

## Material Safety Data Sheet According to 91/155 EEC

Reviewed on 21.02.2005

### \* 1 Identification of substance:

· **Product details:** Reagent for water analysis

· **Product name:** Vario Sulfa 4 F10

· **Catalog number:** 251 413      **Model:** SO4-1 TP

· **Supplier:**

WTW Wissenschaftlich-Technische Werkstätten GmbH

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· **Emergency information:**



Poison Center Berlin, Germany

Tel.: +49(0)30 19240

### \* 2 Composition/Data on components:

· **Description:** Mixture of the substances listed below with harmless additions.

· **Dangerous components:**

CAS: 77-92-9 EINECS: 201-069-1	citric acid	 Xi; R 36	50-60%
CAS: 10326-27-9 EINECS: 233-788-1 EC Number: 056-004-00-8	barium chloride dihydrate	 T; R 20-25	40-45%

· **Additional information** For the wording of the listed risk phrases refer to section 16.

### \* 3 Hazards identification

· **Hazard designation:**



T Toxic

· **Information pertaining to particular dangers for man and environment**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

R 20 Harmful by inhalation.

R 25 Toxic if swallowed.

R 36 Irritating to eyes.

· **Classification system**

The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

# Material Safety Data Sheet

## According to 91/155 EEC

Reviewed on 21.02.2005

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**Product name: Vario Sulfa 4 F10**

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(Contd. of page 1)

### \* 4 First aid measures

**· General information**

Instantly remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

In case of irregular breathing or respiratory arrest provide artificial respiration.

**· After inhalation**

Take affected persons into the open air and position comfortably

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness bring patient into stable side position for transport.

**· After skin contact** Instantly wash with water and soap and rinse thoroughly.**· After eye contact**

Rinse opened eye for several minutes under running water.

Call a doctor immediately.

**· After swallowing**

Drink copious amounts of water and provide fresh air. Instantly call for doctor.

Induce vomiting.

**· The following symptoms may occur:**

after inhalation:

breathing difficulty

coughing

mucous membrane irritation

after swallowing:

Dizziness

sickness

vomiting

diarrhoea

headache

pain

**· Danger**

Danger of system failure.

Danger of disturbed cardiac rhythm.

### \* 5 Fire fighting measures

**· Suitable extinguishing agents**

Water

Foam

Fire-extinguishing powder

Use fire fighting measures that suit the environment.

**· Special hazards caused by the material, its products of combustion or resulting gases:**

Formation of toxic gases is possible during heating or in case of fire.

Carbon monoxide and carbon dioxide

Hydrogen chloride (HCl)

**· Protective equipment:**

Wear full protective suit.

Wear self-contained breathing apparatus.

**· Additional information**

Ambient fire may liberate hazardous vapours.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Collect contaminated fire fighting water separately. It must not enter drains.

### \* 6 Accidental release measures

**· Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Avoid causing dust.

(Contd. on page 3)

# Material Safety Data Sheet

## According to 91/155 EEC

Reviewed on 21.02.2005

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**Product name: Vario Sulfa 4 F10**


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(Contd. of page 2)

- **Measures for environmental protection:** Do not allow product to reach sewage system or water bodies.
  - **Measures for cleaning/collecting:**
    - Dispose of contaminated material as waste according to item 13.
    - Ensure adequate ventilation.
    - Collect mechanically.
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### \* 7 Handling and storage

- **Handling**
  - **Information for safe handling:**
    - Thorough dedusting.
    - Open and handle container with care.
  - **Information about protection against explosions and fires:** Protect from heat.
  - **Storage**
  - **Requirements to be met by storerooms and containers:** Store in cool location.
  - **Information about storage in one common storage facility:** Store away from metals.
  - **Further information about storage conditions:**
    - Keep container tightly sealed.
    - Store under dry conditions.
    - Protect from humidity and keep away from water.
    - Protect from the effects of light.
  - **Storage class** Not required.
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### \* 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

- **Components with limit values that require monitoring at the workplace:**

#### 10326-27-9 barium chloride dihydrate

OES (Great Britain)	Long-term value: 0.5 mg/m <sup>3</sup> (as Ba), ILV
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- **Additional information:** The lists that were valid during the compilation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures**
  - Keep away from foodstuffs, beverages and food.
  - Take off immediately all contaminated clothing
  - Wash hands during breaks and at the end of the work.
  - Avoid contact with the eyes and skin.
- **Breathing equipment:**
  - In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.
- **Recommended filter device for short term use:** Filter P3
- **Protection of hands:**
  - Only use chemical-protective gloves with CE-labelling of category III.
  - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  - After use of gloves apply skin-cleaning agents and skin cosmetics.
- **Material of gloves**
  - nitrile rubber, NBR
  - Recommended thickness of the material:  $\geq 0.11$  mm
  - The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material**
  - Value for the permeation: Level  $\geq 6$  (480 min)
  - The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

(Contd. on page 4)

# Material Safety Data Sheet

## According to 91/155 EEC

Reviewed on 21.02.2005

Product name: Vario Sulfa 4 F10

(Contd. of page 3)

- **Eye protection:** Tightly sealed safety glasses.
- **Body protection:** Protective work clothing.

