

# Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 814302

Molybdato-phosphoric acid spr.

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Printing date: 02.06.2020

Date of issue: 14.09.2018

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

### 1.1 Product identifier

REF 814302  
Product name Molybdato-phosphoric acid spr.

REACH Registration number(s): see SECTION 3.1/3.2 or  
A registration number for the substance(s) does not exist because the annual tonnage does not require registration or the substance or its use is excluded from registration.

1 x 100 mL Molybdato-phosphoric acid spray reagent

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

#### Relevant identified uses

Product for analytical use.

Exposure Scenario Classification according REACH, RIP 3.2 Codes: SU 0-2, PC 21, PROC 15, AC 0  
The exposure scenario is integrated into sections 1-16.

#### Uses advised against

not described

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

#### Manufactured by:

MACHEREY-NAGEL GmbH & Co. KG  
Neumann-Neander-Str. 6-8, 52355 Dueren, GERMANY  
Tel.: +49 2421 969 0

E-mail: [sds@mn-net.com](mailto:sds@mn-net.com) ([msds@mn-net.com](mailto:msds@mn-net.com))

### 1.4 Emergency telephone number

Outside Germany (DE): Call your regional Poisons Information Service or call local Life Saving Service.  
DE: Gemeinsames Giftinformationszentrum (GGIZ) 99089 Erfurt tel. +49 361 730 730

You find our current versions of SDS (22 languages) in Internet:

<http://www.mn-net.com/SDS>

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

100 mL Molybdato-phosphoric acid spray reagent



GHS02 GHS05 GHS07

Signal word

DANGER

#### Hazard identification

H225  
H315, EUH066  
H318

#### Hazard classes/categories

Flam. Liq. 2  
Skin Irrit. 2  
Eye Dam. 1

### 2.2 Label elements

According CLP directive inner packages must be only labelled with GHS symbol(s) and product identifier(s) (EU 1272/2008 Annex I - 1.5.1.2).

Harmful chemicals/mixtures with signal word: **WARNING** and highly flammable chemicals/mixtures must not be labelled with H and P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).

**100 mL Molybdato-phosphoric acid spray reagent**

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GHS02 GHS05 GHS07

Signal word: DANGER

H318  
Causes serious eye damage.

P280sh, P305+351+338, P310  
Wear protective gloves/eye protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

## 2.3 Other hazards

### Possible hazards from physicochemical properties

Generally in the case of pH values are less than 2 or higher than 11.5 then it is corrosive. In the case of pH values are less than 5 or higher than 9 then it is irritant. Flammable properties. ---

### Information pertaining to particular risks to human and possible symptoms

Causes varying degrees of acid burns on the skin, to the eyes and to the mucous membranes and wounds which do not heal quickly depending on the concentration, temperature and the exposure time. Vapours especially which steam from hot liquids and mist can have a severe irritant effect upon the eyes and the respiratory organs.

### Information pertaining to particular risks to the environment

PBT: not applicable

vPvB: not applicable

Other hazards

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances or 3.2 Mixtures

#### 100 mL Molybdato-phosphoric acid spray reagent

|                 |  |          |            |
|-----------------|--|----------|------------|
| Chemical:       | <i>molybdato-phosphoric acid</i>   | CAS No.: | 51429-74-4 |
| Classification: | H272, Ox. Liq. 2, H314, Skin Corr. 1B  |          |            |
| Formula:        | H <sub>3</sub> [P(Mo <sub>3</sub> O <sub>10</sub> ) <sub>4</sub> ] <sub>x</sub> H <sub>2</sub> O |          |            |
| Pseudonym:      | Phosphomolybdic acid   |          |            |
| TSCA Inventory: | listed (CAS 11104-88-4)  |          |            |
| EC No.:         | 234-713-5  | MFCD:    | 00149913   |
| KE No.:         | not listed   |          |            |
| Concentration:  | 3 - <5 %   |          |            |
| acc. CLP (GHS): | H315, Skin Irrit. 2, H318, Eye Dam. 1  |          |            |

