

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)
according to Regulation (EU) No. 2020/878



Trade name : 113710 - Zinc nitrate hexahydrate

Revision date : 08/09/2023

Version (Revision) :

3.0.0 (2.0.0)

Print date : 08/09/2023

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

1.1 Product identifier

Zinc nitrate hexahydrate (113710)

Zinc nitrate hexahydrate ; CAS No. : 10196-18-6 ; EC No. : 231-943-8 ; REACH No. : 01-2119488498-16-XXXX

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

Relevant identified uses

For manufacturing, processing, laboratory or repacking use only.

Uses advised against

Uses other than those recommended.

1.3 Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor)

DC Fine Chemicals Ltd

Street : 88 Hill Top

Postal code/City : NW11 6DY London United Kingdom

Telephone : +44 (0)20 7586 6800

Telefax : +44 (0)20 7504 1701

Information contact : info@dcfinechemicals.com

1.4 Emergency telephone number

(Only available during office hours; Monday-Friday; 08:00-18:00)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]

Ox. Sol. 2 ; H272 - Oxidising solids : Category 2 ; May intensify fire; oxidiser.

Acute Tox. 4 ; H302 - Acute toxicity (oral) : Category 4 ; Harmful if swallowed.

Skin Irrit. 2 ; H315 - Skin corrosion/irritation : Category 2 ; Causes skin irritation.

Eye Dam. 1 ; H318 - Serious eye damage/eye irritation : Category 1 ; Causes serious eye damage.

STOT SE 3 ; H335 - STOT-single exposure : Category 3 ; May cause respiratory irritation.

Aquatic Acute 1 ; H400 - Hazardous to the aquatic environment : Acute 1 ; Very toxic to aquatic life.

Aquatic Chronic 2 ; H411 - Hazardous to the aquatic environment : Chronic 2 ; Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms



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Flame over circle (GHS03) · Corrosion (GHS05) · Environment (GHS09) · Exclamation mark (GHS07)

Signal word

DANGER

Hazard statements

H272	May intensify fire; oxidiser.
H318	Causes serious eye damage.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220	Keep away from clothing and other combustible materials.
P310	Immediately call a POISON CENTER/doctor.
P321	Specific treatment (see on this label).
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

2.3 Other hazards

This substance/mixture contains no components considered to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name : Zinc nitrate hexahydrate

EC No. : 231-943-8

REACH No. : 01-2119488498-16-XXXX

CAS No. : 10196-18-6

Purity : 100 % [mass]

SECTION 4: First aid measures

4.1 Description of first aid measures

Remove contaminated, saturated clothing immediately. After contact with skin, wash immediately with plenty of water and soap. In case of skin reactions, consult a physician. After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately. If accidentally ingested, seek immediate medical attention, NEVER induce vomiting. Remove victim out of the danger area. When in doubt or if symptoms are observed, get medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Contact with eyes or skin can cause burns; ingestion or inhalation can cause internal damage, if this occurs immediate medical assistance is required. Do NOT induce vomiting. Never give anything by mouth to an unconscious person or a person with cramps.

4.3 Indication of any immediate medical attention and special treatment needed

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

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Extinguisher powder or CO₂. In case of more serious fires, also alcohol-resistant foam and water spray.

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: Fire can cause thick, black smoke. As a result of thermal decomposition, dangerous products can form: carbon monoxide, carbon dioxide. Exposure to combustion or decomposition products can be harmful to your health.

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. Wear a self-contained breathing apparatus and chemical protective clothing. Do not inhale explosion and combustion gases.

Special protective equipment for firefighters

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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Clear spills immediately.

For non-emergency personnel

Wear a self-contained breathing apparatus and chemical protective clothing. Remove persons to safety.

For emergency responders

Eliminate possible ignition points and ventilate the area. No smoking. Avoid breathing fumes. For exposure control and individual protection measures, see section 8.

6.2 Environmental precautions

Dangerous product for the environment. Do not allow to enter into surface water or drains. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities. Retain contaminated washing water and dispose it.

6.3 Methods and material for containment and cleaning up

For containment

Collect in closed and suitable containers for disposal.

For cleaning up

The contaminated area should be cleaned up immediately with: Water Soak up inert absorbent and dispose as waste requiring special attention. Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Avoid dust formation.

6.4 Reference to other sections

Reference to other sections Disposal: see section 13 Personal protection equipment: see section 8

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures



When using do not eat, drink, smoke, sniff.
personal protection equipment (refer to section 8).

Measures to prevent aerosol and dust generation

Use only in well-ventilated areas. Do not breathe gas/fumes/vapour/spray. Do not breathe dust.

Environmental precautions

Use appropriate container to avoid environmental contamination.

Specific requirements or handling rules

Handle with care - avoid bumps, friction and impact. Only use the material in places where open light, fire and other flammable sources can be kept away.

Advices on general occupational hygiene

Take care for general good hygiene and housekeeping.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Storage temperature :

Keep in a cool, well-ventilated place. Protect against UV-radiation/sunlight Humidity.

Requirements for storage rooms and vessels

Only use containers specifically approved for the substance/product.

Hints on joint storage

Store at least 3 metres apart from: Chemicals/products that react together readily Keep away from sources of ignition
- No smoking.

Storage class (TRGS 510) : 5.1B

7.3 Specific end use(s)

None

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

DNEL-/PNEC-values

DNEL/DMEL

Zinc nitrate hexahydrate ; CAS No. : 10196-18-6

Limit value type : DNEL Consumer (systemic)

Exposure route : Oral

Exposure frequency : Long-term

Limit value : 0.83 mg/kg bw/day

Limit value type : DNEL Consumer (systemic)

Exposure route : Inhalation

Exposure frequency : Long-term

Limit value : 1.3 mg/m³

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Limit value type : DNEL Consumer (systemic)
Exposure route : Dermal
Exposure frequency : Long-term
Limit value : 8.3 mg/kg bw/day
Limit value type : DNEL worker (systemic)
Exposure route : Dermal
Exposure frequency : Long-term
Limit value : 8.3 mg/kg bw/day
Limit value type : DNEL worker (systemic)
Exposure route : Inhalation
Exposure frequency : Long-term
Limit value : 1 mg/m³

PNEC

Zinc nitrate hexahydrate ; CAS No. : 10196-18-6

Limit value type : PNEC (Aquatic, freshwater)
Exposure route : Water (Including sewage plant)
Exposure time : Short-term
Limit value : 20.6 µg/l
Limit value type : PNEC (Aquatic, marine water)
Exposure route : Water (Including sewage plant)
Exposure time : Short-term
Limit value : 6.1 µg/l
Limit value type : PNEC (Sediment, freshwater)
Exposure route : Water (Including sewage plant)
Exposure time : Short-term
Limit value : 117.8 mg/kg dry weight
Limit value type : PNEC (Sediment, marine water)
Exposure route : Water (Including sewage plant)
Exposure time : Short-term
Limit value : 56.5 mg/kg wet weight
Limit value type : PNEC (Soil)
Exposure route : Soil
Exposure time : Short-term
Limit value : 35.6 mg/kg dry weight
Limit value type : STP
Exposure route : Water (Including sewage plant)
Exposure time : Short-term
Limit value : 52 µg/l

8.2 Exposure controls

Only wear fitting, comfortable and clean protective clothing.

Personal protection equipment

Eye/face protection



Eye glasses with side protection Face protection shield EN 166

Skin protection

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Hand protection



Tested protective gloves must be worn EN ISO 374. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

Body protection



Full protection suit Wash contaminated clothing prior to re-use.

Respiratory protection

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.



The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used. Particle filter device (EN 143).

Thermal hazards

No information available.

Environmental exposure controls

No information available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : solid

Safety characteristics

Melting point/freezing point :	(1013 hPa)		38.84 °C
Initial boiling point and boiling range :	(1013 hPa)	approx.	135 °C
Decomposition temperature :	(1013 hPa)		No data available
Flash point :			No data available
Auto-ignition temperature :			No data available
Lower explosion limit :			No data available
Upper explosion limit :			No data available
Vapour pressure :	(50 °C)		No data available
Density :	(20 °C)		No data available
Solvent separation test :	(20 °C)		not applicable
Water solubility :	(20 °C)	>=	998 g/l
Fat solubility :	(20 °C)		No data available.
pH :	(20 °C / 50 g/l)		4 - 5
log P O/W :			No data available
Flow time :	(20 °C)		No data available

DIN-
cup 4

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Viscosity :	(20 °C)	No data available	mm
Relative vapour density :	(20 °C)	No data available	
Evaporation rate :		No data available	
Flammable solids :	No data available.		
Flammable gases :	No data available.		
Explosive properties :	No data available.		

9.2 Other information

None

SECTION 10: Stability and reactivity

10.1 Reactivity

Explosive if mixed with organic substances.

10.2 Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature. Safe handling: see section 7

10.3 Possibility of hazardous reactions

May intensify fire; oxidiser. Violent reaction with: Reducing agent, strong.

10.4 Conditions to avoid

Avoid the contact with incompatible materials. Take precautionary measures against static discharges. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

10.5 Incompatible materials

Avoid the following materials: Reducing materials, Flammable materials, Explosives materials, Toxic materials, Corrosive materials.

10.6 Hazardous decomposition products

Depending on conditions of use, can be generated the following products: Oxygen, Corrosive vapors or gases, Oxidizing gases or vapors.

SECTION 11: Toxicological information

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

Acute toxicity

Acute oral toxicity

Parameter :	LD50 (Zinc nitrate hexahydrate ; CAS No. : 10196-18-6)
Exposure route :	Oral
Species :	Rat
Effective dose :	1.19 g/kg

Corrosion

Skin corrosion/irritation

No information available.

Serious eye damage/eye irritation

No information available.

Respiratory or skin sensitisation

No information available.

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CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Carcinogenicity

No information available.

Germ cell mutagenicity

No information available.

Reproductive toxicity

No information available.

STOT-single exposure

No information available.

STOT-repeated exposure

No information available.

Aspiration hazard

No information available.

11.2 Information on other hazards

No information available.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity

Acute (short-term) fish toxicity

Parameter : LC50 (Zinc nitrate hexahydrate ; CAS No. : 10196-18-6)
Species : Fish
Evaluation parameter : Acute (short-term) fish toxicity
Effective dose : 0.1 - 1 mg/l
Exposure time : 96 hour(s)

Chronic (long-term) fish toxicity

Parameter : NOEC (Zinc nitrate hexahydrate ; CAS No. : 10196-18-6)
Species : Fish
Evaluation parameter : Chronic (long-term) fish toxicity
Effective dose : 0.1 - 1 mg/l
Exposure time : 21 day(s)

Acute (short-term) toxicity to crustacea

Parameter : EC50 (Zinc nitrate hexahydrate ; CAS No. : 10196-18-6)
Species : Crustacea
Evaluation parameter : Acute (short-term) toxicity to crustacea
Effective dose : 5.2 mg/l
Exposure time : 48 hour(s)

Chronic (long-term) toxicity to aquatic invertebrate

Parameter : NOEC (Zinc nitrate hexahydrate ; CAS No. : 10196-18-6)
Species : Crustacea
Evaluation parameter : Chronic (long-term) toxicity to aquatic invertebrate
Effective dose : 0.1 - 1 mg/l
Exposure time : 21 day(s)

Acute (short-term) toxicity to algae and cyanobacteria

Parameter : EC50 (Zinc nitrate hexahydrate ; CAS No. : 10196-18-6)

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Species :	Pseudokirchneriella subcapitata
Evaluation parameter :	Acute (short-term) toxicity to algae and cyanobacteria
Effective dose :	0.075 mg/l
Exposure time :	72 hour(s)
Parameter :	IC50 (Zinc nitrate hexahydrate ; CAS No. : 10196-18-6)
Species :	Pseudokirchneriella subcapitata
Evaluation parameter :	Acute (short-term) toxicity to algae and cyanobacteria
Effective dose :	0.136 mg/l
Exposure time :	72 hour(s)

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. Do not dump into sewers or waterways. Waste and empty containers must be handled and eliminated according to current, local/national legislation. Follow the provisions of Directive 2008/98/EC regarding waste management. Follow the provisions of Directive 2008/98/EC regarding waste management.

Product/Packaging disposal

Waste treatment options

Recycle according to official regulations. Evidence for disposal must be provided.

Appropriate disposal / Product

Dispose of waste according to applicable legislation.

Appropriate disposal / Package

Non-contaminated packages must be recycled or disposed of. Contaminated packages must be completely emptied and can be re-used following proper cleaning. Packing which cannot be properly cleaned must be disposed of. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

14.1 UN number

UN 1514

14.2 UN proper shipping name

Land transport (ADR/RID)

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ZINC NITRATE

Sea transport (IMDG)

ZINC NITRATE

Air transport (ICAO-TI / IATA-DGR)

ZINC NITRATE

14.3 Transport hazard class(es)

Land transport (ADR/RID)

Class(es) : 5.1

Classification code : O2

Hazard identification number (Kemler No.) : 50

Tunnel restriction code : E

Special provisions : LQ 1 kg · E 2

Hazard label(s) : 5.1 / N

Sea transport (IMDG)

Class(es) : 5.1

EmS-No. : F-H / S-Q

Special provisions : LQ 1 kg · E 2 · IMDG-Code segregation group 7 - Heavy metal and their salts (including their organometallic compounds)

Hazard label(s) : 5.1 / N

Air transport (ICAO-TI / IATA-DGR)

Class(es) : 5.1

Special provisions : E 2

Hazard label(s) : 5.1

14.4 Packing group

II

14.5 Environmental hazards

Land transport (ADR/RID) : Yes

Sea transport (IMDG) : Yes (P)

Air transport (ICAO-TI / IATA-DGR) : Yes

14.6 Special precautions for user

Hazard label(s) :



14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

No information available.

SECTION 15: Regulatory information

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

Safety Data Sheet According to Regulation (EC) No. 1907/2006 (REACH) Classification according to Regulation (EC) No 1272/2008 [CLP] according to Regulation (EU) No. 2020/878

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive]

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Hazard categories	P8 - OXIDISING LIQUIDS AND SOLIDS
Lower-tier requirements (t)	50
Upper-tier requirements (t)	200
Hazard categories	E1 - HAZARDOUS TO THE AQUATIC ENVIRONMENT 1
Lower-tier requirements (t)	100
Upper-tier requirements (t)	200

EU legislation

Authorisations and/or restrictions on use

Restrictions on use

Regulation (EC) No. 1907/2006 (REACH), Annex XVII (restrictions)

Use restriction according to REACH annex XVII, no. : 3

National regulations

Water hazard class

Class : nwg (Non-hazardous to water)

15.2 Chemical Safety Assessment

No information available.

SECTION 16: Other information

16.1 Indication of changes

02. Classification of the substance or mixture · 02. Labelling according to Regulation (EC) No. 1272/2008 [CLP] · 08. DNEL/DMEL · 08. PNEC · 15. Water hazard class

16.2 Abbreviations and acronyms

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road
ASTM:	ASTM International, originally known as American Society for Testing and Materials (ASTM)
EINECS:	European Inventory of Existing Commercial Chemical Substances
EC50:	Effective Concentration 50 (Maximum Effective Concentration for 0% of Individuals)
LC50:	Lethal Concentration 50 (Lethal Concentration for 50% of Individuals)
IC50:	Inhibitor Concentration 50 (Inhibitory Concentration for 50% of Individuals)
NOEL:	No Observed Effect Level (Maximum dose without effect)
DNEL:	Derived No Effect Level (Derived no-effect dose)
DMEL:	Derived Minimum Effect Level (Derived dose of minimal effect)
CLP:	Classification, Labelling and Packaging
CSR:	Chemical Safety Report
LD50:	Lethal Dose 50 (Lethal Dose for 50% of Individuals)
IATA:	International Air Transport Association
ICAO:	International Civil Aviation Organization
Codice IMDG:	International Maritime Dangerous Goods code
PBT:	Persistent, bioaccumulative and toxic
RID:	Regulations concerning the international rail transport of Dangerous Goods
STEL:	Short term exposure limit
TLV:	Threshold limit value
TWA:	Time Weighted Average
UE:	European Union
vPvB:	Very persistent very bioaccumulative
N.D.:	Unavailable

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N.A.: Not applicable
VwVwS.: Text of Administrative Regulation on the Classification of Substances hazardous to waters into Water Hazard Classes

16.3 Key literature references and sources for data

None

16.4 Relevant H- and EUH-phrases (Number and full text)

H272 May intensify fire; oxidiser.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

16.5 Training advice

None

16.6 Additional information

None

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.
