acc. to Safe Work Australia - Code of Practice

## Iron(III) nitrate nonahydrate ≥96 %, pure

article number: CN84 date of compilation: 2017-03-15 Version: GHS 3.0 en

Replaces version of: 2022-04-01

Version: (GHS 2)

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

#### **Product identifier** 1.1

Identification of the substance **Iron(III) nitrate nonahydrate** ≥96 %, pure

Article number **CN84** 

CAS number 7782-61-8

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

Relevant identified uses: Laboratory chemical

Laboratory and analytical use

Uses advised against: Do not use for squirting or spraying. Do not use

for products which come into direct contact with the skin. Do not use for private purposes (household). Food, drink and animal feedingstuffs.

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

Carl Roth GmbH + Co. KG Schoemperlenstr. 3-5 D-76185 Karlsruhe Germany

Telephone:+49 (0) 721 - 56 06 0 **Telefax:** +49 (0) 721 - 56 06 149 e-mail: sicherheit@carlroth.de Website: www.carlroth.de

Competent person responsible for the safety data Department Health, Safety and Environment

sheet:

e-mail (competent person):

sicherheit@carlroth.de

#### 1.4 **Emergency telephone number**

Name	Street	Postal code/city	Telephone	Website
NSW Poisons Information Centre Childrens Hospital	Hawkesbury Road	2145 West- mead, NSW	131126	

## **SECTION 2: Hazards identification**

#### 2.1 Classification of the substance or mixture

## Classification acc. to GHS

Section	Hazard class	Cat- egory	Hazard class and category	Hazard statement
3.2	Skin corrosion/irritation	1B	Skin Corr. 1B	H314
3.3	Serious eye damage/eye irritation	1	Eye Dam. 1	H318

For full text of abbreviations: see SECTION 16

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## The most important adverse physicochemical, human health and environmental effects

Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis.

#### 2.2 Label elements

Labelling

Signal word Danger

**Pictograms** 

GHS05



## **Hazard statements**

H314 Causes severe skin burns and eye damage

## **Precautionary statements**

## **Precautionary statements - prevention**

P260 Do not breathe dusts or mists P280 Wear eye protection/face protection

#### **Precautionary statements - response**

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin

with water or shower

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing

P321 Specific treatment (see on this label)

#### **Precautionary statements - disposal**

P501 Dispose of contents/container to industrial combustion plant

#### 2.3 Other hazards

#### Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

### **Endocrine disrupting properties**

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0.1\%$ .

# **SECTION 3: Composition/information on ingredients**

## 3.1 Substances

Name of substance Iron(III) nitrate nonahydrate

Molecular formula  $Fe(NO_3)_3 \cdot 9 H_2O$ 

Molar mass  $404 \, {}^{g}\!/_{mol}$  CAS No 7782-61-8

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## **SECTION 4: First aid measures**

## 4.1 Description of first aid measures



#### **General notes**

Take off immediately all contaminated clothing. Self-protection of the first aider.

## Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

## **Following skin contact**

After contact with skin, wash immediately with plenty of water. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

## Following eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye.

## **Following ingestion**

Rinse mouth immediately and drink plenty of water. Call a physician immediately. If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

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

Corrosion, Risk of blindness, Gastric perforation, Risk of serious damage to eyes

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

none

## **SECTION 5: Firefighting measures**

## 5.1 Extinguishing media



## Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings! water, foam, alcohol resistant foam, dry extinguishing powder, ABC-powder

## Unsuitable extinguishing media

water jet

## 5.2 Special hazards arising from the substance or mixture

Non-combustible.

### **Hazardous combustion products**

In case of fire may be liberated: Nitrogen oxides (NOx)

#### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus. Wear full chemical protective clothing.

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## **SECTION 6: Accidental release measures**

## 6.1 Personal precautions, protective equipment and emergency procedures



## For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe dust.

## 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. The product is an acid. Before discharge into sewage plants the product normally needs to be neutralised.

