



## SAFETY DATA SHEET

According to Annex II to REACH - Regulation (EU) 2020/878  
and to Annex II to UK REACH

### POWER BLOND BLUE

**Revision Nr: 3. Dated: 15/05/2024. Printed on: 16/05/2024**

This safety data sheet replaces all previous versions.

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

Code: 14357 HAIR BIOLOGIC SYSTEM  
Product name: DECO A 200 LA / POWER BLOND BLUE

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

Intended use: hair bleaching powder (cosmetic use).

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

**HAIR BIOLOGIC SYSTEM SRL - VIA PADRE ANTONIO CASAMASSA, 87 - 00119 ROMA**  
**TEL. +39 06.5652045/6 - FAX +39 06.5652150, INFO@HBSSRL.COM, WWW.JALYD.COM**

### 1.4. Emergency telephone number

For urgent inquiries refer to

Azienda ospedaliera "Antonio Cardarelli", III Servizio di anestesia e rianimazione, via Antonio Cardarelli 9, Napoli;  
Azienda ospedaliera universitaria Careggi, U.O. Tossicologia medica, via Largo Brambilla 3, Firenze;  
Centro nazionale d'informazione tossicologica, IRCCS Fondazione Salvatore Maugeri Clinica del lavoro e della riabilitazione, via Salvatore Maugeri 10, Pavia;  
Azienda ospedaliera Niguarda Ca' Grande, piazza Ospedale Maggiore 3, Milano;  
Azienda ospedaliera "Papa Giovanni XXIII", tossicologia clinica, Dipartimento di farmacia clinica e farmacologia, piazza OMS 1, Bergamo;  
Policlinico "Umberto I", PRGM tossicologia d'urgenza, viale del Policlinico 155, Roma;  
del Policlinico "Agostino Gemelli", Servizio di tossicologia clinica, largo Agostino Gemelli 8, Roma;  
Azienda ospedaliera universitaria riuniti, viale Luigi Pinto 1, Foggia;  
Ospedale pediatrico Bambino Gesù, Dipartimento emergenza e accettazione DEA, piazza Sant'Onofrio 4, Roma;  
dell'Azienda ospedaliera universitaria integrata (AOUI) di Verona sede di Borgo Trento, piazzale Aristide Stefani, 1 - 37126 Verona.

## 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 2020/878.

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:

Oxidising liquid, category 3	H272	May intensify fire; oxidiser.
Acute toxicity, category 4	H302	Harmful if swallowed.
Skin corrosion, category 1B	H314	Causes severe skin burns and eye damage.
Serious eye damage, category 1	H318	Causes serious eye damage.
Specific target organ toxicity		
- single exposure, category 3	H335	May cause respiratory irritation.
Respiratory sensitization, category 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitization, category 1	H317	May cause an allergic skin reaction.

## 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:

<b>H272</b>	May intensify fire; oxidiser.
<b>H302</b>	Harmful if swallowed.
<b>H314</b>	Causes severe skin burns and eye damage.
<b>H335</b>	May cause respiratory irritation.
<b>H334</b>	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>H317</b>	May cause an allergic skin reaction.

Precautionary statements:

<b>P210</b>	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
<b>P260</b>	Do not breathe dust / fume / gas / mist / vapours / spray.
<b>P220</b>	Keep away from clothing and other combustible materials.
<b>P305+P351+P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>P303+P361+P353</b>	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
<b>P280</b>	Wear protective gloves/ protective clothing / eye protection / face protection.
<b>P310</b>	Immediately call a POISON CENTER / doctor / ...
<b>P304+P340</b>	IF INHALED: remove person to fresh air and keep comfortable for breathing.
<b>P264</b>	Wash... thoroughly after handling.

<b>Contains:</b>	DISODIUM METASILICATE DIPOTASSIUM PEROXODISULPHATE DIAMMONIUM PEROXODISULPHATE SODIUM PERSULFATE
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## 2.3. Other hazards

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

The product does not contain substances with endocrine disrupting properties in concentration  $\geq$  0.1%.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substances

Information not relevant.

### 3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification (EC) 1272/2008 (CLP)
<b>DIPOTASSIUM PEROXODISULPHATE</b>		
INDEX 016-061-00-1	$25 \leq x < 50$	Ox. Sol. 3 H272, Acute Tox. 4 H302, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Resp. Sens. 1 H334, Skin Sens. 1 H317 LD50 Orale: >700 mg/kg
CE 231-781-8 CAS 7727-21-1 Reg. REACH 01-2119495676-19-0000		
<b>DIAMMONIUM PEROXODISULPHATE</b>		
INDEX 016-060-00-6	$20 \leq x < 25$	Ox. Sol. 3 H272, Acute Tox. 4 H302, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Resp. Sens. 1 H334, Skin Sens. 1 H317 LD50 Orale: 495 mg/kg
CE 231-786-5 CAS 7727-54-0 Reg. REACH 01-2119495973-19-0000		

**DISODIUM METASILICATE**

INDEX 014-010-00-8

 $20 \leq x < 25$ Met. Corr. 1 H290, Skin Corr. 1B H314,  
Eye Dam. 1 H318, STOT SE 3 H335

CE 229-912-9

CAS 6834-92-0

Reg. REACH 01-2119449811-37-xxxx

**SODIUM PERSULFATE**

INDEX -

 $5 \leq x < 10$ Ox. Sol. 3 H272, Acute Tox. 4 H302,  
Eye Irrit. 2 H319, Skin Irrit. 2 H315,  
STOT SE 3 H335, Resp. Sens. 1 H334,  
Skin Sens. 1 H317  
LD50 Orale: 895 mg/kg

CE 231-892-1

CAS 7775-27-1

Reg. REACH 01-2119495975-15-0000

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

**4. FIRST AID MEASURES****4.1. Description of first aid measures**

Not specifically necessary. Observance of good industrial hygiene is recommended.

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

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

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

Information not available.

**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. The product is combustible and, when the powder is released into the air in sufficient concentrations and in the presence of a source of ignition, it can create explosive mixtures with air. Fires may start or get worse by leakage of the solid product from the container, when it reaches high temperatures or through contact with sources of ignition.

**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). Do not use a stream of water as it may scatter or spread fire.

**6. ACCIDENTAL RELEASE MEASURES****6.1. Personal precautions, protective equipment and emergency procedures**

Use breathing equipment if fumes or powders are released into the air. 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**

Confine using earth or inert material. Collect as much material as possible and eliminate the rest using jets of water. 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.

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.

7.2. Conditions for safe storage, including any incompatibilities

Keep the product in clearly labelled containers. Keep containers away from any incompatible materials, see section 10 for details.

Store in cool (below 30 °C) and dry areas. Avoid contamination and avoid the presence of reducing agents like lotions and permanent waves. Discard any unused mixture with developer or bleaching lotions, since the container may break. AVOID humid organic material as paper towel, wood, clothes, etc. which could induce spontaneous combustion. Protect from heat and sunlight; store in places far from rain and humidity; never store outdoors. Store separately from other dangerous and incompatible substances.

7.3. Specific end use(s)

Information not available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Regulatory references:

ESP	España	Límites de exposición profesional para agentes químicos en España 2021
	TLV-ACGIH	ACGIH 2022

DIAMMONIUM PEROXODISULPHATE

Threshold Limit Value

Type	Country	TWA/8h mg/m3	ppm	STEL/15min mg/m3	ppm	Remarks / Observations
VLA	ESP	0,1				
TLV-ACGIH		0,1				

SODIUM PERSULFATE

Threshold Limit Value

Type	Country	TWA/8h mg/m3	ppm	STEL/15min mg/m3	ppm	Remarks / Observations
TLV-ACGIH		0,1				

Legend:

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

During the risk assessment process, it is essential to take into consideration the ACGIH occupational exposure levels for inert particulate not otherwise classified (PNOC respirable fraction: 3 mg/m3; PNOC inhalable fraction: 10 mg/m3). For values above these limits, use a P type filter, whose class (1, 2 or 3) must be chosen according to the outcome of risk assessment.

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

In the case of prolonged contact with the product, protect the hands with penetration-resistant work gloves (see standard EN 374).

Work glove material must be chosen according to the use process and the products that may form. Latex gloves may cause sensitivity reactions.

SKIN PROTECTION

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

EYE PROTECTION

Wear airtight protective goggles (see standard EN 166).

In the presence of risks of exposure to splashes or squirts during work, adequate mouth, nose and eye protection should be used to prevent accidental absorption.

RESPIRATORY PROTECTION

Use a type P filtering facemask, whose class (1, 2 or 3) and effective need, must be defined according to the outcome of risk assessment (see standard EN 149).

