

Safety Data Sheet

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

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

1.1. Product identifier

Code: **TC54930**
 Product name: **HYDROGEN PEROXIDE puriss. 30%**

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

Identified Uses	Industrial	Professional	Consumer
Laboratory reagent	✓	-	-

1.3. Details of the supplier of the safety data sheet

Name: **TITOLCHIMICA SPA**
 Full address: **VIA S.PIETRO MARTIRE 1054**
 District and Country: **45030 PONTECCHIO POLESINE (RO)**
ITALIA
 Tel. **+39425492644**

e-mail address of the competent person

responsible for the Safety Data Sheet
 Supplier: **utecnico@titolchimica.it**
TITOLCHIMICA SPA

1.4. Emergency telephone number

For urgent inquiries refer to

Pavia - National Center for Toxicological Information 0382/24444;
Milan - Hosp. Niguarda Ca' Granda 02/66101029;
Bergamo - Hosp. "Pope John XXIII" 800/883300;
Verona - Hosp. Integrated Verona 800/011858
Florence - Hosp. "Careggi" U.O. Medical Toxicology 055/7947819;
Rome - "A. Gemelli" Polyclinic 06/3054343;
Rome - "Umberto I" Polyclinic 06/49978000;
Rome - "Bambino Gesù Pediatric Hospital" 06/68593726
Naples - Hosp. "A. Cardarelli" 081/5453333;
Foggia - Hosp. University of Foggia 800/183459

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 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:

Acute toxicity, category 4	H302	Harmful if swallowed.
Acute toxicity, category 4	H332	Harmful if inhaled.
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.
Hazardous to the aquatic environment, chronic toxicity, category 3	H412	Harmful to aquatic life with long lasting effects.

2.2. Label elements

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

Hazard pictograms:

TC54930 - HYDROGEN PEROXIDE puriss. 30%

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 Signal words: **Danger**
Hazard statements:

H302+H332 Harmful if swallowed or if inhaled.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements:

P261 Avoid breathing dust / fume / gas / mist / vapours / spray.
P264 Wash hands thoroughly after use.
P280 Wear protective gloves / eye protection / face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER / doctor.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Contains: Hydrogen peroxide solution...%

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%.

SECTION 3. Composition/information on ingredients
3.2. Mixtures

Contains:

Identification	Conc. %	Classification (EC) 1272/2008 (CLP)
Hydrogen peroxide solution...%		
INDEX 008-003-00-9	29 - 31	Ox. Liq. 1 H271, Acute Tox. 4 H302, Acute Tox. 4 H332, Skin Corr. 1A H314, Eye Dam. 1 H318, STOT SE 3 H335, Aquatic Chronic 3 H412, Classification note according to Annex VI to the CLP Regulation: B
EC 231-765-0		Ox. Liq. 1 H271: \geq 70%, Ox. Liq. 2 H272: \geq 50% - < 70%, Skin Corr. 1A H314: \geq 70%, Skin Corr. 1B H314: \geq 50% - < 70%, Skin Corr. 1C H314: \geq 50% - < 70%, Skin Irrit. 2 H315: \geq 35% - < 50%, Eye Dam. 1 H318: \geq 8% - < 50%, Eye Irrit. 2 H319: \geq 5% - < 8%, STOT SE 3 H335: \geq 35%
CAS 7722-84-1		LD50 Oral: 1193 mg/kg, ATE Inhalation mists/powders: 1,5 mg/l, ATE Inhalation vapours: 11 mg/l
REACH Reg. 01-2119485845-22-XXXX		

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

SECTION 4. First aid measures
4.1. Description of first aid measures
EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.

SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention immediately. Wash contaminated clothing before using it again.

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INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.
INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

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

Ingestion causes gastrointestinal irritation, the severity of which depends on the concentration of the solution. The main symptoms are: vomiting (which may be frothy due to the release of oxygen and generate the risk of aspiration), haematemesis, burning of the throat and gastric distension due to the release of oxygen. Gastrointestinal bleeding and burns to the stomach and duodenum may occur.

Acute effects

Skin: irritation

Eyes: irritation, corneal damage

Lungs: irritation, edema

Digestive system: in case of ingestion abdominal colic, haematemesis

Chronic effects.

Skin appendages: hair depigmentation

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

Treat symptomatologically.

In case of accident or illness, consult a doctor immediately (if possible show safety card).

SECTION 5. Firefighting measures

The product is not flammable and does not feed the flames.

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

Organic compounds

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Avoid breathing combustion products: involved in the fire, it can decompose producing oxygen.

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**

For non-emergency personnel

Do not take any action involving any personal risk or without adequate training. Evacuate surrounding areas. Do not touch or walk on spilled material.