## 6.3 Methods and material for containment and cleaning up

## Advice on how to contain a spill

Covering of drains. Take up mechanically.

## Advice on how to clean up a spill

Take up mechanically. Control of dust.

## Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

## 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

# SECTION 7: Handling and storage

## 7.1 Precautions for safe handling

Handle and open container with care. Avoid dust formation. Clear contaminated areas thoroughly.

## Measures to prevent fire as well as aerosol and dust generation

Removal of dust deposits.

## Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

## 7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place. Keep container tightly closed. Hygroscopic solid.

## **Incompatible substances or mixtures**

Observe hints for combined storage.

## Protect against external exposure, such as

high temperatures, humidity

## **Consideration of other advice:**

## **Ventilation requirements**

Use local and general ventilation.

## Specific designs for storage rooms or vessels

Recommended storage temperature: 15 - 25 °C

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#### 7.3 Specific end use(s)

No information available.

# SECTION 8: Exposure controls/personal protection

#### 8.1 **Control parameters**

## **National limit values**

## **Occupational exposure limit values (Workplace Exposure Limits)**

Coun try	Name of agent	CAS No	Identifi- er	TWA [mg/ m³]	STEL [mg/ m³]	Ceil- ing-C [mg/ m³]	Nota- tion	Source
AU	nuisance dusts		WES	10			i	WES

Notation

Ceiling value is a limit value above which exposure should not occur Inhalable fraction Ceiling-C

**STEL** Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-

minute period (unless otherwise specified) Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 TWA

hours time-weighted average (unless otherwise specified)

#### **Human health values**

#### Relevant DNELs and other threshold levels

Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	12 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
DNEL	17 mg/kg bw/ day	human, dermal	worker (industry)	chronic - systemic effects

## **Environmental values**

## **Relevant PNECs and other threshold levels**

End- point	Threshold level	Organism	Environmental com- partment	Exposure time
PNEC	0.024 <sup>mg</sup> / <sub>l</sub>	aquatic organisms	freshwater	short-term (single instance)
PNEC	0.002 <sup>mg</sup> / <sub>l</sub>	aquatic organisms	marine water	short-term (single instance)
PNEC	500 <sup>mg</sup> / <sub>l</sub>	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
PNEC	0.2 <sup>mg</sup> / <sub>kg</sub>	aquatic organisms	freshwater sediment	short-term (single instance)
PNEC	0.02 <sup>mg</sup> / <sub>kg</sub>	aquatic organisms	marine sediment	short-term (single instance)
PNEC	0.026 <sup>mg</sup> / <sub>kg</sub>	terrestrial organisms	soil	short-term (single instance)

#### 8.2 **Exposure controls**

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## **Individual protection measures (personal protective equipment)**

## **Eye/face protection**





Use safety goggle with side protection. Wear face protection.

## Skin protection





## hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a quide.

## type of material

NBR (Nitrile rubber)

#### material thickness

>0,3 mm

## · breakthrough times of the glove material

>480 minutes (permeation: level 6)

#### other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

## Respiratory protection





Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P1 (filters at least 80 % of airborne particles, colour code: White).

## **Environmental exposure controls**

Keep away from drains, surface and ground water.

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## **SECTION 9: Physical and chemical properties**

## 9.1 Information on basic physical and chemical properties

Physical state solid

Colour light blue

Odour faintly perceptible

Melting point/freezing point 47.2 °C (ECHA)

Boiling point or initial boiling point and boiling 125 °C (ECHA)

range

Flammability non-combustible

Lower and upper explosion limit not determined

Flash point not applicable

Auto-ignition temperature not determined

Decomposition temperature ~100 °C (Release of crystal water)

pH (value) 1.3 (in aqueous solution: 100 <sup>g</sup>/<sub>l</sub>, 20 °C)

Kinematic viscosity not relevant

Solubility(ies)

Water solubility 825 g/I (ECHA)

Partition coefficient

Partition coefficient n-octanol/water (log value): not relevant (inorganic)

Vapour pressure not determined

Density and/or relative density

Density  $1.68 \, {}^{\rm g}/_{\rm cm^3}$  at 25 °C (ECHA)

Relative vapour density Information on this property is not available.

