## Safety Data Sheet

according to UK REACH Regulation

## Phosphomolybdic Acid - Orange G (B)

Revision date: 12.04.2024
Product code: 11548.xxxxx

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

### 1.1. Product identifier

Phosphomolybdic Acid - Orange G (B)
UFI: 9FY0-11GM-0007-QMM3
1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture
Use as laboratory reagent. The product is intended for research, analysis and scientific education.
Uses advised against
Any non-intended use.
1.3. Details of the supplier of the safety data sheet

Company name:
Street:
Place:
Telephone:
E-mail:
Contact person:
E-mail: gefahrstoffmanagement@morphisto.de
Internet:
1.4. Emergency telephone number:

MORPHISTO GmbH
Schumannstr. 142/144
D-63069 Offenbach
+49 (0) 69 / 400 3019-60
info@morphisto.de
Morphisto GmbH
http://www.morphisto.de
Poison Information Center Mainz, Germany, Tel: +49(0)6131/19240

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

GB CLP Regulation
Skin Corr. 1; H314
Eye Dam. 1; H318
Full text of hazard statements: see SECTION 16.
The mixture was classified as corrosive precautionary due to an extreme pH -value.

### 2.2. Label elements

GB CLP Regulation
Hazard components for labelling
Molybdophosphoric acid hydrate
Signal word: Danger
Pictograms:


## Hazard statements

H314 Causes severe skin burns and eye damage.

Precautionary statements

| P260 | Do not breathe mist/vapours/spray. |
| :--- | :--- |
| P280 | Wear protective gloves/protective clothing and eye protection/face protection. |
| P303+P361+P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with |
|  | water or shower. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if <br> present and easy to do. Continue rinsing. |

### 2.3. Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulating and toxic (PBT) or very persistent and very bioaccumulating (vPvB) at levels of $0.1 \%$ or higher. Ecological information: The substance/mixture does not contain any components that are considered to be hazardous according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in amounts of $0.1 \%$ or more have endocrine disrupting properties. Toxicological information: The substance/mixture does not contain any components that are to be classified according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1 \% or more have endocrine disrupting properties.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

Chemical characterization
aqueous solution

## Relevant ingredients

| CAS No | Chemical name | Quantity <br>  EC No |  | Index No |
| :--- | :--- | :--- | :--- | :--- |
|  | Classification (GB CLP Regulation) |  |  |  |
| $51429-74-4$ | Molybdophosphoric acid hydrate |  |  |  |
|  | $234-713-5$ |  | $1-<5 \%$ |  |
|  | Skin Corr. 1B, Eye Dam. 1; H314 H318 |  |  |  |

Full text of H and EUH statements: see section 16.

## Specific Conc. Limits, M-factors and ATE

| CAS No | EC No | Chemical name |  |
| :--- | :--- | :--- | :---: |
|  | Specific Conc. Limits, M-factors and ATE | Quantity |  |
| $51429-74-4$ | $234-713-5$ | Molybdophosphoric acid hydrate |  |
|  | dermal: LD50 $=>2000 \mathrm{mg} / \mathrm{kg} ;$ oral: LD50 $=>2000 \mathrm{mg} / \mathrm{kg}$ | $1-<5 \%$ |  |

## Further Information

This product contains no substances of very high concern (SVHC) $(>0,1 \%)$ which are included in the Candidate List according to Article 59 of REACH.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

## General information

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
Remove contaminated, saturated clothing immediately.

## After inhalation

Provide fresh air. In case of respiratory tract irritation, consult a physician.

## After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

## After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Remove contact lenses, if present and easy to do. Continue rinsing. In case of eye irritation consult an ophthalmologist.

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## After ingestion

Observe risk of aspiration if vomiting occurs. Adverse human health effects and symptoms: Gastric perforation. Do not allow a neutralisation agent to be drunk. Rinse mouth thoroughly with water. Call a physician immediately. Do NOT induce vomiting.

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

No information available.
4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

## Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings. Carbon dioxide (CO2). Dry extinguishing powder. alcohol resistant foam. Atomized water.

Unsuitable extinguishing media
High power water jet.

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

Non-flammable. The product itself does not burn. In case of fire may be liberated: Phosphorus oxides. metal oxides.