Wear appropriate protective equipment (including personal protective equipment referred to in section 8 of this Safety Data Sheet) to prevent contamination of skin, eyes and personal clothing. Wear an appropriate respirator when ventilation is inadequate.

Do not inhale mists/vapours/fumes. Avoid dispersion of the product in the environment. Follow appropriate internal procedures for non-authorized personnel to intervene directly in the event of accidental release.

For direct responders

Stop the leak if safe to do so.

Evacuate non-authorized personnel. Wear appropriate protective equipment. (see section 8 of this Safety Data Sheet). Follow appropriate internal procedures for authorized personnel. Isolate the danger area and deny entry. Ventilate confined spaces before entering. Control fumes/vapors.

Clear unequipped persons away. Eliminate all sources of ignition (cigarettes, flames, sparks, etc.) or heat from the area where the leak occurred.

6.2. Environmental precautions

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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. 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

Check the integrity of the packaging before handling. If possible, work upwind.

Avoid contact with skin and eyes. Do not inhale vapours/fumes. Do not eat, drink or smoke during use or handling. Wash hands after use. Avoid dispersion of the product into the environment. Handle in a suitable place with good general ventilation. Once emptied, containers must be transferred without delay to the designated collection area pending disposal or reuse.

Never reuse empty packaging before it has been subjected to industrial cleaning.

Keep away from heat, sparks and open flames, do not smoke or use matches or lighters. Avoid accumulation of electrostatic charges.

The product in water develops strong heat, when diluting always add the product to the available water (do not pour water on the product).

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store in a ventilated and dry place, far away from sources of ignition. Keep containers well sealed. Keep the product in clearly labelled containers. Avoid overheating. Avoid violent blows. 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	Forschungsgemeinschaft MAK- und BAT-Werte-Liste 2022 Ständige Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe Mitteilung 58
ESP	España	Límites de exposición profesional para agentes químicos en España 2023
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France Décret n° 2021-1849 du 28 décembre 2021
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Fourth Edition 2020)

Hydrogen peroxide solution...% Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	0,71	0,5	0,71	0,5	
MAK	DEU	0,71	0,5	0,71	0,5	
VLA	ESP	1,4	1			
VLEP	FRA	1,5	1			
WEL	GBR	1,4	1	2,8	2	
Predicted no-effect concentration - PNEC						
Normal value in fresh water				0,013		mg/l

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Normal value in marine water	0,013	mg/l
Normal value for fresh water sediment	0,047	mg/kg
Normal value for marine water sediment	0,047	mg/kg
Normal value of STP microorganisms	4,66	mg/l
Normal value for the terrestrial compartment	0,002	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation					3 mg/m3		1,4 mg/m3	

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 ; LOW = low hazard ; MED = medium hazard ; HIGH = high hazard.

8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION

Protect hands with category III work gloves.

The following should be considered when choosing work glove material (see standard EN 374): compatibility, degradation, permeability time.

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 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 ISO 16321).

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

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. Use a mask with a type B filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387).

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.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

SECTION 9. Physical and chemical properties
9.1. Information on basic physical and chemical properties

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Hydrogen peroxide solution...%

flammable substances, acetone, ethanol, glycerin, organic sulphides, hydrated bases, oxidizable materials, iron, copper, bronze, chromium, zinc, lead, silver, manganese and acetic acid.

10.6. Hazardous decomposition products

Decomposing to oxygen and water, it releases heat.

SECTION 11. Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008
Metabolism, toxicokinetics, mechanism of action and other information

It is an endogenous product formed in the cells of the organism. It penetrates through the skin and mucous membranes and decomposes in the underlying tissues. This causes a widespread infiltration of the released oxygen and the formation of emboli.

In the organism of mammals, the enzymes that work most for the metabolism of the substance are glutathione peroxidase and catalase (INRS, 2007).

Information on likely routes of exposure

The main potential routes of exposure are inhalation, skin or eye contact and ingestion

Delayed and immediate effects as well as chronic effects from short and long-term exposure

In case of accidental ingestion there is a risk of caustic lesions of the buccal and pharyngeal mucosa. The decomposition of hydrogen peroxide causes gastric or esophageal distension, with possible local hemorrhages.

Inhalation of vapors or mists of concentrated solutions causes severe inflammation of the nose, throat and respiratory system.

If exposure continues there is pulmonary edema, neurological, digestive and even general symptoms (convulsions and loss of consciousness).