ENVIRONMENTAL EXPOSURE CONTROLS

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

## 9. PHYSICAL AND CHEMICAL PROPERTIES

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

Properties	Value	Information
Appearance	powder	
Colour	light blue	
Odour	characteristic	
Melting point / freezing point	not available	
Initial boiling point	not available	
Flammability	not available	
Lower explosive limit	not available	
Upper explosive limit	not available	
Flash point	not available	
Auto-ignition temperature	not available	
Decomposition temperature	not available	
pH	9,6-10,6	
Kinematic viscosity	not available	
Solubility	partially soluble in water	
Partition coefficient: n-octanol/water	not available	
Vapour pressure	not available	
Density and/or relative density	not available	
Relative vapour density	not available	
Particle characteristics	not available	

### 9.2. Other information

#### 9.2.1. Information with regard to physical hazard classes

Information not available

#### 9.2.2. Other safety characteristics

Information not available

## 10. STABILITY AND REACTIVITY

### 10.1. Reactivity

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

DISODIUM METASILICATE

The aqueous solutions act as: strong bases.

SODIUM PERSULFATE

Decomposes at temperatures above 145°C/293°F.

With water it reduces to bisulphate with the development of oxygen.

### 10.2. Chemical stability

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

### 10.3. Possibility of hazardous reactions

The powders are potentially explosive when mixed with air.

DISODIUM METASILICATE

May react dangerously with: fluorine, lithium.

SODIUM PERSULFATE

Reacts violently with: combustible substances, reducing substances. Fire hazard. Possibility of explosion.

### 10.4. Conditions to avoid

Avoid environmental dust build-up.

### 10.5. Incompatible materials

DISODIUM METASILICATE

The aqueous solution is incompatible with: acids, organic anhydrides, acrilates, alcohols, aldehydes, alkyl oxides, cresols, caprolactam, epichlorohydrin, ethylene dichloride, glycols, isocyanates, ketones, nitrates, phenols, vinyl acetate.

### 10.6. Hazardous decomposition products

SODIUM PERSULFATE

May develop: sulphur oxides, oxygen.

## 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 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 not available

#### Interactive effects

Information not available

#### ACUTE TOXICITY

ATE (Inhalation) of the mixture: Not classified (no significant component)

ATE (Oral) of the mixture: 899,50 mg/kg

ATE (Dermal) of the mixture: Not classified (no significant component)

#### DIPOTASSIUM PEROXODISULPHATE

LD50 (Cutanea): > 2000 mg/kg (ratto)

LD50 (Orale): > 700 mg/kg (ratto)

LC50 (Inalazione nebbie/polveri): > 2,95 mg/l (ratto)

#### DIAMMONIUM PEROXODISULPHATE

LD50 (Dermal): 2000 mg/kg Rat

LD50 (Oral): 495 mg/kg Rat

LC50 (Inhalation mists/powders): 2,95 mg/l/4h Rat

#### DISODIUM METASILICATE

LD50 (Dermal): > 5000 mg/kg bw (Ratto)

LD50 (Oral): 600 mg/kg Rat

LC50 (Inhalation mists/powders): > 2,06 g/m<sup>3</sup> (Ratto)

#### SODIUM PERSULFATE

LD50 (Dermal): > 10000 mg/kg Rabbit

LD50 (Oral): 895 mg/kg Rat

LC50 (Inhalation mists/powders): 5,1 mg/l/4h Rat

#### SKIN CORROSION / IRRITATION

Corrosive for the skin

#### SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

#### RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

Sensitising for the respiratory system

#### 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

### 11.2. Information on other hazards

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

## 12. ECOLOGICAL INFORMATION

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

### 12.1. Toxicity

#### DIPOTASSIUM PEROXODISULPHATE

LC50 - for Fish	> 76,3 mg/l/96h (trout iridea)
EC50 - for Crustacea	> 120 mg/l/48h (daphnia)
EC50 - for Algae / Aquatic Plants	> 83,7 mg/l/72h (pseudokirchneriella subcapitata)

#### DISODIUM METASILICATE

LC50 - for Fish	1108 mg/l/96h (Brachydanio rerio)
EC50 - for Crustacea	1700 mg/l/48h (Daphnia magna)
EC50 - for Algae / Aquatic Plants	207 mg/l/72h (Schenedesmus subspicatus)

#### SODIUM PERSULFATE

LC50 - for Fish	76,3 mg/l/96h
EC50 - for Crustacea	83,7 mg/l/48h

#### DIAMMONIUM PEROXODISULPHATE

LC50 - for Fish	76,3 mg/l/96h (trout iridea)
EC50 - for Crustacea	120 mg/l/48h (Daphnia magna)

### 12.2. Persistence and degradability

#### DISODIUM METASILICATE

Solubility in water	210000 mg/l
Degradability: information not available	
Rapidly degradable	

#### SODIUM PERSULFATE

Solubility in water	> 10000 mg/l
Degradability: information not available	

#### DIAMMONIUM PEROXODISULPHATE

Solubility in water	> 10000 mg/l
Degradability: information not available	

### 12.3. Bioaccumulative potential

Information not available

### 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  $\geq$  than 0,1%.

### 12.6. Endocrine disrupting properties

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

### 12.7. Other adverse effects

Information not available

## 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.

## 14. TRANSPORT INFORMATION

### 14.1. UN number or ID number

ADR / RID, IMDG, IATA: 3085

### 14.2. UN proper shipping name

ADR / RID: OXIDIZING SOLID, CORROSIVE, N.O.S. (potassium persulfate, sodium metasilicate)

IMDG: OXIDIZING SOLID, CORROSIVE, N.O.S. (potassium persulfate, sodium metasilicate)

IATA: OXIDIZING SOLID, CORROSIVE, N.O.S. (potassium persulfate, sodium metasilicate)

### 14.3. Transport hazard class(es)

ADR / RID: Class: 5.1 Label: 5.1 (8)



IMDG: Class: 5.1 Label: 5.1 (8)



IATA: Class: 5.1 Label: 5.1 (8)



### 14.4. Packing group

ADR / RID, IMDG, IATA: III

### 14.5. Environmental hazards

ADR / RID: NO

IMDG: NO

IATA: NO

### 14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 58 Special provision: 274	Limited Quantities: 5 kg	Tunnel restriction code: (E)
IMDG:	EMS: F-A, S-Q	Limited Quantities: 5 kg	
IATA:	Cargo:	Maximum quantity: 100 Kg	Packaging instructions: 563
	Passengers:	Maximum quantity: 25 kg	Packaging instructions: 559
	Special provision:	A3	

### 14.7. Maritime transport in bulk according to IMO instruments

Information not relevant

## 15. REGULATORY INFORMATION

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

Seveso Category - Directive 2012/18/EU: P8

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

Contained substance

Point 75

Point 65 DIAMMONIUM PEROXODISULPHATE REACH Reg.: 01-2119495973-19-0000

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

not applicable

Substances in Candidate List (Art. 59 REACH)

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

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to Regulation (EU) 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

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

## 16. OTHER INFORMATION

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

<b>Ox. Liq. 3</b>	Oxidising liquid, category 3
<b>Ox. Sol. 3</b>	Oxidising solid, category 3
<b>Met. Corr. 1</b>	Substance or mixture corrosive to metals, category 1
<b>Acute Tox. 4</b>	Acute toxicity, category 4
<b>Skin Corr. 1B</b>	Skin corrosion, category 1B
<b>Eye Dam. 1</b>	Serious eye damage, category 1
<b>Eye Irrit. 2</b>	Eye irritation, category 2
<b>Skin Irrit. 2</b>	Skin irritation, category 2
<b>STOT SE 3</b>	Specific target organ toxicity - single exposure, category 3
<b>Resp. Sens. 1</b>	Respiratory sensitization, category 1
<b>Skin Sens. 1</b>	Skin sensitization, category 1
<b>H272</b>	May intensify fire; oxidiser.
<b>H290</b>	May be corrosive to metals.
<b>H302</b>	Harmful if swallowed.
<b>H314</b>	Causes severe skin burns and eye damage.
<b>H318</b>	Causes serious eye damage.
<b>H319</b>	Causes serious eye irritation.
<b>H315</b>	Causes skin irritation.
<b>H335</b>	May cause respiratory irritation.
<b>H334</b>	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>H317</b>	May cause an allergic skin reaction.

### LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required 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 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: 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: Regulation (EC) 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: Time-weighted average exposure limit
- TWA STEL: Short-term 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) 2020/878 (II Annex of 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 (UE) 2018/1480 (XIII Atp. CLP)
17. Regulation (EU) 2019/1148
18. Delegated Regulation (UE) 2020/217 (XIV Atp. CLP)
19. Delegated Regulation (UE) 2020/1182 (XV Atp. CLP)
20. Delegated Regulation (UE) 2021/643 (XVI Atp. CLP)
21. Delegated Regulation (UE) 2021/849 (XVII Atp. CLP)
22. Delegated Regulation (UE) 2022/692 (XVIII 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.

## CALCULATION METHODS FOR CLASSIFICATION

Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.

Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.

Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.

### Changes to previous review:

The following sections were modified:

01 / 02 / 03 / 05 / 09 / 11 / 14 / 15 / 16.