

Iron(II) diammonium dioxalate



IDENTIFICATION

Iron(II) diammonium dioxalate

ZVG number: 35310

CAS number: 13268-42-3 trihydrate

INDEX number: 607-007-00-3

CHARACTERISATION

SUBSTANCE GROUP CODE

128120 Ammonium salts

137100 Iron compounds

143800 Carboxylic acid salts

STATE OF AGGREGATION

The substance is solid.

PROPERTIES

Form: powder

Colour:
yellow to green

CHEMICAL CHARACTERISATION

Solid without any information about flammability.

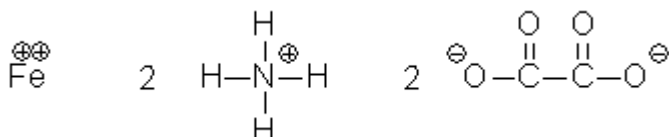
Soluble in water.

Sensitive to light.

Acute or chronic health hazards result from the substance.
(see: chapter REGULATIONS).

FORMULA

C₄H₈FeN₂O₈



Molar mass: 267,96 g/mol

PHYSICAL AND CHEMICAL PROPERTIES

MELTING POINT

The substance decomposes when heated (see decomposition temperature).

DENSITY

DENSITY

Value: 1,78 g/cm³

SOLUBILITY IN WATER

soluble

pH-VALUE

pH-value: 3,5 ... 4,5

Concentration: 100 g/l

OCCUPATIONAL HEALTH AND FIRST AID

TOXIC EFFECTS

Annotation:

At present time the occupational health information for this substance is only available in german. Please consult our database in german.

FIRST AID

Annotation:

At present time the first aid information for this substance is only available in German. Please consult our database in German.

HANDLING AND USAGE

TECHNICAL MEASURES - HANDLING

Workplace:

Provision of good ventilation in the working area.

Washing facility at the workplace required.

Equipment:

Use closed apparatus if possible.

If release of the substance cannot be prevented, then it should be suctioned off at the point of exit.

Consider emission limit values, a purification of waste gases if necessary.

Label containers and pipelines clearly.

Advice on safer handling:

Take care to maintain clean working place.

Do not leave container open.

Use leak-proof equipment with exhaust for refilling or transfer.

Avoid spillage.

Fill only into labelled container.

Avoid rising dust.

Cleaning and maintenance:

Use protective equipment while cleaning if necessary.

Avoid dust formation. Dust formation that cannot be avoided must be collected regularly.

Use a tested industrial vacuum cleaner or suction device.

Do not raise dust while cleaning.

Use of a blower for cleaning is not permitted.

Only conduct maintenance and other work on or in the vessel or closed spaces after obtaining written permission.

TECHNICAL MEASURES - STORAGE**Storage:**

Do not use any food containers - risk of mistake.

Containers have to be labelled clearly and permanently.

Store in the original container as much as possible.

Keep container tightly closed.

Store in a cool place.

Store in a dry place.

Keep container in a well-ventilated place.

Protect from exposure to light.

Conditions of collocated storage:

Storage class 10 - 13 (Other liquids and solids)

Only substances of the same storage class should be stored together.

Collocated storage with the following substances is prohibited:

- Pharmaceuticals, foods, and animal feeds including additives.
- Infectious, radioactive und explosive substances.
- Strongly oxidizing substances of storage class 5.1A.

Under certain conditions the collocated storage with the following sub-stances is permitted (For more details see [TRGS 510](#)):

- Gases.
- Flammable liquids of storage class 3.
- Other explosive substances of storage class 4.1A.
- Spontaneously flammable substances.
- Substances liberating flammable gases in contact with water.
- Oxidizing substances of storage class 5.1B.
- Ammonium nitrate and preparations containing ammonium nitrate.
- Organic peroxides and self reactive substances.
- Combustible and non combustible acutely toxic substances of storage classes 6.1A and 6.1B.

The substance should not be stored with substances with which hazardous chemical reactions are possible.

TECHNICAL MEASURES - FIRE AND EXPLOSION PROTECTION**Technical, constructive measures:**

Substance is non-combustible. Select fire and explosion prevention measures according to the other used substances.

ORGANISATIONAL MEASURES

Instruction on the hazards and the protective measures using instruction manual ([TRGS 555](#)) are required with signature if just more than one minor hazard was detected.

Instruction must be provided before employment and then at a minimum of once per annum thereafter.

Observe the restrictions on juvenile employment as defined in the "Jugendarbeitsschutzgesetz".

Observe the restrictions on the employment of expectant and nursing mothers as defined in the "Mutterschutzverordnung".

PERSONAL PROTECTION**Body protection:**

Depending on the risk, wear a tight, long apron and boots or suitable chemical protection clothing.
Wear dust tight protective clothing.

Respiratory protection:

In an emergency (e.g.: unintentional release of the substance) respiratory protection must be worn.
Consider the maximum period for wear.

At present time there is no available information about suitable filter respirator.

A self-contained breathing apparatus can be used in any case.

Eye protection:

Sufficient eye protection should be worn.

Wear glasses with side protection.

Hand protection:

Use protective gloves. The glove material must be sufficiently impermeable and resistant to the substance. Check the tightness before wear. Gloves should be well cleaned before being removed, then stored in a well ventilated location. Pay attention to skin care.

