

# SAFETY DATA SHEET

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

### 1.1. Product identifier

**Trade name**

Redox calibration solution

**Product no.**

A-85.121.300, A-85.121.320

**REACH registration number**

Not applicable

**Unique formula identifier (UFI)**

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

**Relevant identified uses of the substance or mixture**

Calibration solution

**Uses advised against**

-

The full text of any mentioned and identified use categories are given in section 16

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

**Company and address**

SWAN Analytische Instrumente AG  
Studbachstrasse 13  
CH-8340 Hinwil  
Switzerland  
Phone: +41 44 943 63 00  
Fax: +41 44 943 63 01

**Contact person**

M.Lendi

**E-mail**

info@swan.ch

**SDS date**

2019-03-19

**SDS Version**

6.0

### 1.4. Emergency telephone number

Contact The National Poisons Information Service (dial 111, 24 h service). See section 4 "First aid measures".

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Skin Irrit. 2; H315

Eye Irrit. 2; H319

See full text of H-phrases in section 2.2.

### 2.2. Label elements

**Hazard pictogram(s)**

According to EC-Regulation 2015/830



**Signal word**

Warning

**Hazard statement(s)**

Causes skin irritation. (H315)

Causes serious eye irritation. (H319)

**Precautionary statements**

General -

Prevention

Wash hands/exposed skin thoroughly after handling. (P264).

Wear protective gloves/protective clothing. (P280).

Response

If eye irritation persists: Get medical advice/attention. (P337+P313).

Storage -

Disposal -

**Identity of the substances primarily responsible for the major health hazards**

Not applicable

**2.3. Other hazards**

Not applicable

**Additional labelling**

Not applicable

**Additional warnings**

Not applicable

**VOC (volatile organic compound)**

Not applicable

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

**3.1/3.2. Substances/Mixtures**

NAME: Water  
IDENTIFICATION NOS.: CAS-no: 7732-18-5 EC-no: 231-791-2  
CONTENT: 80-95%  
CLP CLASSIFICATION: NA

NAME: Sulphuric acid  
IDENTIFICATION NOS.: CAS-no: 7664-93-9 EC-no: 231-639-5 REACH-no: 01-2119458838-20 Index-no: 016-020-00-8  
CONTENT: 10 - <15%  
CLP CLASSIFICATION: Skin Corr. 1A  
H314  
NOTE: L

NAME: Ammonium iron(III) sulfate dodecahydrate  
IDENTIFICATION NOS.: CAS-no: 7783-83-7  
CONTENT: 2.5 - <5%  
CLP CLASSIFICATION: Skin Irrit. 2, Eye Irrit. 2  
H315, H319

NAME: Ammonium iron(II) sulfate hexahydrate  
IDENTIFICATION NOS.: CAS-no: 7783-85-9  
CONTENT: 2.5 - <5%  
CLP CLASSIFICATION: STOT SE 3, Skin Irrit. 2, Eye Irrit. 2  
H315, H319, H335

(\*) See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

**Other information**

According to EC-Regulation 2015/830

Eye Cat. 2 Sum = Sum(Ci/S(G)CLi) = 2.3448 - 3.5172  
Skin Cat. 2 Sum = Sum(Ci/S(G)CLi) = 2.3448 - 3.5172

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. The doctor can contact The National Poisons Information Service: Dial 0344 892 0111 (24 h service). Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

#### Inhalation

Bring the person into fresh air and stay with him/her.

#### Skin contact

Remove contaminated clothing and shoes immediately. Ensure to wash exposed skin thoroughly with soap and water. Skin cleanser can be used. DO NOT use solvents or thinners.

#### Eye contact

Remove contact lenses. Flush eyes immediately with plenty of water or isotonic water (20-30°C) for at least 15 minutes and continue until irritation stops. Make sure to flush under the upper and lower eyelids. If irritation continues, contact a doctor. Continue flushing during transport.

#### Ingestion

Provide plenty of water for the person to drink and stay with him/her. In case of malaise, seek medical advice immediately and bring the safety data sheet or label from the product. Do not induce vomiting, unless recommended by the doctor. Have the victim lean forward with head down to avoid inhalation of- or choking on vomited material.

#### Burns

Not applicable

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

Irritation effects: This product contains substances, which may cause irritation upon exposure to skin, eyes or lungs. Exposure may result in an increased absorption potential of other hazardous substances at the area of exposure.