Bulk density ~900 kg/<sub>m³</sub>

Particle characteristics No data available.

Other safety parameters

Oxidising properties none

9.2 Other information

Information with regard to physical hazard hazard classes acc. to GHS

classes: (physical hazards): not relevant

Other safety characteristics: There is no additional information.

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# **SECTION 10: Stability and reactivity**

## 10.1 Reactivity

This material is not reactive under normal ambient conditions.

## 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

## 10.3 Possibility of hazardous reactions

Violent reaction with: Reducing agents, Strong alkali, Dimethylsulfoxide (DMSO)

#### 10.4 Conditions to avoid

Keep away from heat. Decompostion takes place from temperatures above:  $\sim$ 100 °C. Protect from moisture.

## 10.5 Incompatible materials

There is no additional information.

## 10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

## **SECTION 11: Toxicological information**

## 11.1 Information on toxicological effects

## Classification acc. to GHS

#### **Acute toxicity**

Shall not be classified as acutely toxic.

GHS of the United Nations, annex 4. May be harmful if swallowed or in contact with skin.

Acute toxicity					
Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	>2,000 <sup>mg</sup> / <sub>kg</sub>	rat		ECHA
dermal	LD50	>2,000 <sup>mg</sup> / <sub>kg</sub>	rat		ECHA

#### Skin corrosion/irritation

Causes severe skin burns and eye damage.

## Serious eye damage/eye irritation

Causes serious eye damage.

## Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

### Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

## Carcinogenicity

Shall not be classified as carcinogenic.

#### Reproductive toxicity

Shall not be classified as a reproductive toxicant.

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## Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

## Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

## **Aspiration hazard**

Shall not be classified as presenting an aspiration hazard.

## Symptoms related to the physical, chemical and toxicological characteristics

#### If swallowed

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects)

## • If in eyes

causes burns, Causes serious eye damage, risk of blindness

#### If inhaled

Data are not available.

#### • If on skin

causes severe burns, causes poorly healing wounds

#### Other information

none

## 11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq$  0,1%.

# **SECTION 12: Ecological information**

## 12.1 Toxicity

Harmful to aquatic life.

Aquatic toxicity (acı	ute)			
Endpoint	Value	Species	Source	Exposure time
ErC50	130 <sup>mg</sup> / <sub>l</sub>	algae	ECHA	72 h

# Aquatic toxicity (chronic) Endpoint Value Species Source Exposure time EC50 18 mg/l aquatic invertebrates ECHA 21 d

## 12.2 Persistence and degradability

Data are not available.

## 12.3 Bioaccumulative potential

Data are not available.

## 12.4 Mobility in soil

Data are not available.

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Data are not available.

## 12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0.1\%$ .

#### 12.7 Other adverse effects

Data are not available.

## **SECTION 13: Disposal considerations**

#### 13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

## Sewage disposal-relevant information

Do not empty into drains.

## Waste treatment of containers/packagings

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used. Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

## Relevant provisions relating to waste(Basel Convention)

## Properties of waste which render it hazardous

**H8** Corrosives

#### 13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

# **SECTION 14: Transport information**

## 14.1 UN number

UN RTDGUN 3260IMDG-CodeUN 3260ICAO-TIUN 3260

#### 14.2 UN proper shipping name

UN RTDG CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. IMDG-Code CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.

ICAO-TI Corrosive solid, acidic, inorganic, n.o.s.