Skin protection cremes do not protect sufficiently against the substance.

Currently there is no information available regarding suitable glove materials.

Experience says that polychloroprene, nitrile rubber, butyl rubber, fluoro-caoutchouc, and polyvinyl chloride are suitable as glove materials for protection against un-dissolved solids.

Industrial hygiene:

Foods, beverages and other articles of consumption must not be consumed at the work areas. Suitable areas are to be designated for these purposes.

Avoid contact with skin. In case of contact wash skin.

Avoid inhalation of dust.

Avoid contact with clothing. Contaminated clothes must be exchanged and cleaned carefully.

Provide washrooms with showers and if possible rooms with separate storage for street clothing and work clothing.

The skin must be washed with soap and water before breaks and at the end of work. Apply fatty skin-care products after washing.

DISPOSAL CONSIDERATIONS

Hazardous waste according to Waste Catalogue Ordinance (AVV).

If there is no way of recycling it must be disposed of in compliance with the respective national and local regulations.

Collection of small amounts of substance:

Collect in container for solid organic residues.

Collection vessels must be clearly labelled with a systematic description of their contents. Store the vessels in a well-ventilated location. Entrust them to the appropriate authorities for disposal.

ACCIDENTAL RELEASE MEASURES

Wear respiratory protection, eye protection, hand protection and body protection (see chapter Personal Protection).

Carefully sweep up, gather and remove. Avoid rising dust.

Afterwards ventilate area and wash spill site.

Endangerment of watert:

Low hazard to waters. Inform the responsible authorities when very large quantities get into water, drainage, sewer, or the ground.

FIRE FIGHTING MEASURES**Instructions:**

Substance is incombustible. Select fire fighting measures according to the surrounding conditions.

Special protective equipment:

Ambient fire may liberate hazardous vapours or decomposition products.
Nitrous gases (nitric oxides)
Carbon monoxide and carbon dioxide
Wear self-contained breathing apparatus.

REGULATIONS

Classification:

Acute toxicity, Category 4, oral; H302
Acute toxicity, Category 4, dermal; H312



Signal Word: "Warning"

Hazard Statement - H-phrases:

H302: Harmful if swallowed.
H312: Harmful in contact with skin.

Precautionary Statement - P-phrases:

P280: Wear protective gloves/protective clothing.
Manufacturer's specification by Sigma-Aldrich Group

Source: [01221](#)

The substance is listed in appendix VI, table 3.1 of CLP regulation.

The given classification can deviate from the listed classification, since this classification is to be complemented concerning missing or divergent danger classes and categories for the respective substance.

Source: [99999](#)

GHS-CLASSIFICATION OF MIXTURES

The classification of mixtures containing this substance results from Annex 1 of Regulation (EC) 1272/2008.

Source: [07501](#)

EUROPEAN CLASSIFICATION

Xn; R21/22



Xn Harmful

Risk phrases (R-phrases):

R 21/22 Harmful in contact with skin and if swallowed

EU classification according to GHS regulation, appendix VI, table 3.2

Scope:

Salts of oxalic acid

Source: [07501](#)

CLASSIFICATION OF MIXTURES

Specific Concentration Limits:

Xn; R21/22: C \geq 5 %

The general concentration limits from Preparation Directive 1999/45/EU are to be used for possible further available substance classifications.

Source: [07501](#)

WORKPLACE LABELLING ACCORDING TO GERMAN ASR A1.3

The workplace labelling still refers to the old hazard classification, because ASR A1.3 has not yet been converted to GHS.

Warning label:



Caution - harmful or irritant material

Precept label:



Use safety goggles



Wear safety gloves

GERMAN WATER HAZARD CLASS

WGK 1 - low hazard to waters

Manufacturer's specification by Alfa Aesar

TECHNICAL INSTRUCTIONS ON AIR QUALITY CONTROL (TA LUFT)

Chapter 5.2.5 Organic Substances, dust

To be treated as overall dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values:

Mass flow: 0,20 kg/hr

or

Mass concentration: 20 mg/m³

The mass per unit volume of 0,15 g/m³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0,20 kg/h.

TRANSPORT REGULATIONS

Not subject to transport regulations.

FURTHER REGULATIONS

[TRGS 200](#)

Einstufung und Kennzeichnung von Stoffen, Zubereitungen und Erzeugnissen; Ausgabe Oktober 2011

[TRGS 201](#)

Einstufung und Kennzeichnung bei Tätigkeiten mit Gefahrstoffen; Ausgabe Oktober 2011

[TRGS 400](#)

Gefährdungsbeurteilung für Tätigkeiten mit Gefahrstoffen; Ausgabe Dezember 2010; geändert und ergänzt September 2012

[TRGS 555](#)

Betriebsanweisung und Information der Beschäftigten; Ausgabe Januar 2013

[TRGS 600](#)

Substitution; Ausgabe August 2008

[TRGS 401](#)

Gefährdung durch Hautkontakt, Ermittlung - Beurteilung - Maßnahmen; Ausgabe Juni 2008; berichtigt Februar 2010

[TRGS 500](#)

Schutzmaßnahmen; Ausgabe Januar 2008, ergänzt Mai 2008

[TRGS 510](#)

Lagerung von Gefahrstoffen in ortsbeweglichen Behältern; Ausgabe Oktober 2010