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

If eye irritation persists: Get medical advice/attention.

#### Information to medics

Bring this safety data sheet.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Recommended: alcohol-resistant foam, carbonic acid, powder, water mist. Waterjets should not be used, since they can spread the fire.

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

If the product is exposed to high temperatures, e.g. in the event of fire, dangerous catabolic substances are produced. These are: Sulphur oxides. Nitrogen oxides. Some metal oxides. Fire will result in dense black smoke. Exposure to combustion products may harm your health. Fire fighters should wear appropriate protection equipment. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.

### 5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact The National Poisons Information Service (dial 111, 24 h service) in order to obtain further advice.

## SECTION 6: Accidental release measures

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

No specific requirements.

### 6.2. Environmental precautions

According to EC-Regulation 2015/830

No specific requirements.

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

Use sand, sawdust, earth, vermiculite, diatomaceous earth to contain and collect non-combustible absorbent materials and place in container for disposal, according to local regulations. To the extent possible cleaning is performed with normal cleaning agents. Avoid use of solvents.

### 6.4. Reference to other sections

See section on "Disposal considerations" in regard of handling of waste. See section on 'Exposure controls/personal protection' for protective measures.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Smoking, storage of tobacco, consumption and storage of food or liquids are not allowed in the workrooms. See section on 'Exposure controls/personal protection' for information on personal protection.

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

Always store in containers of the same material as the original container. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

#### Storage temperature

No data available.

### 7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### OEL

Sulphuric acid

Long-term exposure limit (8-hour TWA reference period): - ppm | 0,05 mg/m<sup>3</sup>

Short-term exposure limit (15-minute reference period): - ppm | - mg/m<sup>3</sup>

#### DNEL / PNEC

No data available

### 8.2. Exposure controls

Compliance with the accepted occupational exposure limits values should be controlled on a regular basis.

#### General recommendations

Observe general occupational hygiene standards.

#### Exposure scenarios

In the event exposure scenarios are appended to the safety data sheet, the operational conditions and risk management measures in these shall be complied with.

#### Exposure limits

Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.

#### Appropriate technical measures

Airborne gas and dust concentrations must be kept at a minimum and below current limit values (see above). Installation of an exhaust system if normal air flow in the work room is not sufficient is recommended. Ensure emergency eyewash and -showers are clearly marked.

#### Hygiene measures

In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Always wash hands, forearms and face.

#### Measures to avoid environmental exposure

No specific requirements.

### Individual protection measures, such as personal protective equipment



According to EC-Regulation 2015/830

**Generally**

Use only CE marked protective equipment.

**Respiratory Equipment**

NA

**Skin protection**

Dedicated work clothing should be worn.

**Hand protection**

Nitrile rubber

**Eye protection**

Wear safety glasses with side shields.

**SECTION 9: Physical and chemical properties**

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

Form	Liquid
Colour	Colourless
Odour	None
Odour threshold (ppm)	No data available.
pH	No data available.
Viscosity (40°C)	No data available.
Density (g/cm <sup>3</sup> )	No data available.

**Phase changes**

Melting point (°C)	No data available.
Boiling point (°C)	100
Vapour pressure	No data available.
Decomposition temperature (°C)	No data available.
Evaporation rate (n-butylacetate = 100)	No data available.

**Data on fire and explosion hazards**

Flash point (°C)	No data available.
Ignition (°C)	No data available.
Auto flammability (°C)	No data available.
Explosion limits (% v/v)	No data available.
Explosive properties	No data available.

**Solubility**

Solubility in water	Soluble
n-octanol/water coefficient	No data available.

**9.2. Other information**

Solubility in fat (g/L)	No data available.
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**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

No data available

**10.2. Chemical stability**

The product is stable under the conditions, noted in the section "Handling and storage".

**10.3. Possibility of hazardous reactions**

Nothing special

**10.4. Conditions to avoid**

Do not expose to any forms of heat (e.g. solar radiation). May lead to excess pressure.

**10.5. Incompatible materials**

Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

**10.6. Hazardous decomposition products**

The product is not degraded when used as specified in section 1.