### 5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.
Additional information
Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Co-ordinate fire-fighting measures to the fire surroundings.

## SECTION 6: Accidental release measures

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

 General adviceProvide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

### 6.2. Environmental precautions

Do not allow to enter into surface water or drains. Discharge into the environment must be avoided.
6.3. Methods and material for containment and cleaning up

## For cleaning up

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

## Other information

Clean contaminated objects and areas thoroughly observing environmental regulations.

### 6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

## Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Wear suitable protective clothing. (See section 8.)
Use extractor hood (laboratory).

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## Advice on protection against fire and explosion

Usual measures for fire prevention.

## Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff. Always close containers tightly after the removal of product.

## Further information on handling

Avoid contact with skin, eyes and clothes.
General protection and hygiene measures: See section 8.

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

## Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations.
Suitable material for Container: polyethylene. Glass.
Hints on joint storage
Do not store together with: Explosives. Oxidizing solids. Oxidizing liquids. Radioactive substances. Infectious substances. Food and animal feedingstuff
Further information on storage conditions
Keep the packing dry and well sealed to prevent contamination and absorbtion of humidity.
Recommended storage temperature: $15-25^{\circ} \mathrm{C}$
Protect against: frost. UV-radiation/sunlight. heat. Humidity

### 7.3. Specific end use(s)

Use as laboratory reagent.
SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Exposure limits (EH40)

| CAS No | Substance | ppm | $\mathrm{mg} / \mathrm{m}^{3}$ | fibres/ml | Category |
| :--- | :--- | ---: | ---: | ---: | :---: |
| - | Molybdenum compounds (as Mo), soluble <br> compounds | - | 5 |  | TWA (8 h) |
|  |  | -10 | WEL |  |  |

## Additional advice on limit values

To date, no national limits have been set.

### 8.2. Exposure controls



Appropriate engineering controls
If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Use extractor hood (laboratory).
Individual protection measures, such as personal protective equipment
Eye/face protection
Suitable eye protection: goggles. Eye glasses with side protection EN 166

## Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the
specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Wear suitable gloves.
Suitable material:
NBR (Nitrile rubber). - Thickness of glove material: $0,35 \mathrm{~mm}$
Breakthrough time >=8 h
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
Check leak tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well.

## Skin protection

Use of protective clothing. Suitable protective clothing: Lab apron.
Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500 (D).

## Respiratory protection

In case of inadequate ventilation wear respiratory protection. With correct and proper use, and under normal conditions, breathing protection is not required.
Respiratory protection necessary at: generation/formation of aerosols, exceeding exposure limit values Suitable respiratory protective equipment: particulates filter device (DIN EN 143). - Type P2/3
Details on the requirements for use and maximum concentrations can be found in the "Rules for the use of respiratory protective devices" (BGR 190). The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.
Environmental exposure controls
No special measures are necessary.

## SECTION 9: Physical and chemical properties

| 9.1. Information on basic physical and chemical properties |  |
| :--- | :--- |
| Physical state: | liquid |
| Colour: | orange |
| Odour: | characteristic |

Melting point/freezing point:
Boiling point or initial boiling point and boiling range:
Flammability:
Lower explosion limits:
Upper explosion limits:
Flash point:
Auto-ignition temperature:
Decomposition temperature:
pH -Value (at $20^{\circ} \mathrm{C}$ ):
Viscosity / kinematic:
Water solubility:
(at $20^{\circ} \mathrm{C}$ )
Solubility in other solvents not determined
Partition coefficient n-octanol/water:
Vapour pressure:
(at $20^{\circ} \mathrm{C}$ )
Density (at $20^{\circ} \mathrm{C}$ ):
Relative vapour density:
Particle characteristics:

$$
\sim 0^{\circ} \mathrm{C}
$$

$$
100^{\circ} \mathrm{C}
$$

not determined not determined not determined not determined not determined not determined 1-2
not determined miscible. not determined 23 hPa
$1,02 \mathrm{~g} / \mathrm{cm}^{3}$ not determined not applicable

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### 9.2. Other information

Information with regard to physical hazard classes
Explosive properties
The product is not: Explosive.
Sustaining combustion: Not sustaining combustion
Oxidizing properties none
Other safety characteristics
Solid content: not determined
Sublimation point: not determined
Softening point: not determined
Pour
Viscosity / dynamic: not determined

Flow time: not determined not determined

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No information available.

