Safety Data Sheet

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

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

1.1. Product identifier

Product name	**SILVER**
Chemical name and synonyms	**SILVER MASSIVE** [particle diameter ≥ 1 mm]
INDEX number	**047-004-00-9**
EC number	**231-131-3**
CAS number	**7440-22-4**
REACH reg. no.	**01-2119555669-21-0048**

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

Intended use	Industrial uses, pharmaceutical sector, precious metals sector.
Uses advised against	Uses other than those stated.

1.3. Details of the supplier of the Safety data sheet

Name	TCA Spa
Full address	Zona Ind. Castelluccio, 11
District and Country	52010 Capolona (AR) - ITALY
	Tel. +39 0575 3911
	Fax +39 0575 451337
e-mail address of the competent person	
responsible for the safety data sheet	tcaspa@pec.tcaspa.com
	Serena Tavanti

1.4. Emergency telephone number

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:

Reproductive toxicity, category 2	H361f	Suspected of damaging fertility.
Specific target organ toxicity - repeated exposure, category 2	H373	May cause damage to nervous system through prolonged or repeated exposure.

2.2. Label elements

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

Hazard pictograms:

Signal words: **WARNING**

Hazard statements:

H361f	Suspected of damaging fertility.
H373	May cause damage to nervous system through prolonged or repeated exposure.

Precautionary statements:

P201	Obtain special instructions before use.
P260	Do not breathe dust / fume.
P280	Wear protective gloves / protective clothing / eye protection / face protection.

P308+P313 IF exposed or concerned: Get medical advice / attention.
P314 Get medical advice / attention if you feel unwell.

Contains:
SILVER MASSIVE 047-004-00-9

Labelling unnecessary in accordance with Regulation (CE) 1272/2008 - Annex I - 1.3.4.
1.3.4.Metals in massive form, alloys, mixtures containing polymers, mixtures containing elastomers
1.3.4.1. Metals in massive form, alloys, mixtures containing polymers and mixtures containing elastomers do not require a label according to this Annex, if they do not present a hazard to human health by inhalation, ingestion or contact with skin or to the aquatic environment in the form in which they are placed on the market, although classified as hazardous in accordance with the criteria of this Annex.

2.3. Other hazards

The substance does not have persistence, bioaccumulation and toxicity (PBT) properties and is not very persistent and very bioaccumulative. (vPvB).
The substance does not have endocrine disrupting properties.

SECTION 3. Composition/information on ingredients

3.1. Substances
Contains:

Identification	Conc. %	Classification (EC) 1272/2008 (CLP)
SILVER MASSIVE		
INDEX 047-004-00-9	>99,9	Repr. 2 H361f, STOT RE 2 H373 (nervous system)
CE 231-131-3		
CAS 7440-22-4		
Reg. REACH 01-2119555669-21-0048		

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

In case of doubt or in the presence of symptoms contact a doctor and show him this document.
In case of more severe symptoms, ask for immediate medical aid.
EYES: Remove, if present, contact lenses if the situation allows you to do so easily. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. Get medical advice/attention.
SKIN: Take off contaminated clothing. Wash immediately and thoroughly with running water (and soap if possible). Get medical advice. Avoid further contact with contaminated clothing.
INGESTION: Do not induce vomiting unless explicitly authorised by a doctor. Do not give anything by mouth to an unconscious person. Get medical advice/attention.
INHALATION: Remove victim to fresh air, away from the accident scene. Get medical advice/attention.

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

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

Acute effects:
Fume inhalation may cause metal fume fever with flu-like symptoms (fever, chills, malaise, headache, dry cough, dyspnoea). Respiratory tract irritation.

Chronic effects:
Inhalation: harm to the respiratory system and mucous membrane. Prolonged fume inhalation may harm the respiratory tract.
May cause damage to nervous system through prolonged or repeated exposure.

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

If symptoms occur, whether acute or delayed, consult a doctor.
Means to have available in the workplace for specific and immediate treatment
Running water for skin and eye wash.

SECTION 5. Firefighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT
The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.
UNSUITABLE EXTINGUISHING EQUIPMENT
None in particular.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
Do not breathe combustion products. Metal oxides.

5.3. Advice for firefighters

GENERAL INFORMATION
In massive form, this product is non-flammable.
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

6.1.1 For non-emergency personnel
Do not breathe dust in case of release. Avoid release of dust into the environment. Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Remove any source of ignition, provide adequate ventilation and control the dust. Follow the appropriate internal procedures for personnel not authorised to intervene directly in the event of an accidental release.

6.1.2 For emergency responders
Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Follow the appropriate internal procedures for personnel authorised to intervene directly in the event of an accidental release.

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6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up

Collect spilled product in suitable containers for recovery or disposal, using procedures that minimise the generation of dust in the air. Use explosion-proof equipment.
Do not breathe dust. Avoid release of dust (avoid cleaning dust from surfaces using compressed air). Clean the spillage area with a damp cloth.
Make sure the spillage site is well aired. Evaluate the compatibility of the container to be used, by checking section 10. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

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

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Before handling the product, consult all the other sections of this safety data sheet. Avoid spillage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat. Avoid all ignition sources (sparkles, flames). Avoid dust release. Provide adequate ventilation. Ensure that there is an adequate earthing system for the equipment and personnel. Avoid contact with eyes and skin. Do not breathe dust. Wash hands after use.

7.2. Conditions for safe storage, including any incompatibilities

Store the product in a well ventilated place, far from direct sunlight. Keep the product in clearly labelled containers. Store in a separate and approved area. Keep containers away from any incompatible materials, food or beverage, see section 10 for details. Eliminate all sources of ignition.

7.3. Specific end use(s)

No use other than that indicated in section 1.2 of this safety data sheet.

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Regulatory references:

IRL	Éire	2020 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations (2001-2015) and the Safety, Health and Welfare at Work (Carcinogens) Regulations (2001-2019)
MLT	Malta	PROTECTION OF THE HEALTH AND SAFETY OF WORKERS FROM THE RISKS RELATED TO CHEMICAL AGENTS AT WORK REGULATIONS (S.L.424.24). PROTECTION OF WORKERS FROM THE RISKS RELATED TO EXPOSURE TO CARCINOGENS OR MUTAGENS AT WORK REGULATIONS (S.L.424.22)
EU	OEL EU	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/UE; Directive 2006/15/CE; Directive 2004/37/CE; Directive 2000/39/CE; Directive 98/24/CE; Directive 91/322/CEE.
	TLV-ACGIH	ACGIH 2025

SILVER MASSIVE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
OELV	IRL	0,1				
TLV	MLT	0,1				
OEL	EU	0,1				
TLV-ACGIH		0,1				Metal, dust and fumes

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 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. The above values are not TLVs, but guide values, to be used for particles that do not have their own TLV and that are insoluble or poorly soluble in water and have low toxicity.

Recommended monitoring procedures:
This product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
Reference should be made to monitoring standards, such as the following:

- European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy)
- European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.
- European Standard EN 481 (Workplace atmospheres - Size fraction definitions for measurement of airborne particles).

8.2. Exposure controls

General working hygiene practices involves procedures (such as showering and changing clothes at the end of the work shift) to avoid any contamination of third parties and appropriate cleaning practices (such as regular cleaning, with appropriate cleaning devices), not eating and smoking at the workplace.
Personal protective equipment (PPE) must be CE marked, showing that it complies with applicable standards.
Only use PPE provided for the risk assessment for the specific use of the product. Choose the most suitable PPE after assessing the actual conditions of use of the product.
When choosing PPE, ask your technical equipment supplier for advice.
Make sure that the workplace is well aired through effective local aspiration, based on the specific use of the product.
Provide an emergency shower with face and eye wash station. Exposure levels must be kept as low as possible to avoid significant build-up in the organism. Manage PPE so as to guarantee maximum protection (e.g. reduction in replacement times).
General PPE procedures:
Provide adequate personnel training for use.
Carry out an inspection of PPE to verify the integrity. Do not use damaged or deteriorated PPE.
Carry out the PPE inspection procedures laid down in the user manual.

Do not use PPE after its expiry date or outside the indications given in the technical data sheet/user manual.
Do not reuse single-use PPE.
PPE that is no longer usable must be disposed according to local applicable regulations.
If PPE is used in an explosive or potentially explosive atmosphere, check the compatibility for the usage.

HAND PROTECTION
Protect hands with category III work gloves (see standard EN 374).
Main recommended materials: it is advised to use nitril, neoprene or PVC based on the outcome of the risk assessment. The mechanical resistance characteristics of the PVC are inferior to the other materials mentioned.
Thickness: not less than 0.38 mm, to be selected based on the outcome of the risk assessment for the specific activity.
Breakthrough time: 6 (minimum breakthrough time: 480 minutes)
The following should be considered when choosing work glove material (see standard EN 374): compatibility, degradation, permeability time. The gloves' wear time depends on the duration and type of use. Latex gloves may cause sensitivity reactions.
Remove gloves after use in accordance with hygiene regulations. In the event of spillage on the gloves, remove them and wash your hands immediately. Always wash your hands thoroughly after removing the gloves.
Thermal Hazards: Depending on the mode of operation and contact time, the use of gloves is recommended for thermal hazards (ref. standard UNI EN 407).
During manual welding of metals, cutting of metals and related processes: wear protective gloves for welders (see standard UNI EN 12477).

SKIN PROTECTION
Before handling the product, select suitable personal protective equipment for the body the specific job and related risk assessment. Wear 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).
When selecting the suitable eye protection PPE, consider:
- the resistance to surface damage;
- the resistance to fogging of the eyepieces.

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.
Wear a mask with a type P filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387).
The risk assessment should take into account: the concentration of the dust, the mode of exposure, the timing of exposure.
The risk assessment should take into account the use of PPE also in situations where the exposure may not be perceived by the worker.
The selection of the PPE should take into account the maximum concentration limit of the substance/mixture, and the maximum time of exposure at which the filters provide the protection of the worker, based on the technical sheet of the PPE. The risk assessment should replace the filter mask with open-circuit compressed air breathing apparatus (see standard EN 137) or external air-intake breathing apparatus (see standard EN 138) in cases where a filter mask does not provide sufficient protection for the worker on the basis of the methods of use, the concentration of the substance/mixture in the air or the timing of exposure.

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

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value
Appearance	Solid, massive form
Colour	Grey - white
Odour	Odourless
Melting point / freezing point	962 °C
Initial boiling point	Not applicable based on the physical state
Flammability	Not flammable based on CLP criteria
Lower explosive limit	Not applicable based on the physical state
Upper explosive limit	Not applicable based on the physical state
Flash point	Not applicable based on the physical state
Auto-ignition temperature	Not applicable – the substance does not auto-ignite
Decomposition temperature	Not applicable – the substance does not decompose
pH	Not applicable based on the physical state
Kinematic viscosity	Not applicable based on the physical state

Solubility	Not soluble in water
Partition coefficient: n-octanol/water	Not available
Vapour pressure	Not applicable based on the physical state
Density and/or relative density	10,49 g/cm3
Relative vapour density	Not applicable based on the physical state
Particle characteristics	Not applicable based on the physical state

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

SECTION 10. Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

Dangerous fumes can be created during processing.
Dangerous reactions may form with acetylene. Contact with acids releases flammable gases.
Reacts with strong oxidizing agents. Reacts with strong alkali. Reacts with peroxides and other radical forming substances.

10.4. Conditions to avoid

Avoid environmental dust build-up.

