste may be subject to ADR restrictions.
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in accordance with national waste management regulations.

SECTION 14. Transport information

14.1. UN number or identification number

ADR / RID, IMDG, IATA:	UN 3082
ADR/RID:	In accordance with special provision 375, this product, when packaged in containers with a capacity of 5Kg or 5L, is not subject to the provisions of ADR.
IMDG:	In accordance with section 2.10.2.7 of the IMDG Code, this product, when packaged in containers with a capacity of 5Kg or 5L, is not subject to the provisions of the IMDG Code.
BEHOLD:	In accordance with SP A197, this product, when packaged in containers with a capacity of 5Kg or 5L, not subject to IATA dangerous goods regulations.

14.2. UN proper shipping name

ADR/RID:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, NOS (quaternary ammonium compounds, benzyl-C12-14 (even numbered) alkyldimethyl, chlorides; 3-iodo-2-propynyl butylcarbamate)
IMDG:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, NOS (quaternary ammonium compounds, benzyl-C12-14 (number (par)alkyldimethyl, chlorides; 3-iodo-2-propynyl butylcarbamate)
BEHOLD:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, NOS (quaternary ammonium compounds, benzyl-C12-14 (number (par)alkyldimethyl, chlorides; 3-iodo-2-propynyl butylcarbamate)

14.3. Transport hazard class(es)

ADR/RID:	Class: 9	Tag: 9
IMDG:	Class: 9	Tag: 9
BEHOLD:	Class: 9	Tag: 9

14.4. Packing group

ADR / RID, IMDG, IATA: III

14.5. Environmental risks

ADR/RID: Dangerous for the environment

IMDG: Marine pollutant

BEHOLD: Dangerous for the environment

14.6. Special precautions for the user

ADR/RID:	**HIN - Kemler: 90**	**limited Quantities: 5 lt**	**Tunnel restriction code: (-)**
	Special provisions: 274, 335, 375, 601		
IMDG:	**EMS: FA, SF**	**limited Quantities: 5 lt**	
BEHOLD:	**Cargo:**	**Maximum quantity: 450 IT**	**Packing instructions: 964**
	Passengers:	**Maximum quantity: 450 IT**	**Packing instructions: 964**
	Special provision:	**A97, A158, A197, A215**	

14.7. Bulk maritime transport in accordance with IMO instruments

Information that is not relevant

SECTION 15. Regulatory Information

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

Biocidal product identification number: PT 10-001, Ministry of Agriculture and Rural Development Product register: 637851

Seveso Category - Directive 2012/18/EU: E2

Restrictions relating to the product or the substances contained in accordance with Annex XVII to Regulation (EC) No 1907/2006

Product

Point 3

Substance contained

Point 75

Point 55 2-(2-butoxyethoxy)ethanol

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors

does not apply

Substances on the Candidate List (Art. 59 REACH)

Based on the available data, the product does not contain any SVHC in percentages higher than 0.1%. Substances subject to authorization

(REACH Annex XIV)

None

Substances subject to export reporting under Regulation (EU) 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Health checks

Workers exposed to this chemical agent do not need to undergo medical surveillance, provided that the available risk assessment data demonstrate that the risks to the health and safety of workers are modest and that Directive 98/24/EC is complied with.

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out for the preparation/substances indicated in section 3.

SECTION 16. Other information

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

Acute tox. 2	Acute toxicity, category 2
Acute toxicity. 3	Acute toxicity, category 3
Acute toxicity. 4	Acute toxicity, category 4
STOT RE 1	Specific target organ toxicity - repeated exposure, category 1
Leather Corr. 1B	Skin corrosion, category 1B
Leather Corr. 1C	Skin corrosion, category 1C
Eye damage. 1	Serious eye injuries, category 1
Eye Irrit. 2	Eye irritation, category 2
Irritating to skin. 2	Skin irritation, category 2
Sensitive to skin. 1	Skin sensitization, category 1
Sensitive to skin. 1A	Skin sensitization, category 1A
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity, category 1

Aquatic Chronicle 1	Hazardous to the aquatic environment, chronic toxicity, category 1
Aquatic Chronicle 2	Hazardous to the aquatic environment, chronic toxicity, category 2
H330	Fatal if inhaled.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H302	Harmful if swallowed.
H372	Causes damage to organs through prolonged or repeated exposure.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	It may cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
EUH071	Corrosive to the respiratory tract.

LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstracts Service Number
- EC50: Effective concentration (necessary to induce a 50% effect)
- CE: Identifier in ESIS (European Archive of Existing Substances)
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Service
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulations
- IC50: 50% immobilization concentration
- IMDG: International Maritime Dangerous Goods Code
- IMO: International Maritime Organization
- INDEX: Identifier in Annex VI to CLP
- LC50: Lethal concentration 50%
- LD50: Lethal Dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent, bioaccumulative and toxic
- PEC: Predicted Environmental Concentration
- PEL: Expected Exposure Level
- PMT: Persistent, mobile and toxic
- PNEC: Predicted No Effect Concentration
- REACH: Regulation (EC) 1907/2006
- RID: Regulations concerning the international carriage of dangerous goods by rail
- TLV: threshold limit value
- TLV CEILING: Concentration that should not be exceeded during occupational exposure.
- TWA: Time Weighted Average Exposure Limit
- TWA STEL: short-term exposure limit
- VOC: volatile organic compounds
- vPvB: Very persistent and very bioaccumulative
- vPvM: Very persistent and very mobile
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) No 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 2020/878 (Annex II to the REACH Regulation)

4. Regulation (EC) 790/2009 (I Atp. CLP) 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)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2019/521 (XII Atp. CLP)
16. Delegated Regulation (EU) 2018/1480 (XIII Atp. CLP)
17. Regulation (EU) 2019/1148 18. Delegated Regulation (EU) 2020/217 (XIV Atp. CLP)
19. Delegated Regulation (EU) 2020/1182 (XV Atp. CLP)
20. Delegated Regulation (EU) 2021/643 (XVI Atp. CLP)
21. Delegated Regulation (EU) 2021/849 (XVII Atp. CLP)
22. Delegated Regulation (EU) 2022/692 (XVIII Atp. CLP)
23. Delegated Regulation (EU) 2023/707 24. Delegated Regulation (EU) 2023/1434 (XIX Atp. CLP)
24. Delegated Regulation (EU) 2023/1435 (XX Atp. CLP)
- Merck Index. - 10th Edition -
Chemical Safety Handling - INRS -
Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology - NI
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- Database of
SDS templates for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

Note to users: The information contained in this sheet is based on our own knowledge at the date of the last version. Users must verify the suitability and completeness of the information provided for each specific use of the product.
This document cannot be considered a guarantee for any specific property of the product.
The use of this product is not under our direct control; therefore, users must, at their own risk, comply with applicable health and safety laws and regulations. The manufacturer is exempt from any liability resulting from improper use.
Provide designated personnel with adequate training on how to use chemicals.
CALCULATION METHODS FOR CLASSIFICATION
Chemical and physical hazards: The classification of the product is derived from the criteria set out in the CLP Regulation, Annex I, Part 2. Data for the evaluation of the physicochemical properties are reported in section 9.
Health hazards: The classification of the product is based on the calculation methods set out in Annex I to CLP, Part 3, unless otherwise stated in section 11. Environmental hazards: The classification of the product is based on the calculation methods set out in Annex I to CLP, Part 4, unless otherwise stated in section 12.

Changes from the previous revision: The following sections have been modified: 02 / 03 / 08 / 10 / 11 / 12 / 14 / 15.