**SECTION 11: Toxicological information**

According to EC-Regulation 2015/830

### 11.1. Information on toxicological effects

#### Acute toxicity

Substance: Ammonium iron(II) sulfate hexahydrate  
 Species: Rat  
 Test: LD50  
 Route of exposure: Oral  
 Result: 3250 mg/kg

Substance: Sulphuric acid  
 Species: Rat  
 Test: LD50  
 Route of exposure: Dermal  
 Result: > 2000 mg/kg bw

Substance: Sulphuric acid  
 Species: Rat  
 Test: LD50  
 Route of exposure: Oral  
 Result: 2140 mg/kg

Substance: Sulphuric acid  
 Species: Rat  
 Test: LC50  
 Route of exposure: Inhalation  
 Result: 510 mg/m<sup>3</sup>

#### Skin corrosion/irritation

Causes skin irritation.

#### Serious eye damage/irritation

Causes serious eye irritation.

#### Respiratory or skin sensitisation

Data on substance: Sulphuric acid

#### Germ cell mutagenicity

No data available.

#### Carcinogenicity

No data available.

#### Reproductive toxicity

No data available.

#### STOT-single exposure

No data available.

#### STOT-repeated exposure

No data available.

#### Aspiration hazard

No data available.

#### Long term effects

Irritation effects: This product contains substances, which may cause irritation upon exposure to skin, eyes or lungs. Exposure may result in an increased absorption potential of other hazardous substances at the area of exposure.

## SECTION 12: Ecological information

### 12.1. Toxicity

Substance: Sulphuric acid  
 Species: Daphnia  
 Test: EC50  
 Duration: 24 h  
 Result: 29 mg/l

### 12.2. Persistence and degradability

Substance	Biodegradability	Test	Result
No data available.			

### 12.3. Bioaccumulative potential

Substance	Potential bioaccumulation	LogPow	BCF
No data available.			

According to EC-Regulation 2015/830

**12.4. Mobility in soil**

No data available

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

This mixture/product does not contain any substances considered to meet the criteria classifying them as PBT and/or vPvB.

**12.6. Other adverse effects**

Nothing special

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

Product is covered by the regulations on hazardous waste.

**Waste**

**EWC code**

16 05 06\*

laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals

**Specific labelling**

laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals

**Contaminated packing**

Contaminated packaging must be disposed of similarly to the product.

**SECTION 14: Transport information**

**14.1 – 14.4**

**ADR/RID**

<b>14.1. UN number</b>	2796
<b>14.2. UN proper shipping name</b>	SULPHURIC ACID
<b>14.3. Transport hazard class(es)</b>	8
<b>14.4. Packing group</b>	II
<b>Notes</b>	-
<b>Tunnel restriction code</b>	-

**IMDG**

<b>UN-no.</b>	2796
<b>Proper Shipping Name</b>	SULPHURIC ACID
<b>Class</b>	8
<b>PG*</b>	II
<b>EmS</b>	-
<b>MP**</b>	No
<b>Hazardous constituent</b>	-

**IATA/ICAO**

<b>UN-no.</b>	2796
<b>Proper Shipping Name</b>	SULPHURIC ACID
<b>Class</b>	8
<b>PG*</b>	II

**14.5. Environmental hazards**

-

**14.6. Special precautions for user**

-

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

No data available

(\*) Packing group



According to EC-Regulation 2015/830

(\*\*) Marine pollutant

## SECTION 15: Regulatory information

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

#### Restrictions for application

Only for professional users

#### Demands for specific education

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#### Additional information

Not applicable

#### Seveso

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#### Sources

The Control of Substances Hazardous to Health Regulations 2002. SI 2002/2677. The Stationery Office, 2002.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (CLP).

Regulation (EC) 1907/2006 (REACH).

### 15.2. Chemical safety assessment

No

## SECTION 16: Other information

### Full text of H-phrases as mentioned in section 3

H314 - Causes severe skin burns and eye damage.

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

H335 - May cause respiratory irritation.

### The full text of identified uses as mentioned in section 1

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### Additional label elements

Not applicable

### Other

In accordance with Regulation (EC) No. 1272/2008 (CLP) the evaluation of the classification of the mixture is based on:

The classification of the mixture in regard of health hazards are in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP)

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a blue triangle.

### The safety data sheet is validated by

Admin

### Date of last essential change (First cipher in SDS version)

2018-06-25(6.0)

### Date of last minor change (Last cipher in SDS version)

2018-06-25



According to EC-Regulation 2015/830



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