### \* 9 Physical and chemical properties:

· <b>Form:</b>	Powder
· <b>Colour:</b>	White
· <b>Odour:</b>	Odourless
· <b>Melting point/Melting range:</b>	Not determined
· <b>Boiling point/Boiling range:</b>	345°C
· <b>Flash point:</b>	Not applicable
· <b>Ignition temperature:</b>	345°C
· <b>Self-inflammability:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product is not explosive.
· <b>Density at 20°C</b>	2.6 g/cm <sup>3</sup>
· <b>Solubility in / Miscibility with Water:</b>	Soluble
· <b>pH-value (12.2 g/l) at 20°C:</b>	2.3
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
· <b>Solids content:</b>	100.0 %

### \* 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Materials to be avoided:**
  - oxidizing agents
  - alkalis
  - acids
  - metals
  - halogen compounds
  - reducing agents
  - furan-2-percarbonic acid
- **Dangerous products of decomposition:** see chapter 5

### \* 11 Toxicological information

- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

#### · LD/LC50 values that are relevant for classification:

##### 77-92-9 citric acid

Oral	LD50	3000 mg/kg (rat)
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##### 10326-27-9 barium chloride dihydrate

Oral	LD50	118 mg/kg (rat)
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- **Primary irritant effect:**
  - **on the skin:** Irritant to skin and mucous membranes.
  - **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:** No sensitizing effect known.

(Contd. on page 5)

# Material Safety Data Sheet

## According to 91/155 EEC

Reviewed on 21.02.2005

**Product name: Vario Sulfa 4 F10**

(Contd. of page 4)

**· Experience with humans:**

- Can cause liver damages.
- Can cause kidney damages.

**· Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:

- Toxic
- Harmful
- Irritant

**\*12 Ecological information:**
**· Information about elimination (persistence and degradability):**
**· Other information:**

Quantitative data on the ecological effect of this product are not available.  
CAS: 77-92-9 Citric acid: 98% / 2 d

**· Behaviour in environmental systems:**
**77-92-9 citric acid**

log P(o/w)	-1.72 (20°C) (.)
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**10326-27-9 barium chloride dihydrate**

log P(o/w)	0.85 (.)
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**· Ecotoxicological effects:**
**· Aquatic toxicity:**
**77-92-9 citric acid**

LC50	440-760 mg/l/96h (Leuciscus idus)
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**10326-27-9 barium chloride dihydrate**

EC50	21.9 mg/l/48h (Daphnia magna)
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LC50	870 mg/l/48h (Leuciscus idus)
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**· Remark:**

Reacts with water to form toxic decomposition products.

lethal for fish:

Ba > 158 mg/l

**· Algal toxicity:**

Toxic for aquatic organisms

Ba: Sc. quadricauda > 34 mg/l

**· Additional ecological information:**
**· CSB-value:**
**77-92-9 citric acid**

COD	0.728 g/g (.)
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**· BSB5-value:**
**77-92-9 citric acid**

BSB5	0.526 g/g (.)
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**· General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralized.

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

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(Contd. on page 6)

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**Product name: Vario Sulfa 4 F10**


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(Contd. of page 5)

### \* 13 Disposal considerations

- **Product:**
- **Recommendation** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

<b>· European waste catalogue</b>	
16 05 06	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals

- **Uncleaned packagings:**
  - **Recommendation:** Disposal must be made according to official regulations.
  - **Recommended cleaning agent:** Water, if necessary with cleaning agent.
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### \* 14 Transport information

· ADR/GGVSE:	UN 3316 CHEMIE-TESTSATZ, 9, II
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· IMDG/GGVSee:	UN 3316 CHEMICAL KIT, 9, II
· EMS-Number:	F-A S-P

· ICAO/IATA:	CHEMICAL KIT, 9, UN 3316, II
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### \* 15 Regulatory information

- **Designation according to EC guidelines:**  
The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)
- **Code letter and hazard designation of product:**  
T Toxic

(Contd. on page 7)

# Material Safety Data Sheet

## According to 91/155 EEC

Reviewed on 21.02.2005

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**Product name: Vario Sulfa 4 F10**

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(Contd. of page 6)

**· Hazard-determining components of labelling:**

barium chloride dihydrate

**· Risk phrases:**

20 Harmful by inhalation.

25 Toxic if swallowed.

36 Irritating to eyes.

**· Safety phrases:**

9 Keep container in a well-ventilated place.

20 When using do not eat or drink.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

36 Wear suitable protective clothing.

45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

60 This material and its container must be disposed of as hazardous waste.

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**\* 16 Other information**

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**· Relevant R-phrases**

20 Harmful by inhalation.

25 Toxic if swallowed.

36 Irritating to eyes.

**· Department issuing data specification sheet:** Department TSS, Dr. Manfred Kaul**· Data compared to the previous version altered.**

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