

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Iron(II) chloride tetrahydrate

Creation date	09th September 2019	Version	3.0
Revision date	07th November 2024		

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

- 1.1. Product identifier**  
 Iron(II) chloride tetrahydrate  
 Substance / mixture: substance  
 Chemical name: Iron(II) chloride tetrahydrate  
 CAS number: 13478-10-9  
 EC (EINECS) number: 231-843-4  
 Registration number: 01-2119498060-41-xxxx  
 Other substance name: Iron(II) chloride tetrahydrate, Ferrous chloride tetrahydrate
- 1.2. Relevant identified uses of the substance or mixture and uses advised against**  
**Substance's intended use**  
 Chemical production, analytical chemistry, laboratory synthesis, industrial applications.  
**Substance uses advised against**  
 The product should not be used in ways other than those referred in Section 1.
- 1.3. Details of the supplier of the safety data sheet**  
**Supplier**  
 Name or trade name: Ing. Petr Švec - PENTA s.r.o.  
 Address: Radiová 1122/1, Praha 10, 102 00  
 Czech Republic  
 Identification number (CRN): 02096013  
 VAT Reg No: CZ02096013  
 Phone: +420 226 060 681  
 E-mail: info@pentachemicals.eu  
 Web address: www.pentachemicals.eu
- Competent person responsible for the safety data sheet**  
 Name: Ing. Petr Švec - PENTA s.r.o.  
 E-mail: info@pentachemicals.eu
- 1.4. Emergency telephone number**  
 European emergency number: 112 112

#### SECTION 2: Hazards identification

- 2.1. Classification of the substance or mixture**  
**Classification of the substance in accordance with Regulation (EC) No 1272/2008**

The substance is classified as dangerous.

Acute Tox. 4, H302

Eye Dam. 1, H318

**Most serious adverse effects on human health and the environment**

Harmful if swallowed. Causes serious eye damage.

- 2.2. Label elements**

**Hazard pictogram**



**Signal word**

Danger

**Dangerous substance**

Iron(II) chloride tetrahydrate  
 (EC: 231-843-4; CAS: 13478-10-9)

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Iron(II) chloride tetrahydrate

Creation date	09th September 2019	Version	3.0
Revision date	07th November 2024		

#### Hazard statements

H302 Harmful if swallowed.  
H318 Causes serious eye damage.

#### Precautionary statements

P280 Wear eye protection.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

#### 2.3. Other hazards

The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. Substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended. Does not contain any PMT or vPvM components. Dust may form explosive mixture with air.

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

##### Chemical characterization

The substance specified below.

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note
CAS: 13478-10-9 EC: 231-843-4 Registration number: 01-2119498060-41-xxxx	<b>substance main component</b> Iron(II) chloride tetrahydrate	>99	Acute Tox. 4, H302 Eye Dam. 1, H318	

Full text of all classifications and hazard statements is given in the section 16.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

Take care of your own safety. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet. If unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that airways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Respiratory arrest - provide artificial respiration immediately. Cardiac arrest - provide indirect cardiac massage immediately.

##### If inhaled

Terminate the exposure immediately; move the affected person to fresh air. Protect the person against growing cold. Provide medical treatment if irritation, dyspnoea or other symptoms persist.

##### If on skin

Remove contaminated clothes. Wash the affected area with plenty of water, lukewarm if possible. Soap, soap solution or shampoo should be used if there is no skin injury. Provide medical treatment if skin irritation persists.

##### If in eyes

Do not rub your eyes – it could lead to mechanical damage of the cornea. Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. No neutralization should be performed in any case! Rinsing should be continued for 10-30 minutes from the inner to the outer eye corner to make sure that the other eye is not involved. Depending on the situation, call medical rescue service or ensure medical treatment as promptly as possible. Everyone must be referred for treatment even if affected only a little.

##### If swallowed

Rinse out the mouth with water and provide 2-5 dL of water. Provide medical treatment.

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Iron(II) chloride tetrahydrate

Creation date	09th September 2019	Version	3.0
Revision date	07th November 2024		

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

##### If inhaled

Inhaling dust can cause corrosion of the breathing system.

##### If on skin

Not expected.

##### If in eyes

Causes serious eye damage.

##### If swallowed

Corrosion of the digestion system can occur.

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

Symptomatic treatment.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

##### Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist.

##### Unsuitable extinguishing media

Water - full jet.

#### 5.2. Special hazards arising from the substance or mixture

In the event of fire, carbon monoxide, carbon dioxide and other toxic gases may arise. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

#### 5.3. Advice for firefighters

Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Use a self-contained breathing apparatus and full-body protective clothing. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8. Prevent contact with skin and eyes.

#### 6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water.

#### 6.3. Methods and material for containment and cleaning up

Place the product mechanically in an appropriate manner. Dispose of the collected material according to the instructions in the section 13.

#### 6.4. Reference to other sections

See the Section 7, 8 and 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Prevent contact with skin and eyes. Do not eat, drink or smoke when using this product. Wash hands and exposed parts of the body thoroughly after handling. Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection.

#### 7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose.

#### 7.3. Specific end use(s)

not available

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

none

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Iron(II) chloride tetrahydrate

Creation date	09th September 2019	Version	3.0
Revision date	07th November 2024		

#### 8.2. Exposure controls

Follow the usual measures intended for health protection at work and especially for good ventilation. This can be achieved only by local suction or efficient general ventilation. Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

##### Eye/face protection

Protective goggles or face shield (based on the nature of the work performed).

##### Skin protection

Hand protection: Protective gloves resistant to the product (nitrile rubber). When choosing appropriate thickness, material and permeability of the gloves, observe recommendations of their particular manufacturer. Observe other recommendations of the manufacturer. Other protection: protective workwear. Contaminated skin should be washed thoroughly.

##### Respiratory protection

Use a mask with anti-dust filter when the exposition limits of the substances are exceeded or at the place with insufficient ventilation.

##### Thermal hazard

Not available.

##### Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	solid
Colour	light green
Odour	data not available
Melting point/freezing point	105-110 °C
Boiling point or initial boiling point and boiling range	1.023 °C
Flammability	The product is non-flammable.
Lower and upper explosion limit	data not available
Flash point	data not available
Auto-ignition temperature	data not available
Decomposition temperature	data not available
pH	data not available
Kinematic viscosity	data not available
Solubility in water	data not available
Partition coefficient n-octanol/water (log value)	-1.5
Vapour pressure	data not available
Density and/or relative density	
Density	1.93 g/cm <sup>3</sup> at 20 °C
Relative vapour density	data not available
Particle characteristics	data not available

### 9.2. Other information

Oxidising properties: The product has no oxidizing properties.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The substance is non-flammable.

### 10.2. Chemical stability

The product is stable under normal conditions.

### 10.3. Possibility of hazardous reactions

Unknown.

**SAFETY DATA SHEET**

according to Regulation (EC) No 1907/2006 (REACH) as amended

**Iron(II) chloride tetrahydrate**

Creation date	09th September 2019	Version	3.0
Revision date	07th November 2024		

**10.4. Conditions to avoid**

The product is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

**10.5. Incompatible materials**

Protect against strong acids, bases and oxidizing agents.

**10.6. Hazardous decomposition products**

Not developed under normal uses. Dangerous outcomes such as carbon monoxide and carbon dioxide are formed at high temperature and in fire.

**SECTION 11: Toxicological information**

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

No toxicological data is available for the substance.

**Acute toxicity**

Harmful if swallowed.

Iron(II) chloride tetrahydrate						
Route of exposure	Parameter	Value	Exposure time	Species	Sex	Source
	LD <sub>50</sub>	500 mg/kg		Rat (Rattus norvegicus)	F	
Inhalation	LC <sub>50</sub>	8.3 mg/l	05 minutes	Rat (Rattus norvegicus)	M	ECHA
Dermal	LD <sub>50</sub>	>2000 mg/kg		Rat (Rattus norvegicus)	F/M	

**Skin corrosion/irritation**

Based on available data the classification criteria are not met.

**Serious eye damage/irritation**

Causes serious eye damage.

**Respiratory or skin sensitisation**

Based on available data the classification criteria are not met.

**Germ cell mutagenicity**

Based on available data the classification criteria are not met.

**Carcinogenicity**

Based on available data the classification criteria are not met.

**Reproductive toxicity**

Based on available data the classification criteria are not met.

**Toxicity for specific target organ - single exposure**

Based on available data the classification criteria are not met.

**Toxicity for specific target organ - repeated exposure**

Based on available data the classification criteria are not met.

**Aspiration hazard**

Based on available data the classification criteria are not met.

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Iron(II) chloride tetrahydrate

Creation date	09th September 2019	Version	3.0
Revision date	07th November 2024		

#### 11.2. Information on other hazards

##### Endocrine disrupting properties

Based on available data the classification criteria are not met. Does not contain any components that may cause endocrine disruption for humans.

##### Other information

not available

#### SECTION 12: Ecological information

##### 12.1. Toxicity

not available

##### 12.2. Persistence and degradability

not available

##### 12.3. Bioaccumulative potential

Not available.

##### 12.4. Mobility in soil

Not available.

##### 12.5. Results of PBT and vPvB assessment

Based on available data the classification criteria are not met. Does not contain any PBT or vPvB components. Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

##### 12.6. Endocrine disrupting properties

Based on available data the classification criteria are not met. Does not contain any components that may cause endocrine disruption in the environment.

##### 12.7. Other adverse effects

Not available.

#### SECTION 13: Disposal considerations

##### 13.1. Waste treatment methods

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

##### Waste management legislation

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

#### SECTION 14: Transport information

##### 14.1. UN number or ID number

not subject to transport regulations

##### 14.2. UN proper shipping name

not relevant

##### 14.3. Transport hazard class(es)

not relevant

##### 14.4. Packing group

not relevant

##### 14.5. Environmental hazards

not relevant

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Iron(II) chloride tetrahydrate

Creation date	09th September 2019	Version	3.0
Revision date	07th November 2024		

#### 14.6. Special precautions for user

not available

#### 14.7. Maritime transport in bulk according to IMO instruments

not relevant

### SECTION 15: Regulatory information

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. 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 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

#### 15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

### SECTION 16: Other information

#### A list of standard risk phrases used in the safety data sheet

H302	Harmful if swallowed.
H318	Causes serious eye damage.

#### Guidelines for safe handling used in the safety data sheet

P280	Wear eye protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

#### Other important information about human health protection

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per the Section 1. The user is responsible for adherence to all related health protection regulations.

#### Key to abbreviations and acronyms used in the safety data sheet

Acute Tox.	Acute toxicity
ADR	European agreement concerning the international carriage of dangerous goods by road
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
EC	Identification code for each substance listed in EINECS
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency plan
EU	European Union
EuPCS	European Product Categorisation System
Eye Dam.	Serious eye damage
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Iron(II) chloride tetrahydrate

Creation date	09th September 2019	Version	3.0
Revision date	07th November 2024		

IUPAC	International Union of Pure and Applied Chemistry
LC <sub>50</sub>	Lethal concentration of a substance in which it can be expected death of 50% of the population
LD <sub>50</sub>	Lethal dose of a substance in which it can be expected death of 50% of the population
log Kow	Octanol-water partition coefficient
OEL	Occupational Exposure Limits
PBT	Persistent, bioaccumulative and toxic
PMT	Persistent, mobile and toxic
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Agreement on the transport of dangerous goods by rail
UN	Four-figure identification number of the substance or article taken from the UN Model Regulations
UVCB	Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very persistent and very bioaccumulative
vPvM	Very persistent and very mobile

#### Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

#### Recommended restrictions of use

not available

#### Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

#### The changes (which information has been added, deleted or modified)

The version 3.0 replaces the SDS version from Tuesday, 8 November 2022. Changes were made in sections 1, 2, 11, 12, 13, 15 and 16.

#### More information

Classification procedure - calculation method.

#### Statement

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.