|                 |   |             |              |
|-----------------|---|-------------|--------------|
| Chemical:       | <i>ethanol</i>  | CAS No.:    | 64-17-5      |
|                 | (denatured with 1%IPA/1%MEK, acc.2016/1867/EU)                    |             |              |
| Classification: | H225, Flam. Liq. 2  |             |              |
| Formula:        | C <sub>2</sub> H <sub>6</sub> O; C <sub>2</sub> H <sub>5</sub> OH |             |              |
| Pseudonym:      | ethyl alcohol, methylated spirit                                  |             |              |
| TSCA Inventory: | listed  |             |              |
| REACH Reg. No.: | 01-2119457610-43-xxxx   |             |              |
| EC No.:         | 200-578-6   | Indice No.: | 603-002-00-5 |
| RTECS:          | KQ6300000   | MFCD:       | 00003568     |
| KE No.:         | KE-13217  |             |              |
| Concentration:  | 90 - <98 %  |             |              |
| acc. CLP (GHS): | H225, Flam. Liq. 2  |             |              |

### 3.3 Remarks

When not listed, mixtures are added with water [CAS No. 7732-18-5] to 100%.

List of H and P phrases: see section 16.1

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## SECTION 4: First aid measures

### 4.1 Description of first aid measures

Place insured person out of danger zone to fresh air immediately. Ensure quiet, warmth, and provide resuscitation if necessary. If necessary contact medical advice. Remove contaminated clothing. Show product package, packing insert and this material safety data sheet to the doctor.

#### 4.1.1 After SKIN Contact

Remove contaminated clothing. Rinse the affected skin or mucous membrane thoroughly under running water. (If possible) use soap.

#### 4.1.2 After EYE Contact

After contact with the eyes rinse thoroughly under running water with the eyelid wide open for min. 10 minutes with eye washing bottle, eye douche or running water (protect intact eye). Before (if possible) apply eye drops Proxymetacaine 0.5%, if the opening the eyelid convulsion is painful. Further treatment to be carried out by an eye specialist.

#### 4.1.3 After INHALATION of vapours

After inhalation of foam or vapour fresh air should be inhaled. Keep airways free. ---

#### 4.1.4 After ORAL Intake

After oral intake lots of water should be drunk after it has been ingested. ---

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

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

After EYE CONTACT rinse immediately with plenty of water for a long time. Eyelid convulsion measures. Name the corrosive chemical. Further treatment must to be carried out by an eye specialist. ---

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area. All extinguishers like FOAM, WATER SPRAY, DRY POWDER, CARBON DIOXIDE can be used.

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

DANGER: Highly flammable (GHS regulation). Forms explosive vapour-air mixtures. Formation of hazardous and caustic vapour-air mixtures possible. ---

### 5.3 Advice for firefighters

No, for listed product. Product package burns like paper or plastic.

### 5.4 Additional information

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## SECTION 6: Accidental release measures

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

Do not breathe vapours. Wear eye protection, respectively face protection. Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions. Restrictions on activity must be observed.

### 6.2 Environmental precautions

not necessary

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

Bind any escaping liquid with inert absorbent. And dispose in accordance to local regulations for the disposal of hazardous chemicals. Clean any contaminated equipment and floors with plenty of water. Collect small amounts of leaked liquid and flush with water into drains.

### 6.4 Reference to other sections

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Handling in accordance with the test instruction, that comes with the product.

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

The original product package of MACHEREY-NAGEL allows a safe storage.