### 10.2. Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

### 10.3. Possibility of hazardous reactions

Exothermic reaction with: Base, Peroxides, Oxidizing agent. No information available.

### 10.4. Conditions to avoid

Keep away from heat. Protect from moisture.

### 10.5. Incompatible materials

Keep away from: Base, Oxidizing agent, Peroxides. Materials to avoid: Oxidizing agents, strong. Reducing agents, strong. Substances that form flammable gases when in contact with water.

### 10.6. Hazardous decomposition products

In case of fire may be liberated: Phosphorus oxides. metal oxides.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in GB CLP Regulation

Acute toxicity
Based on available data, the classification criteria are not met.

## ATEmix calculated

ATE (oral) $>2000 \mathrm{mg} / \mathrm{kg}$; ATE (dermal) $>2000 \mathrm{mg} / \mathrm{kg}$; ATE (inhalation vapour) $>20 \mathrm{mg} / \mathrm{l}$; ATE (inhalation dust/mist) $>5 \mathrm{mg} / \mathrm{l}$

| CAS No | Chemical name |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Exposure route | Dose |  | Species | Source | Method |
| 51429-74-4 | Molybdophosphoric acid hydrate |  |  |  |  |  |
|  | oral | $\begin{array}{\|l\|l} \mathrm{LD} 50 \\ \mathrm{mg} / \mathrm{kg} \\ \hline \end{array}$ | >2000 | Rat | suppliers SDS. |  |
|  | dermal | LD50 mg/kg | >2000 | Rabbit | suppliers SDS. |  |

## Irritation and corrosivity

Skin corrosion/irritation: Causes severe skin burns and eye damage. (On basis of test data)
Serious eye damage/eye irritation: Causes serious eye damage. (On basis of test data)

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## Sensitising effects

Based on available data, the classification criteria are not met.

## Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: Based on available data, the classification criteria are not met.
STOT-single exposure
Based on available data, the classification criteria are not met.
STOT-repeated exposure
Based on available data, the classification criteria are not met.
Aspiration hazard
Based on available data, the classification criteria are not met.

### 11.2. Information on other hazards

## Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

## Other information

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

## SECTION 12: Ecological information

### 12.1. Toxicity

Based on available data, the classification criteria are not met.
12.2. Persistence and degradability

The product has not been tested.

### 12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

### 12.4. Mobility in soil

The product has not been tested.

### 12.5. Results of PBT and $v$ PvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.
12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

### 12.7. Other adverse effects

No information available.
Further information
Avoid release to the environment. Do not allow to enter into surface water or drains.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Disposal recommendations
Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.
Observe in addition any national regulations! Consult the local waste disposal expert about waste disposal.
Non-contaminated packages may be recycled.
According to (EWC) European Waste Catalogue, allocation of waste identity numbers/waste descriptions must be carried out in a specific way for every industry and process.
Control report for waste code/ waste marking according to (EWC) European Waste Catalogue:
List of Wastes Code - residues/unused products

060313 WASTES FROM INORGANIC CHEMICAL PROCESSES; wastes from the MFSU of salts and their solutions and metallic oxides; solid salts and solutions containing heavy metals; hazardous waste

## List of Wastes Code - used product

060313 WASTES FROM INORGANIC CHEMICAL PROCESSES; wastes from the MFSU of salts and their solutions and metallic oxides; solid salts and solutions containing heavy metals; hazardous waste
List of Wastes Code - contaminated packaging
150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

## Contaminated packaging

Wash with plenty of water. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

## SECTION 14: Transport information

Land transport (ADR/RID)
14.1. UN number or ID number:
14.2. UN proper shipping name:
14.3. Transport hazard class(es):
14.4. Packing group:

Inland waterways transport (ADN)
14.1. UN number or ID number:
14.2. UN proper shipping name:
14.3. Transport hazard class(es):
14.4. Packing group:

Marine transport (IMDG)
14.1. UN number or ID number:
14.2. UN proper shipping name:
14.3. Transport hazard class(es):
14.4. