

SAFETY DATA SHEET

(in accordance with Regulation (EU) 2020/878)

ZINC POWDER

Version 1 Date of compilation: 02/04/2024



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Print date: 03/04/2024

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING.

1.1 Product identifier.

Product Name: **ZINC POWDER** (Zn >97%)
Product Code: ALQ00128
Chemical Name: zinc powder — zinc dust (stabilised)
Index No: 030-001-01-9
CAS No: 7440-66-6
EC No: 231-175-3
Registration No: 01-2119467174-37-XXXX
Product type: Mono-constituent inorganic substance

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

Powder metallurgy.

Uses advised against:

All uses not specified in this section or in section 7.3. Due to lack of experience or data, the supplier cannot approve other unspecified use.

1.3 Details of the supplier of the safety data sheet.

Company: **ALQUERA CIENCIA SL**
Address: C/ Vilar de Donas 9
City: 28050 - Madrid
Province: Madrid (Spain)
Telephone: 0034 620 88 75 97
E-mail: info@alquera.com
Web: <https://www.alquera.com>

1.4 Emergency telephone number:

0034 620 88 75 97 (SDS) (Only available during office hours; Monday-Friday; 09:00-18:00).

SECTION 2: HAZARDS IDENTIFICATION.

2.1 Classification of the substance or mixture.

In accordance with Regulation (EC) No 1272/2008:

Aquatic Acute 1 : Very toxic to aquatic life. (M=1)

Aquatic Chronic 1 : Very toxic to aquatic life with long lasting effects. (M=1)

2.2 Label elements.

Labelling in accordance with Regulation (EC) No 1272/2008:

Pictograms:



Signal Word:

Warning

Hazard statements:

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements:

P273 Avoid release to the environment.

P391 Collect spillage.

P501 Dispose of contents/container in accordance with current national/local regulations on hazardous waste.

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2.3 Other hazards.

According to available data, the product does not contain PBT (Persistent, Bioaccumulative, Toxic) or vPvB (very Persistent, very Bioaccumulative) substances $\geq 0.1\%$.

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

The zinc dust referred to in this safety data sheet is not classified in the category of pyrophoric solids.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS.

3.1 Substances.

Mono-constituent.

Identifiers	Name	Concentration	(*)Classification - Regulation (EC) No 1272/2008	
			Classification	Specifics concentration limits and Acute toxicity estimate
Index No: 030-001-01-9 CAS No: 7440-66-6 EC No: 231-175-3	zinc powder — zinc dust (stabilised)	>97 - <100 %	Aquatic Acute 1, H400 (M=1) - Aquatic Chronic 1, H410 (M=1)	-

3.2 Mixtures.

Not applicable.

SECTION 4: FIRST AID MEASURES.

4.1 Description of first aid measures.

In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious.

Inhalation.

Take the victim into open air; keep them warm and calm. If breathing is irregular or stops, perform artificial respiration. Generation of zinc oxide fumes or vapors may cause metal fume fever, symptoms of which usually develop about 3-10 hours after exposure. Obtain medical attention, should symptoms (flu-like) app.

Eye contact.

Remove contact lenses, if present and if it is easy to do. Wash eyes with plenty of clean and cool water for at least 15 minutes while pulling eyelids up and seek medical assistance.

In case of presence of particles or dust: do not rub eyes.

Skin contact.

Remove contaminated clothing. Wash skin vigorously with water and soap or a suitable skin cleaner. NEVER use solvents or thinners.

Ingestion.

If accidentally ingested, seek immediate medical attention. Keep calm. NEVER induce vomiting.

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

In case of zinc oxide fume generation and inhalation of excessive amounts, symptoms of "Metal fume fever" may appear, immediate dryness and irritation of the throat, chest tightness and cough, followed by flu-like symptoms of fever, malaise, sweating, frontal headache, muscle cramps, lower back pain, occasionally blurred vision, nausea and vomiting. There are no known complications, aftereffects or chronic effects of this condition. In rare cases an acute incident may be followed by complications such as bronchitis or pneumonia.

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

In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious.

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SECTION 5: FIREFIGHTING MEASURES.

The product is NOT classified as flammable, in case of fire the following measures should be taken:

5.1 Extinguishing media.

Suitable extinguishing media:

Dry extinguisher powder (class D), dry sand.

Unsuitable extinguishing media:

Do not use a direct stream of water to extinguish. In the presence of electrical voltage, you cannot use water or foam as extinguishing media.

5.2 Special hazards arising from the substance or mixture.

Special risks.

Exposure to combustion or decomposition products can be harmful to your health.

- zinc compounds
- Hydrogen release in contact with strong acids or bases.

When dust is dispersed in air in sufficient concentrations and in the presence of an ignition source, it may form explosive mixtures with air.

5.3 Advice for firefighters.

Use water to cool tanks, cisterns, or containers close to the heat source or fire. Take wind direction into account. Prevent the products used to fight the fire from going into drains, sewers, or waterways. Product residues and extinguishing media may contaminate the aquatic environment.

Fire protection equipment.

According to the size of the fire, it may be necessary to use protective suits against the heat, individual breathing equipment, gloves, protective goggles or facemasks, and boots. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit...) in accordance with Directive 89/654/EC.

SECTION 6: ACCIDENTAL RELEASE MEASURES.

6.1 Personal precautions, protective equipment and emergency procedures.

For exposure control and individual protection measures, see section 8.

Remove all personnel not properly equipped to handle the emergency.

Avoid contact with eyes, skin, inhalation of dust.

Ventilate the affected area.

Avoid dust formation.

6.2 Environmental precautions.

Product dangerous for the environment, in case of large spills or if the product contaminates lakes, rivers, or sewers, inform the responsible authorities according to local legislation.

Prevent the contamination of drains, surface or subterranean waters, and the ground.

6.3 Methods and material for containment and cleaning up.

Contain and collect spillage. Clean the area immediately with a suitable decontaminant.

Deposit waste in closed and suitable containers for disposal, in compliance with local and national regulations (see section 13).

6.4 Reference to other sections.

For exposure control and individual protection measures, see section 8.

For later elimination of waste, follow the recommendations under section 13.

SECTION 7: HANDLING AND STORAGE.

7.1 Precautions for safe handling.

For personal protection, see section 8.

In the application area, smoking, eating, and drinking must be prohibited.

Follow legislation on occupational health and safety.

Keep the product in containers made of a material identical to the original.

Avoid dust formation.

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7.2 Conditions for safe storage, including any incompatibilities.

Store according to local legislation. Observe indications on the label. Store the containers between 5 and 25 °C, in a dry and well-ventilated place, far from sources of heat and direct solar light. Keep far away from ignition points. Keep away from oxidizing agents and from highly acidic or alkaline materials. Do not smoke. Prevent the entry of non-authorized persons. Once the containers are open, they must be carefully closed and placed vertically to prevent spills.

Classification and threshold amount of storage in accordance with Annex I to Directive 2012/18/EU (SEVESO III):

Code	Description	Qualifying quantity (tonnes) for the application of	
		Lower-tier requirements	Upper-tier requirements
E1	ENVIRONMENTAL HAZARDS - Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1	100	200

7.3 Specific end use(s).

See section 1.2. Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.

8.1 Control parameters.

The product does NOT contain substances with Professional Exposure Environmental Limit Values.
Nuisance dust: Inhalable dust 10 mg/m³ // Respirable dust 4 mg/m³

The environmental limit value for general dust (INSST, Spain) is:
- VLA-ED particles not otherwise specified. Inhalable fraction 10 mg/m³
- VLA-ED Particulates not otherwise specified. Respirable fraction 3 mg/m³

The workplace exposure limit for dust (USA-OSHA) is:
- 8-hour TWA inhalable dust: 10 mg/m³
- 8-hour TWA respirable dust: 5 mg/m³

It is recommended that the occupational exposure limit values established for inert dusts not otherwise classified be considered in the risk assessment process. If these limits are exceeded, it is recommended to use a P-type filter whose class (1, 2 or 3) should be chosen depending on the outcome of the risk assessment.

The product does NOT contain substances with Biological Limit Values.

Concentration levels DNEL/DMEL:

Name	DNEL/DMEL	Type	Value
zinc powder — zinc dust (stabilised) CAS No: 7440-66-6 EC No: 231-175-3	DNEL (Workers)	Inhalation, Chronic, Systemic effects	5 (mg/m ³)
	DNEL (Workers)	Oral, Chronic, Systemic effects	50 (mg/kg)
	DNEL (Workers)	Dermal, Chronic, Systemic effects	83 (mg Zn/kg bw/d)

DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.

DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.

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Concentration levels PNEC:

Name	Details	Value
zinc powder — zinc dust (stabilised) CAS No: 7440-66-6 EC No: 231-175-3	Marine water	6.1-7.2 (µg Zn/L)
	Freshwater	14.4-20.6 (µg Zn/L)
	STP	100 (µg/L)
	Sediment (freshwater)	146.9-236.6 (mg/kg sediment dw)
	Sediment (marine water)	113-162.2 (mg/kg sediment dw)
	Soil	83.1-106.8 (mg/kg soil dw)

PNEC: Predicted No Effect Concentration, concentration of the substance below which adverse effects are not expected in the environmental compartment.

8.2 Exposure controls.

Measures of a technical nature:

Provide adequate ventilation, which can be achieved by using good local exhaust-ventilation and a good general exhaust system.

Individual protection measures, such as personal protective equipment As a preventative measure it is recommended to use basic Personal Protective Equipment, in accordance with Regulation (EU) 2016/425. For more information on Personal Protective Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsections 7.1 and 7.2.

All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

Respiratory protection

The use of protective equipment will be necessary in case of mist formation or in case of exceeding occupational exposure limits if they exist (see section 8.1). Wear respiratory protection in case of spray application/dust generation. Wear respiratory protection in case of prolonged exposure.

Specific protection for the hands

Replace the gloves at any sign of deterioration. Penetration time >480 min (permanent contact protection). The breakthrough time of the selected gloves should be in accordance with the intended period of use. Various factors (e.g. temperature) mean that in practice the breakthrough time of chemical-resistant protective gloves is significantly shorter than the EN374 standard. An increase in temperature due to hot substances, body heat, etc. and a weakening of the effective thickness due to expansion can lead to a significant shortening of the breakthrough time. For the selection of a specific type of glove for a given application, with a certain duration, should take into account (but not be limited to) relevant factors in the workplace, such as: other chemicals to be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential allergies to the glove material itself, etc. Due to the wide variety of circumstances and possibilities, the instruction manual of the glove manufacturers should be taken into account. Gloves should be replaced immediately if signs of degradation are observed.

Additional emergency measures

Emergency shower: ANSI Z358-1, ISO 3864-1:2011, ISO 3864-4:2011

Eyewash stations: DIN 12 899, ISO 3864-1:2011, ISO 3864-4:2011

Recommendations to prevent toxicological risks:

Do not eat, drink or smoke during handling. After handling, wash hands with soap and water.

Environmental exposure controls

Emissions from production processes, including those from ventilation equipment, should be controlled to comply with environmental protection legislation.

Product residues should not be discharged uncontrolled into wastewater or watercourses.

Where zinc metal particles are collected and conveyed through a ventilation system, a non-sparking, grounded ventilation system separate from other ventilation systems should be used. Dust collection systems and fans should be placed outside the building, whenever possible, and should be provided with dust collectors with venting systems or breaker panels.

Prevent entry into the sewer system.

**Advice on personal protection is valid for high levels of exposure.
Choose personal protection adapted to the risks of exposure.**

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Concentration:	100 %		
Uses:	Powder metallurgy.		
Breathing protection:			
PPE:	Filter mask for protection against gases and particles.		
Characteristics:	«CE» marking, category III. The mask must have a wide field of vision and an anatomically designed form in order to be sealed and watertight.		
CEN standards:	EN 136, EN 140, EN 405, EN 149		
Maintenance:	Should not be stored in places exposed to high temperatures and damp environments before use. Special attention should be paid to the state of the inhalation and exhalation valves in the face adaptor. Read carefully the manufacturer's instructions regarding the equipment's use and maintenance. Attach the necessary filters to the equipment according to the specific nature of the risk (Particles and aerosols: P1-P2-P3, Gases and vapours: A-B-E-K-AX), changing them as advised by the manufacturer.		
Observations:	Filter Type needed: P		
Hand protection:			
PPE:	Work gloves.		
Characteristics:	«CE» marking, category III, type C.		
CEN standards:	EN 374-1, En 374-2, EN 374-3, EN 420		
Maintenance:	Keep in a dry place, away from any sources of heat, and avoid exposure to sunlight as much as possible. Do not make any changes to the gloves that may alter their resistance, or apply paints, solvents or adhesives.		
Observations:	Gloves should be of the appropriate size and fit the user's hand well, not being too loose or too tight. Always use with clean, dry hands.		
Material:	Nitrile rubber	Breakthrough time (min.): > 480	Material thickness (mm): 0,11
Skin protection:			
PPE:	Protective clothing/antistatic.		
Characteristics:	«CE» marking, category III. Protective clothing should not be too tight or loose in order not to obstruct the user's movements.		
CEN standards:	EN 340, EN 1149-1, EN 1149-2, EN 1149-3, EN 1149-5		
Maintenance:	In order to guarantee uniform protection, follow the washing and maintenance instructions provided by the manufacturer.		
Observations:	The protective clothing should offer a level of comfort in line with the level of protection provided in terms of the hazard against which it protects, bearing in mind environmental conditions, the user's level of activity and the expected time of use.		
PPE:	Work footwear, antistatic.		
Characteristics:	«CE» marking, category III.		
CEN standards:	EN ISO 13287, EN 20347, EN ISO 20344, EN ISO 20346		
Maintenance:	This product adapts to the first user's foot shape. That is why, as well as for hygienic reasons, it should not be used by other people.		
Observations:	Work footwear for professional use includes protection elements aimed at protecting users against any injury resulting from an accident		
Eye protection:			
PPE:	Protective goggles against particle impacts.		
Characteristics:	«CE» marking, category II. Eye protector against dust and smoke.		
CEN standards:	EN 165, EN 166, EN 167, EN 168		
Maintenance:	Visibility through lenses should be ideal. Therefore, these parts should be cleaned daily. Protectors should be disinfected periodically following the manufacturer's instructions.		
Observations:	Some signs of wear and tear include: yellow colouring of the lenses, superficial scratching of the lenses, scraping etc.		

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.

9.1 Information on basic physical and chemical properties.

Appearance:

Physical state (20°C): solid- dust.

Colour: silver-grey.

Odour: odourless.

Odour threshold: Not applicable/Not available due to the nature/properties of the product.

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Volatility:

Boiling point or initial boiling point and boiling range: N.A. for solids with a melting temperature >300°C (column 2 of Annex VII of the Reach Regulation). 906-908 °C.

Vapour pressure: N.A. for solids with a melting temperature >300°C (column 2 of Annex VII of the Reach Regulation).

Relative vapour density (air=1): Not applicable, solid product.

Evaporation rate: Not applicable, solid product.

Flammability:

Flammability: this material is combustible, but not readily flammable.

Lower explosion limit: Not applicable, solid product.

Upper explosion limit: Not applicable, solid product.

Flash point: N.A. for inorganic substances (column 2 of Annex VII of the REACH Regulation).

Auto-ignition temperature: > 380 °C (minimum ignition energy > 1000 mJ).

Product description:

Melting/Freezing point: 409-421 °C.

Decomposition temperature: N.A.

pH: Not applicable.

Solubility: insoluble in water.

Hydrosolubility: 0.1 mg/l (insoluble in water < 1 mg/l).

Liposolubility: N.A.

Partition coefficient n-octanol/water (log value): N.A. for metals. Not applicable to inorganic substances (column 2 of Annex VII of the REACH Regulation).

Bulk density: 1.60 – 3.20 g/cm³.

Relative density (agua=1): 6.9 – 7.1.

Kinematic viscosity: Not applicable, solid product. It has been determined in molten zinc liquid state. The results show that the viscosity of liquid metallic zinc increases slowly with decreasing temperature (between 417-521°C) until the melting temperature is reached.

Dynamic viscosity: Not applicable, solid product.

Particle characteristics:

Particle size: 45-212 µm.

9.2 Other information

Explosive properties: zinc is not flammable, explosive or self-flammable.

Oxidizing properties: non-oxidizing. Based on the chemical structure, the product is incapable of exothermically reacting with combustible materials. According to REACH, Annex VII, 7.13, column 2, the study does not need to be carried out.

Drop point: N.A.

Scintillation: N.A.

% Solids: 97-100%

N.A.= Not Available/Non- Applicable due to the nature of the product, not providing information property of its hazards

The data corresponding to the product specifications can be found in the product technical data sheet. For further data on physical and chemical properties related to safety and environment, see sections 7 and 12.

SECTION 10: STABILITY AND REACTIVITY.

10.1 Reactivity.

The product does not present hazards by their reactivity under the recommended handling and storage conditions (see section 7). No dangerous polymerization occurs.

The possibility of the formation of dust clouds creating explosive atmospheres should be considered.

Zinc dust reacts with strong acids and bases generating hydrogen, which may accumulate in poorly ventilated areas.

In the presence of fluorine, chlorine and bromine it may become incandescent or ignite.

If heated it may react explosively with halogenated hydrocarbons.

Mixtures with potassium chlorate or molten ammonium nitrate may explode on impact. Violent reaction with strong oxidizing agents.

10.2 Chemical stability.

Stable under the recommended handling and storage conditions (see section 7).

In contact with acids and bases it generates highly flammable hydrogen gas.

In contact with acid solutions of arsenic and antimony compounds it can give off very toxic gases.

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10.3 Possibility of hazardous reactions.

The product does not present possibility of hazardous reactions under the recommended handling and storage conditions (see section 7).

Dust is potentially explosive when mixed with air.

Contact with acids may generate flammable gases.

Strong reactions with: Alkaline hydroxide (caustic alkali), Ammonium compounds, Azidides (azides), Bases, Cadmium, Chlorates, Halogenated hydrocarbons, Hydrazine, Nitrate, Nitrated derivative, Oxidizers, Peroxides, Nitric acid, Acids, Sulfur.

10.4 Conditions to avoid.

Avoid any improper handling, dust generation, incompatible materials.

10.5 Incompatible materials.

Keep away from oxidising agents and from highly alkaline/basic or acidic materials to prevent exothermic reactions.

Halides, halogenated materials.

Strong reactions with: Alkaline hydroxide (caustic alkali), Ammonium compounds, Azidides (azides), Bases, Cadmium, Chlorates, Halogenated hydrocarbons, Hydrazine, Nitrate, Nitrated derivative, Oxidizers, Peroxides, Nitric acid, Acids, Sulfur.

Note: this list is not exhaustive, please verify any incompatibility with the process in which this material is used.

10.6 Hazardous decomposition products.

No decomposition if used for the intended uses.

Zinc compounds. Hydrogen release in contact with strong acids or bases.

SECTION 11: TOXICOLOGICAL INFORMATION.

There are no known incidents of damage to health due to exposure to the product. It is recommended to operate in compliance with good industrial hygiene standards.

11.1 Information on hazard classes as defined in Regulation (EC) N° 1272/2008.

Main routes of exposure: inhalation, ingestion and skin contact

Toxicological information.

a) acute toxicity;

Not conclusive data for classification.

The study is not necessary because the substance does not meet the criteria for classification as acute toxicity or STOT SE by the oral route and no systemic effects have been observed in in vivo studies with dermal exposure (e.g. skin irritation, skin sensitization). Inhalation toxicity: As a coarse dust > 20 µm, toxicity by this route is of little relevance.

Name	Acute toxicity			
	Type	Test	Kind	Value
zinc powder — zinc dust (stabilised) CAS No: 7440-66-6 EC No: 231-175-3	Oral	LD50	Rat	> 2000 mg/kg bw [1]
	Dermal		Not available	
	Inhalation	LC50	Rat	> 5.41 g Zn/m ³ (4 h) [1]

b) skin corrosion/irritation; Not conclusive data for classification.

c) serious eye damage/irritation; Not conclusive data for classification.

d) respiratory or skin sensitisation; Not conclusive data for classification.

e) germ cell mutagenicity; Not conclusive data for classification.

f) carcinogenicity; Not conclusive data for classification.

g) reproductive toxicity; Not conclusive data for classification.

h) STOT-single exposure; Not conclusive data for classification.

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i) STOT-repeated exposure; Not conclusive data for classification.

j) aspiration hazard; Not conclusive data for classification.

11.2 Information on other hazards.

Endocrine disrupting properties

This product does not contain components with endocrine-disrupting properties with effects on human health $\geq 0,1\%$.

Other information

There is no information available on other adverse health effects.

SECTION 12: ECOLOGICAL INFORMATION.

12.1 Toxicity.

The product is classified as dangerous for the environment with short- and long-term effects (Aquatic Acute 1, H400; Aquatic Chronic 1, H410).

Name	Ecotoxicity				
	Type	Test	Kind	Value	
zinc powder — zinc dust (stabilised) CAS No: 7440-66-6 EC No: 231-175-3	Fish	LC50	Oncorhynchus Mykiss	0.169 mg Zn/l [1]	
		LC50	Pimephales promelas	0.780 mg Zn/l [2]	
		LC50	Pimephales promelas	0.330 mg Zn/l (95 h) [3]	
		NOEC	not single fish species	50-130 µg/L (5 months) [4]	
		LC50	Thymallus arcticus	315 µg/L [5]	
	Aquatic invertebrates	LC50	Ceriodaphnia dubia	0.413 mg Zn/l (48 h) [1]	
		LC50	Ceriodaphnia dubia	0.147 mg Zn/l (48 h) [2]	
		NOEC	not single species	42 - 382 µg/L (70 d) [3]	
		EC50	Daphnia magna	860 µg/L [4]	
		NOEC	Daphnia magna	35 µg/L (3 weeks, chronic) [4]	
	Aquatic plants	IC50	Pseudokirchneriella subcapitata = Selenastrum capricornutum. single value)	0.136 mg Zn/l (72 h) [1]	
		NOEC	Pseudokirchneriella subcapitata	0.024 mg Zn/l [2]	
		NOEC	=Selenastrum capricornutum. geomean of 51 data microorganisms	100 µg/L (4 h) [3]	
		[1] OECD201. neutral/high pH: 7-8.5. Acute toxicity, freshwater algae.			
		[2] chronic toxicity to freshwater algae: lowest NOEC			
[3] ECHA, CSR					

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12.2 Persistence and degradability.

Zinc is an element and as such the criterion "persistence" is not relevant, as it is considered for organic substances, for the metal and for its inorganic compounds.

Biodegradation

Methods to determine disintegration are not applicable for inorganic materials.

12.3 Bioaccumulative potential.

Zinc is a naturally occurring essential element necessary for the optimal growth and development of living organisms, including humans. All living organisms have homeostatic mechanisms that actively regulate zinc intake and its absorption/excretion from the body. Due to this regulation zinc and its compounds do not bioaccumulate.

12.4 Mobility in soil.

No information is available about the mobility in soil.
The product must not be allowed to go into sewers or waterways.
Prevent penetration into the ground.

12.5 Results of PBT and vPvB assessment.

According to available data, the product does not contain PBT (Persistent, Bioaccumulative, Toxic) or vPvB (very Persistent, very Bioaccumulative) substances $\geq 0.1\%$.

12.6 Endocrine disrupting properties.

This product doesn't contain components with environmental endocrine disrupting properties $\geq 0.1\%$.

12.7 Other adverse effects.

The product is not affected by the Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer.
No information is available about other adverse effects for the environment.

SECTION 13: DISPOSAL CONSIDERATIONS.

13.1 Waste treatment methods.

Do not dump into sewers or waterways. Waste and empty containers must be handled and eliminated according to current, local/national legislation.

Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations. In case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommend disposal down the drain. See section 6.2.

Regulations related to waste management:

In accordance with Annex II of Regulation (EC) No 1907/2006 (REACH) the community or state provisions related to waste management are stated Community legislation:

Follow the provisions of Directive 2008/98/EC, Decision 2014/955/UE, Directive (UE) 2018/851, Directive (UE) 2019/904 regarding waste management. EU-legislation: Regulation (EU) No. 1357/2014 and modifications.

It is not possible to assign a specific code, as it depends on the user's intended use.

Waste type (Regulation (EU) No. 1357/2014):

HP 14 Ecotoxic

SECTION 14: TRANSPORT INFORMATION.

Transport following ADR rules for road transport, RID rules for railway, ADN for inner waterways, IMDG for sea, and ICAO/IATA for air transport.

Land: Transport by road: ADR, Transport by rail: RID.

Transport documentation: Consignment note and written instructions

Sea: Transport by ship: IMDG.

Transport documentation: Bill of lading

Air: Transport by plane: ICAO/IATA.

Transport document: Airway bill.

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14.1 UN number or ID number.

UN No: UN3077

14.2 UN proper shipping name.

Description:

ADR/RID:

UN 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS ZINC POWDER (STABILISED)), 9, III, (-)

IMDG:

UN 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS ZINC POWDER (STABILISED)), 9, III, MARINE POLLUTANT

ICAO/IATA:

UN 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS ZINC POWDER (STABILISED)), 9, III

14.3 Transport hazard class(es).

Class(es): 9

14.4 Packing group.

Packing group: III

14.5 Environmental hazards.

Marine pollutant: Yes



Dangerous for the environment

Transport by ship, FEm – Emergency sheets (F – Fire, S - Spills): F-A,S-F

14.6 Special precautions for user.

Labels: 9



Hazard number: 90

Provisions concerning carriage in bulk ADR:

VC1 Carriage in bulk in sheeted vehicles, sheeted containers or sheeted bulk containers is permitted.

VC2 Carriage in bulk in closed vehicles, closed containers or closed bulk containers is permitted.

Proceed in accordance with point 6.

ADR LQ: 5 kg

IMDG LQ: 5 kg

ICAO LQ: 30 kg B

14.7 Maritime transport in bulk according to IMO instruments.

The product is not transported in bulk.

SECTION 15: REGULATORY INFORMATION.

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

The product is not affected by Regulation (EU) No 528/2012 concerning the making available on the market and use of biocidal products.

The product is not affected by the procedure established Regulation (EU) No 649/2012, concerning the export and import of dangerous chemicals.

Kind of pollutant to water (Germany): WGK 2: Hazardous to water. (Autoclassified according to the AwSV Regulations)

Substances on the Candidate List (Art. 59 REACH): According to available data, the product does not contain SVHC substances in percentages $\geq 0.1\%$.

Substances subject to authorization (Annex XIV REACH): not listed.

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(in accordance with Regulation (EU) 2020/878)

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Restrictions on the manufacturing, placing on the market and use of certain dangerous substances, mixtures and articles:

Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
3. Liquid substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: (a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F; (b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10; (c) hazard class 4.1; (d) hazard class 5.1.	1. Shall not be used in: - ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays, - tricks and jokes, - games for one or more participants, or any article intended to be used as such, even with ornamental aspects, 2. Articles not complying with paragraph 1 shall not be placed on the market. 3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they: - can be used as fuel in decorative oil lamps for supply to the general public, and, - present an aspiration hazard and are labelled with H304, 4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN). 5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met: (a) lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: 'Keep lamps filled with this liquid out of the reach of children'; and, by 1 December 2010, 'Just a sip of lamp oil - or even sucking the wick of lamps - may lead to life-threatening lung damage'; (b) grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter may lead to life threatening lung damage'; (c) lamp oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.

Special provisions for the protection of humans or the environment:

It is recommended to use the information compiled in this safety data sheet as input data in a risk assessment of the local circumstances to establish the necessary risk prevention measures for the handling, use, storage and disposal of the product.

15.2 Chemical safety assessment.

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: OTHER INFORMATION.

Legislation related to safety data sheets:

The Safety Data Sheet shall be supplied in an official language of the country where the product is placed on the market. This safety data sheet has been designed in accordance with ANNEX II-Guide to the compilation of safety data sheets of Regulation (EC) No 1907/2006 (COMMISSION REGULATION (EU) 2020/878).

Classification codes:

Aquatic Acute 1 : Acute toxicity to the aquatic environment, Category 1

Aquatic Chronic 1 : Chronic effect to the aquatic environment, Category 1

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards	On basis of test data
Health hazards	Calculation method
Environmental hazards	Calculation method

It is advisable to carry out basic training with regard to health and safety at work in order to handle this product correctly.

Abbreviations and acronyms used:

ADR: Agreement concerning the International Carriage of Dangerous Goods by Road.

AwSV: Facility Regulations for handling substances that are hazardous for the water.

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CEN: European Committee for Standardization.
CLP: Regulation (EC) No. 1272/2008 on classification, labeling and packaging.
DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.
DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.
EC50: Half maximal effective concentration.
EN: European Standard.
SDS: Supplier Safety Data Sheet.
PPE: Personal protection equipment.
IATA: International Air Transport Association.
ICAO: International Civil Aviation Organization.
IMDG: International Maritime Code for Dangerous Goods.
LC50: Lethal concentration, 50%.
LD50: Lethal dose, 50%.
NOEC: No observed effect concentration.
OECD: Organization for Economic Cooperation and Development.
PNEC: Predicted No Effect Concentration, concentration of the substance below which adverse effects are not expected in the environmental compartment.
RID: Regulations Concerning the International Transport of Dangerous Goods by Rail.
VLA/OEL: Occupational exposure limit.
VLB/ELV: Biological limit value.
WGK: Water hazard classes.

Key literature references and sources for data:

<http://eur-lex.europa.eu/homepage.html>
<http://echa.europa.eu/>
Regulation (EU) 2020/878.
Regulation (EC) No 1907/2006.
Regulation (EC) No 1272/2008.
Supplier Safety Data Sheet.

The information given in this Safety Data Sheet has been drafted in accordance with COMMISSION REGULATION (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemical substances and mixtures (REACH).

The information in this Safety Data Sheet on the Preparation is based on current knowledge and on current EC and national laws, as far as the working conditions of the users is beyond our knowledge and control. The product must not be used for purposes other than those that are specified without first having written instructions on how to handle. It is always the responsibility of the user to take the appropriate measures in order to comply with the requirements established by current legislation. The information contained in this Safety Sheet only states a description of the safety requirements for the preparation, and it must not be considered as a guarantee of its properties.