10.5. Incompatible materials

Acetylene, acids, strong oxidizing agents, strong alkali, peroxides and other radical forming substances.

10.6. Hazardous decomposition products

During decomposition/burning, the following can be produced: metallic fumes.

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
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

LD50 (Dermal):	> 2000 mg/kg Rat; OECD 402
LD50 (Oral):	> 2000 mg/kg Rat; OECD 423
LC50 (Inhalation mists/powders):	5,16 mg/l/4h Rat; powders; OECD 436

SKIN CORROSION / IRRITATION
Does not meet the classification criteria for this hazard class

Method: OECD Guideline 404
Reliability (Klimisch score): 2
Species: rabbit
Results: Not classified according to CLP criteria.

SERIOUS EYE DAMAGE / IRRITATION
Does not meet the classification criteria for this hazard class

Method: OECD Guideline 404
Reliability (Klimisch score): 2
Species: rabbit
Results: Not classified according to CLP criteria.

RESPIRATORY OR SKIN SENSITISATION
Does not meet the classification criteria for this hazard class

Respiratory sensitization
Neither human nor animal data show any specific concern for the respiratory sensitizing properties of silver. Based on this assessment, it is concluded that a classification for skin sensitization is not necessary.

Skin sensitization
Neither human nor animal data show any specific concern for the skin sensitizing properties of silver. Based on this assessment, it is concluded that a classification for skin sensitisation is not necessary.

GERM CELL MUTAGENICITY
Does not meet the classification criteria for this hazard class

Based on the negative results of genotoxicity tests (considered highly reliable), no genotoxicity is to be expected for silver, regardless of whether it was administered in ionic form or as a nanomaterial. Consequently, it is not classified under this hazard class.

CARCINOGENICITY
Does not meet the classification criteria for this hazard class

There are no reliable human data indicating any risk of carcinogenicity. Animal toxicity and human occupational studies have provided no evidence of carcinogenicity.

REPRODUCTIVE TOXICITY
Suspected of damaging fertility

Adverse effects on sexual function and fertility
The substance is classified as suspected of damaging fertility, category 2 (Harmonized classification derived from Delegated Regulation (EU) 2024/2564)

STOT - SINGLE EXPOSURE
Does not meet the classification criteria for this hazard class

Based on the available data, the substance has no specific target organ toxicity effects due to repeated exposure and is not classified under the relevant CLP hazard class.

STOT - REPEATED EXPOSURE
May cause damage to organs

The substance may cause organ damage (Harmonized classification derived from Delegated Regulation (EU) 2024/2564)

Target organs
Nervous system.

ASPIRATION HAZARD
Does not meet the classification criteria for this hazard class

There no available data for the hazard class CLP of aspiration hazard.

11.2. Information on other hazards

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

SECTION 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
Silver ions - Fish, Oncorhynchus mykiss LC50 96h 0.0062 mg/L
Silver ions - Daphnia Magna LC50 48h 0.0006 mg/L
Silver ions - Algae LC50 72h 0.002 mg/L
The substance in massive form has no toxicity to the aquatic environment.

12.2. Persistence and degradability
Not applicable - inorganic.substance.

12.3. Bioaccumulative potential
Information not available

12.4. Mobility in soil
Information not available

12.5. Results of PBT and vPvB assessment
The substance does not have persistence, bioaccumulation and toxicity (PBT) properties and is not very persistent and very bioaccumulative. (vPvB).

12.6. Endocrine disrupting properties
Based on the available data, the substance is not 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. (Directive 2008/98/EC and subsequent amendments and adjustments and related national transpositions).
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
The legal responsibility for disposal is the producer / holder of the waste.
To this mixture different EWC codes could be applied (European Waste Code) based on the specific circumstances that generated the waste, possible alterations and / or possible contamination.

The product as such, contained in the original packaging, or decanted in an appropriate container for the purpose of disposal, or no longer usable (for example following an accidental spill), must be classified with a EWC code that is compatible with the description of the use indicated in section 1.2.

The suitable final destination of the waste must be evaluated by the manufacturer on the basis of the chemical-physical characteristics of the waste, the compatibility with the authorized facility to which it will be given for recovery, and the definitive treatment or disposal according to the procedures established by current regulations .
Disposal through wastewater discharge is not permitted.

CONTAMINATED PACKAGING
Contaminated packaging must be sent, properly labeled, to recovery or disposal in compliance with national waste management regulations and must be classified with the following EWC code:

15 01 10*: packaging containing residues of or contaminated by dangerous substances

EMPTY PACKAGING
To assign a Chapter 15 Subchapter 01 (1501) code to the waste, it is necessary to determine whether the packaging/container is nominally empty. Citing what is contained in the European Commission Communication relating to the "Technical guidelines on waste classification" C/2018/1447 of 8th April 2018, and confirmed in the Sentence of the European Court of Justice n. 487/2019 and 489/2019, it is suggested to interpret the notion of "nominally empty" in the sense that the contents of the product have been effectively removed. Removal can be done via drainage or scraping. The fact that there is a minimal residue of the original content in packaging waste does not exclude the possibility of classifying this waste as 'nominally empty' and does not prohibit its assignment to subchapter 15 01 packaging waste.
A package can be considered completely emptied if in the event of a further emptying attempt, for example, due to its overturning, no more drops or solid residues are released.

Waste resulting from the use of the substance or mixture must be classified and managed by the following legal references to be considered in their updated version:

European legislation
Directive 2008/98/CE as amended
Commission Decision 2000/532/CE as amended
Regulation 2008/1272/CE as amended
Regulation 2008/440/CE as amended
Regulation (EU) 2019/1021 on persistent organic pollutants (POP) as amended
Regulation (EU) 2022/2400 amending Annexes IV and V to Regulation (EU) 2019/1021 on persistent organic pollutants

SECTION 14. Transport information

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

14.1. UN number or ID number
Not applicable

14.2. UN proper shipping name
Not applicable

14.3. Transport hazard class(es)
Not applicable

14.4. Packing group
Not applicable

14.5. Environmental hazards
Not applicable

14.6. Special precautions for user
Not applicable

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
Contained substance
Point 75

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 ≥ 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 was carried out.

SECTION 16. Other information

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

Repr. 2	Reproductive toxicity, category 2
STOT RE 2	Specific target organ toxicity - repeated exposure, category 2
H361f	Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.

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.
- 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)
25. Delegated Regulation (UE) 2023/1435 (XX Atp. CLP)
26. Delegated Regulation (UE) 2024/197 (XXI Atp. CLP)
27. Delegated Regulation (UE) 2024/2564 (XXII 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 the recipient of the Safety Data Sheet (SDS):

The recipient of this SDS shall make sure of reading and understanding the information included by all people who handle, store, use, or otherwise come into contact in any way with the substance or mixture to which this SDS is referred to. In particular, the recipient shall provide adequate training to the personnel for the use of hazardous substances and/or mixtures. The recipient shall verify the suitability and completeness of the provided information according to the specific use of the substance or mixture.

However, the substance or mixture referred to by this SDS shall not be used for uses other than those specified in Section 1. The Supplier don't assume responsibility for improper uses. Since the use of the product does not fall under the direct control of the Supplier, the user shall, under his own responsibility, fulfill national and EU regulations concerning health and safety.

The information included in this SDS are provided in good faith and are based on the current state of scientific and technical knowledge, at the revision date indicated, available to the Supplier indicated in Section 1 of this SDS. It shall not be meant that the SDS is a guarantee of any specific property of the substance or mixture. The information concern only to the substance or mixture specifically designated in Section 1 and it could not be valid for the substance or mixture used in combination with other materials or in any process not specified in the text.