In workers, repeatedly exposed to vapors of a hydrogen peroxide solution, yellowish or buff-colored pigmented skin plaques have been observed, associated with hair discoloration. These alterations disappear a few months after the end of exposure

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation - mists / powders) of the mixture:	5,00 mg/l
ATE (Inhalation - vapours) of the mixture:	Acute Tox. 4
ATE (Inhalation - gas) of the mixture:	Acute Tox. 4
ATE (Oral) of the mixture:	>2000 mg/kg
ATE (Dermal) of the mixture:	Not classified (no significant component)

Hydrogen peroxide solution...%

LD50 (Dermal):	> 2000 mg/kg/24h coniglio (soluzione al 35%)
LD50 (Oral):	1193 mg/kg ratto (maschio-sol.35%) - 1270 mg/kg (femmina-sol.35%)
LC50 (vapour)	> 170 mg/m3, 4 Hours rat

SKIN CORROSION / IRRITATION

Causes skin irritation

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

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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.

SECTION 12. Ecological information

This product is dangerous for the environment and the aquatic organisms. In the long term, it has negative effects on the aquatic environment.

12.1. Toxicity

Hydrogen peroxide solution...%

LC50 - for Fish	16,4 mg/l/96h Pimephales promelas
EC50 - for Crustacea	2,4 mg/l/48h Daphnia pulex (Pulce d'acqua)
EC50 - for Algae / Aquatic Plants	1,38 mg/l/48h alge
Chronic NOEC for Crustacea	0,63 mg/l/21d Daphnia magna
Chronic NOEC for Algae / Aquatic Plants	0,63 mg/l/72h Skeletonema costatum

12.2. Persistence and degradability

Hydrogen peroxide solution...%

The product is biodegradable

12.3. Bioaccumulative potential

Hydrogen peroxide solution...%

No bioaccumulation is expected, hydrogen peroxide is broken down by enzymes and does not accumulate in cellular systems (ECETOC, 1993).

12.4. Mobility in soil

Hydrogen peroxide solution...%

Soluble in water and can be dispersed in the soil.

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

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 or ID number

ADR / RID, IMDG, IATA: UN 2014

14.2. UN proper shipping name

ADR / RID: HYDROGEN PEROXIDE, AQUEOUS

IMDG: HYDROGEN PEROXIDE, AQUEOUS

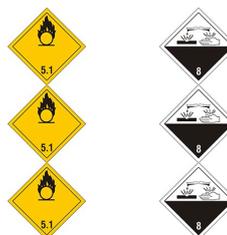
IATA: HYDROGEN PEROXIDE, AQUEOUS

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: II

14.5. Environmental hazards

ADR / RID: NO

IMDG: not marine pollutant

IATA: NO

14.6. Special precautions for user

ADR / RID: HIN - Kemler: 58 Limited Quantities: 1 L Tunnel restriction code: (E)
 Special provision: -

IMDG: EMS: F-H, S-Q Limited Quantities: 1 L

IATA: Cargo: Maximum quantity: 5 L Packaging instructions: 554

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Passengers: Maximum quantity: 1 L Packaging instructions: 550
 Special provision: -

14.7. Maritime transport in bulk according to IMO instruments

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/EU: None

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

<u>Product</u>	
Point	3

<u>Contained substance</u>	
Point	75

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

Restricted explosives precursor

The acquisition, introduction, possession or use of that restricted explosives precursor by members of the general public is subject to a restriction as set out in Article 5(1) and (3). Restricted explosives precursors shall not be made available to, or introduced, possessed or used by members of the general public.

The acquisition, introduction, possession or use of that regulated explosives precursor by members of the general public is subject to reporting obligations as set out in Article 9.

All suspicious transactions and significant disappearances and thefts must be reported to the relevant national contact point.

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.

SECTION 16. Other information

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

Ox. Liq. 1	Oxidising liquid, category 1
Ox. Liq. 2	Oxidising liquid, category 2
Acute Tox. 4	Acute toxicity, category 4
Skin Corr. 1A	Skin corrosion, category 1A
Skin Corr. 1B	Skin corrosion, category 1B
Skin Corr. 1C	Skin corrosion, category 1C
Skin Corr. 1	Skin corrosion, category 1
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
H271	May cause fire or explosion; strong oxidiser.
H272	May intensify fire; oxidiser.
H302	Harmful if swallowed.
H302+H332	Harmful if swallowed or if inhaled.
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
- 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
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PMT: Persistent, mobile and toxic
- 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.

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- 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) 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)
 23. Delegated Regulation (UE) 2023/707
 24. Delegated Regulation (UE) 2023/1434 (XIX Atp. CLP)
 24. Delegated Regulation (UE) 2023/1435 (XX 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.

Safety data sheet no. 4 of 26/08/2024. Complete revision of version no.3 of 23/04/2024.