



# Material Safety Data Sheet

## According to 91/155 EEC

Reviewed on 24.02.2005

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**Product name: Silica LR Set (Molybdate 3 Reagent Solution)**

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Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.

**· 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.**· The following symptoms may occur:**

after inhalation:

damage to the affected mucous membranes

after swallowing:

sickness

vomiting

diarrhoea

pain

coughing

breathing difficulty

**· Danger** Danger of gastric perforation.**· Treatment** Subsequent observation for pneumonia and pulmonary oedema

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**\* 5 Fire fighting measures****· Suitable extinguishing agents**

Use fire fighting measures that suit the environment.

CO<sub>2</sub>, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

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

Development of hazardous combustion gases or vapours possible in the event of fire.

nitrous gases

Sulphur oxides (SO<sub>x</sub>)

**· Protective equipment:**

Wear self-contained breathing apparatus.

Wear full protective suit.

**· 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.

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**\* 6 Accidental release measures****· Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

**· 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.

Neutralize with diluted sodium hydroxide solution or by throwing on lime sand, lime or sodium carbonate.

Absorb with liquid-binding material (sand, diatomite, universal binders).

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**\* 7 Handling and storage****· Handling****· Information for safe handling:**

Ensure good ventilation/exhaustion at the workplace.

Open and handle container with care.

Prevent formation of aerosols.

Use only in well ventilated areas.

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**Product name: Silica LR Set ( Molybdate 3 Reagent Solution)**

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- **Information about protection against explosions and fires:** The product is not flammable
- **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.
  - This product is hygroscopic.
  - Protect from the effects of light.
- **Storage class** Not required.

### \* 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:**
  - The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **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.
  - Do not inhale gases / fumes / aerosols.
  - Avoid contact with the eyes and skin.
  - Do not eat, drink or smoke while working.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P2
- **Protection of hands:**
  - Acid resistant gloves
  - 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.
  - Preventive skin protection by use of skin-protecting agents is recommended.
  - After use of gloves apply skin-cleaning agents and skin cosmetics.
- **Material of gloves**
  - Nitrile
  - nitrile rubber, NBR
  - 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.
  - Recommended thickness of the material:  $\geq 0.11$  mm
- **Penetration time of glove material**
  - The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
  - Value for the permeation: Level  $\geq 6$  (480 min)
- **Eye protection:** Tightly sealed safety glasses.
- **Body protection:** Acid resistant protective clothing

### \* 9 Physical and chemical properties:

- |  |            |
|--|------------|
| · <b>Form:</b>                                       | Fluid      |
| · <b>Colour:</b>                                     | Colourless |
| · <b>Odour:</b>                                      | Odourless  |
| · <b>Melting point/Melting range:</b> Not determined |            |

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· <b>Boiling point/Boiling range:</b>	100°C
· <b>Flash point:</b>	Not applicable
· <b>Self-inflammability:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product is not explosive.
· <b>Density at 20°C</b>	1.23 g/cm <sup>3</sup>
· <b>Solubility in / Miscibility with Water:</b>	Fully miscible
· <b>pH-value at 20°C:</b>	1.2
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	> 70 %
· <b>Solids content:</b>	< 12 %

### \* 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Materials to be avoided:**
  - ammonia
  - alkalis
  - acids
  - metals
  - halogen compounds
  - combustible substances
  - organic solvents
  - nitriles
  - peroxides
- **Dangerous reactions**
  - Corrosive action on metals
  - When diluting, always add acid to water, never vice versa
  - Reacts with metals forming hydrogen
  - > Explosive
  - Reacts with organic substances
  - Diluting or dissolving in water always causes rapid heating
- **Dangerous products of decomposition:**
  - nitrous gases
  - Sulphur oxides (SO<sub>x</sub>)
  - see chapter 5

### \* 11 Toxicological information

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

· <b>LD/LC50 values that are relevant for classification:</b>		
<b>7664-93-9 sulphuric acid</b>		
Oral	LD50	2140 (25%) mg/kg (rat)
Inhalative	LC 50	510 (pure) mg/m <sup>3</sup> /2h (rat)
<b>10102-40-6 sodium molybdate</b>		
Oral	LD50	4233 mg/kg (rat)
Dermal	LD50	> 2000 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** Strong caustic effect on skin and mucous membranes.

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- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effect known.
- **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:  
Corrosive  
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

### \* 12 Ecological information:

- **Information about elimination (persistence and degradability):**
- **Other information:**  
Quantitative data on the ecological effect of this product are not available.  
Methods for the determination of biodegradability are not applicable to inorganic substances.
- **Ecotoxicological effects:**

· <b>Aquatic toxicity:</b>	
<b>7664-93-9 sulphuric acid</b>	
Daphnia EC50	29 mg/l/24h (Daphnia magna)
<b>10102-40-6 sodium molybdate</b>	
EC50	330 mg/l/48h (Daphnia magna)
LC50	7600 mg/l/96h (Onchorhynchus mykiss)

- **Remark:**  
Forms corrosive mixtures with water even if diluted.  
Toxic for algae
- **Algal toxicity:** CAS-No. 10102-40-6: Selenastrum capricornutum IC50: > 100 mg/l/72 h
- **Bacterial toxicity:** CAS-No. 10102-40-6: Pseudomonas putida EC10: 50 mg/l/18 h
- **Remark:** neutralization possible
- **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.

### \* 13 Disposal considerations

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

· <b>European waste catalogue</b>	
16 05 07	discarded inorganic chemicals consisting of or containing dangerous substances

- **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

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

· ICAO/IATA: CHEMICAL KIT, 9, UN 3316, II

### \*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:**

C Corrosive

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

sulphuric acid

· **Risk phrases:**

35 Causes severe burns.

· **Safety phrases:**

20 When using do not eat or drink.

23 Do not breathe fumes/aerosol.

25 Avoid contact with eyes.

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

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

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

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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**

35 Causes severe burns.

· **Department issuing data specification sheet:** Department TSS, Dr. Manfred Kaul

· **Data compared to the previous version altered.**

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