Technical name Eisen(III)-nitrat-Nonahydrat

## 14.3 Transport hazard class(es)

UN RTDG 8
IMDG-Code 8

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ICAO-TI 8

14.4 Packing group

UN RTDG II
IMDG-Code II
ICAO-TI II

**14.5** Environmental hazards non-environmentally hazardous acc. to the dan-

gerous goods regulations

14.6 Special precautions for user

There is no additional information.

14.7 Transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

## 14.8 Information for each of the UN Model Regulations

Transport informationNational regulationsAdditional information(UN RTDG)

UN number 3260
Class 8
Packing group II
Danger label(s) 8

Special provisions (SP) 274

UN RTDG

Excepted quantities (EQ) E2 UN RTDG

Limited quantities (LQ) 1 kg

1 kg UN RTDG

Emergency Action Code 2X

International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.

Particulars in the shipper's declaration UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC,

N.O.S., (Eisen(III)-nitrat-Nonahydrat), 8, II

Marine pollutant Danger label(s) 8



Special provisions (SP) 274

Excepted quantities (EQ) E2

Limited quantities (LQ) 1 kg

EmS F-A, S-B

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Stowage category B

Segregation group 1 - Acids

## International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Proper shipping name Corrosive solid, acidic, inorganic, n.o.s.

Particulars in the shipper's declaration UN3260, Corrosive solid, acidic, inorganic, n.o.s.,

(Eisen(III)-nitrat-Nonahydrat), 8, II

Danger label(s)



Special provisions (SP)

Excepted quantities (EQ)

Limited quantities (LQ)

5 kg

## **SECTION 15: Regulatory information**

**15.1** Safety, health and environmental regulations/legislation specific for the substance or mixture There is no additional information.

**National regulations(Australia)** 

Australian Inventory of Chemical Substances(AICS)

Substance is listed.

#### Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

#### **National inventories**

Country	Inventory	Status
AU	AIIC	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
EU	REACH Reg.	substance is listed
JP	CSCL-ENCS	substance is listed
KR	KECI	substance is listed
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed (ACTIVE)
VN	NCI	substance is listed

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Legend

Australian Inventory of Industrial Chemicals List of Existing and New Chemical Substances (CSCL-ENCS)

Domestic Substances List (DSL)

EC Substance Inventory (EINECS, ELINCS, NLP)
Inventory of Existing Chemical Substances Produced or Imported in China National Inventory of Chemical Substances

AIIC CSCL-ENCS DSL ECSI IECSC INSQ KECI NATIONAL Inventory of Chemical Substances

KECI Korea Existing Chemicals Inventory

NCI National Chemical Inventory

NZIOC New Zealand Inventory of Chemicals

PICCS Philippine Inventory of Chemicals and Chemical Substances (PICCS)

REACH Reg. REACH registered substances

This probability between Inventory

TCSI TSCA Taiwan Chemical Substance Inventory

**Toxic Substance Control Act** 

## 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

# **SECTION 16: Other information**

## **Indication of changes (revised safety data sheet)**

Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	yes
14.8		Emergency Action Code: 2X	yes
15.1		National inventories: change in the listing (table)	yes

## Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
ED	Endocrine disruptor
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization

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Abbr.	Descriptions of used abbreviations		
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air		
IMDG	International Maritime Dangerous Goods Code		
IMDG-Code	International Maritime Dangerous Goods Code		
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval		
NLP	No-Longer Polymer		
PBT	Persistent, Bioaccumulative and Toxic		
PNEC	Predicted No-Effect Concentration		
STEL	Short-term exposure limit		
TWA	Time-weighted average		
UN RTDG	UN Recommendations on the Transport of Dangerous Good		
vPvB	Very Persistent and very Bioaccumulative		
WES	Safe Work Australia: Workplace exposure standards for airborne contaminants		

## Key literature references and sources for data

Safe Work Australia's Code of Practice for Labelling of Workplace Hazardous Chemicals (under WHS Regulations).

UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

## List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.

## **Disclaimer**

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

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