Storage class (VCI): 3  
Water hazard class (DE): 2

### 7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage. Use inbreakable container for transport of glass bottles.

### 7.3 Specific end use(s)

Product for analytical use.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### 100 mL Molybdatophosphoric acid spray reagent

Chemical: *molybdatophosphoric acid* CAS No.: 51429-74-4

TRGS 900 (DE): [Mo] 5 E mg/m<sup>3</sup>  
A/a aveoles passing, E/e respirable, G total

Short-term exposure factor: 4  
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: [Mo] 5 e mg/m<sup>3</sup>

Chemical: *ethanol* CAS No.: 64-17-5

DNEL: [derm] 343 mg/kg; [inh] 950 mg/m<sup>3</sup>  
DNEL = Derived No-Effect Level (for workers)

PNEC<sub>(fresh water)</sub>: 0.96 mg/L  
PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 200 mL/m<sup>3</sup> / 380 mg/m<sup>3</sup>  
A/a aveoles passing, E/e respirable, G total

Short-term exposure factor: 4 (II), Y  
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 500 ppm / 960 mg/m<sup>3</sup>

NIOSH: [TWA] 1000 ppm / 1900 mg/m<sup>3</sup>  
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: [TWA] 1000 ppm / 1900 mg/m<sup>3</sup>

### 8.2 Exposure controls

The highest level of cleanliness must be maintained at the workplace.

#### 8.2.1 Respiratory protection

No additional recommendations.

#### 8.2.2 Hand protection

Yes, gloves according EN 374 (permeation time >30 min - level 2), consist of PVC (f.ex. from Ansell or KCL). Use for short times chemical resistant latex or nitril gloves with code EN 374-3 level 1.

#### 8.2.3 Eye protection

Yes, safety glasses according EN 166 with integrated side shields or wrap-around protection or face protection.

#### 8.2.4 Skin protection

Recommended to avoid contamination with these hazards.

#### 8.2.5 Personal hygiene

Eating, drinking, smoking, taking snuff and storage of food in work areas and at outdoor workplaces is prohibited. Avoid contact with the skin, eyes and clothing. Rinse any clothing on which the substance has been spilled, and soak it in water. Wash hands thoroughly with soap and water when stopping work and before eating, and then apply protective skin cream.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### 100 mL Molybdato-phosphoric acid spray reagent

|                         |                             |                 |
|-------------------------|-----------------------------|-----------------|
| Appearance: liquid      | Colour: colourless          | Odor: alcoholic |
| Odor limit:             | 19-93 mg/m <sup>3</sup>     |                 |
| pH:                     | 7                           |                 |
| Melting point:          | -114 °C                     |                 |
| Boiling point:          | 78 °C                       |                 |
| Flash point:            | 12 °C                       |                 |
| Explosion limits:       | 3.2-15 Vol%                 |                 |
| Vapour pressure (20°C): | 59 hPa                      |                 |
| Vapour density (air=1): | 1,59                        |                 |
| Specific gravity:       | 0,79-0,86 g/cm <sup>3</sup> |                 |
| Solubility in water:    | 0-100 %                     |                 |
| Flashing temperature:   | 425 °C                      |                 |
| Volatiles by volume:    | 112 g/m <sup>3</sup>        |                 |

### 9.2 Other information

Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required.

#### Relevant Properties of Substance Group

Substances are very volatile and form flammable vapour-air mixtures. ---

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

no further data available.

### 10.2 Chemical stability

No known instability.

### 10.3 Possibility of hazardous reactions

No further data available.

### 10.4 Conditions to avoid

Not necessary. ---

### 10.5 Incompatible materials

Avoid contact with strong acids or alkalines.

### 10.6 Hazardous decomposition products

In the original package all parts/all reagents are safety and separated stored. Decompositions are not observed during the expiration period under recommended conditions.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Following information is valid for pure substances. Quantitative data on the toxicity of this product are not available.

#### 100 mL Molybdato-phosphoric acid spray reagent

|                             |                                   |                     |
|-----------------------------|-----------------------------------|---------------------|
| Chemical:                   | <i>molybdato-phosphoric acid</i>  | CAS No.: 51429-74-4 |
| TSCA Inventory:             | listed (CAS 11104-88-4)           |                     |
| Target Organs:              | affect the eye or visual capacity |                     |
| Symptoms:                   | conjunctivitis; corneal damage    |                     |
| Japan ISHL:                 | listed ≥1,0%/≥0,1%,               |                     |
| Korea Exist.Chem.Inventory: | not listed                        |                     |

|                   |   |  |
|-------------------|---|--|
| Chemical:         | <i>ethanol</i>  | CAS No.: 64-17-5                           |
| TSCA Inventory:   | listed  | California Proposition 65 List: not listed |
| ACGIH:            | 1000 ppm  |  |
| Exposure Routes:  | inhalation, ingestion, skin and/or eye contact  |  |
| Target Organs:    | Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system             |  |
| Symptoms:         | irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough; |  |
|                   | liver damage; anemia; reproductive, teratogenic   |  |
| Australia NICNAS: | not listed  | Canada CEPA 1999: DSL yes                  |
| Japan CSCL/PRTR:  | not listed, Japan PDSCL: not listed   |  |

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|                              |  |
|------------------------------|--|
| Japan ISHL:                  | listed $\geq 0,1\%$ / $\geq 0,1\%$ , Article 57-2 (SDS required) |
| South Korea TCCA:            | not listed   |
| Korea Exist.Chem.Inventory:  | KE-13217   |
| LD50 <sub>orl rat</sub> :    | 6200 mg/kg   |
| LC <sub>Lowihl gpg</sub> :   | 21.9 g/m <sup>3</sup>  |
| LC <sub>Loworl hmn</sub> :   | 1400 mg/kg   |
| LC50 <sub>ihl mouse</sub> :  | [4h] 39 g/m <sup>3</sup>   |
| LC50 <sub>ihl rat</sub> :    | [10h] 20 g/m <sup>3</sup>  |
| LD50 <sub>drm rbt</sub> :    | 20 000 mg/kg   |
| LD50 <sub>oral mouse</sub> : | 3450 mg/kg   |
| TRGS 905 (DE):               | K5, M5, R <sub>F</sub> C   |

## SECTION 12: Ecological information

### 12.1 Toxicity

Following information is valid for pure substances.

#### 100 mL Molybdatophosphoric acid spray reagent

|                          |                                 |                     |
|--------------------------|---------------------------------|---------------------|
| Chemical:                | <i>molybdatophosphoric acid</i> | CAS No.: 51429-74-4 |
| Water hazard class (DE): | 2                               |                     |
| Storage class (VCI):     | 8 B                             |                     |

|   |                    |                  |
|---|--------------------|------------------|
| Chemical:   | <i>ethanol</i>     | CAS No.: 64-17-5 |
| PNEC <sub>(fresh water)</sub> :                     | 0.96 mg/L          |                  |
| PNEC = Predicted No Effect Concentration            |                    |                  |
| LC50 <sub>daphnia magna/48h</sub> :                 | >100 mg/L          |                  |
| LC50 <sub>pimephales promelas/96h</sub> :           | 13400 - 15100 mg/L |                  |
| LC50 <sub>leuciscus idus/96h</sub> :                | [48h] 8140 mg/L    |                  |
| LC50 <sub>fish/96h</sub> :                          | 13 g/L             |                  |
| EC50 <sub>daphnia/48h</sub> :                       | 9.3-14.2 g/L       |                  |
| IC50 <sub>scenedesmus quadricauda/72h</sub> :       | [7d] 5000 mg/L     |                  |
| EC10 <sub>pseudomonas putita/16h</sub> :            | [EC5] 6500 mg/L    |                  |
| Water hazard class (DE):                            | 1                  | WGK No.: 0096    |
| Dispersion coefficient <sub>(octanol-water)</sub> : | -0.31              |                  |
| Storage class (VCI):                                | 3                  |                  |

### 12.2 Persistence and degradability

not necessary

### 12.3 Bioaccumulative potential

not necessary

### 12.4 Mobility in soil

not necessary

### 12.5 Results of PBT and vPvB assessment

no data available

### 12.6 Other adverse effects

no additional data available

## SECTION 13: Disposal considerations

Please observe local regulations for collection and disposal of hazardous waste and contact waste disposal company, where you will obtain information on laboratory waste disposal (waste code number 16 05 06).

### 13.1 Waste treatment methods

Normally it is possible to empty small amounts (diluted!) into drains. Empty containers of corrosive reagents prior to disposal, rinse with water.

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## SECTION 14: Transport information

14.1. UN number: 3316 14.2. UN proper shipping name: Chemical Kit

14.3. Class: 9 14.4. Packing group: II

### Road transport

Classification code: M11 Tunnel restriction code: E

Limited Quantity: acc. ADR 3.3.1/251: see LQ in Alternative declaration for transportation

### Air transport

PAX: 960 max. weight PAX: 10 KG

CAO: 960 max. weight CAO: 10 KG

### Maritime transport

EmS: F-A, S-P Storage category: A

Or use **Alternative declaration for transportation:**

14.1 UN number: 1993 14.2 UN proper shipping name: Flammable liquid, n.o.s. (ethanol mixture)

14.3 Class: 3 14.4 Packing group: II

### Road transport

Classification code: F1 Tunnel restriction code: E

Limited Quantity: 1 L Special instructions: 640C

Excepted Quantity: E 2

### Air transport

PAX: 353 max. weight PAX: 5 L

CAO: 364 max. weight CAO: 60 L

### Maritime transport

EmS: F-E, S-E Storage category: B

## 14.5 Environmental hazards

none, contains only small quantities of hazardous substances

## 14.6 Special precautions for user

not necessary

## 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

not applicable

## SECTION 15: Regulatory information

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

German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on August 2013  
 German order governing protection from hazardous substances (Ordinance on Hazardous Substances / Gefahrstoffverordnung - GefStoffV), revised on November 2010, according to Directive 98/24/EC  
 TRGS 200, German engineering rules governing the classification and labelling of hazardous substances, preparations and products, updated October 2011  
 MN Leaflet/User manual, also see [www.mn-net.com](http://www.mn-net.com)  
 Look for your country-specific regulations.

### 15.2 Chemical safety assessment

not necessary for these small amounts ---

## SECTION 16: Other information

### 16.1 List of H and P phrases

#### 16.1.1 List of relevant H phrases

H225 Highly flammable liquid and vapour.  
 H315 Causes skin irritation.  
 H318 Causes serious eye damage.

#### 16.1.2 List of relevant P phrases

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
 P233 Keep container tightly closed.  
 P280sh Wear protective gloves/eye protection.  
 P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P310 Immediately call a POISON CENTER/doctor.

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## 16.2 Training advice

Multiple safety training of staffs about danger and protection by using hazards in working area. Additionally training and introduction of staffs for using these products.

## 16.3 Recommended restriction on use

Only for professional user.

Look about employee restrictions for young people (f. ex. 94/33/EC or DE § 22 JArbSchG)!

Look about employee restrictions for pregnant women and nursing women (f.ex. 92/85/EEC or for DE §§ 11-13 MuSchG 2017)!

An individual package of this product or test kit has a moderate hazardous potential.

## 16.4 Further information

MACHEREY-NAGEL GmbH & Co. KG provides the information contained herein in good faith being up-to-date of own realizations at revision time. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose.

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## 16.5 Sources of key data

Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS

Regulation 487/2013/EU, 4<sup>th</sup> adaptation of CLP regulation to technical and scientific progress

Regulation 669/2018/EU, 4<sup>th</sup> adaptation of CLP regulation to technical and scientific progress

Regulation 1480/2018/EU, 4<sup>th</sup> adaptation of CLP regulation to technical and scientific progress

TRGS 900, German engineering rules governing limits in air at work, updated 03/2019

SUVA .CH, Limits in air at work 2009, revised on 01.2009

KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)

### Revisions/Updates

Reason for Revision: 2016-03 Adaptation of regulation 1221/2015/EU

2017-08 Adaption of new ethanol denaturation 2016/1867/EU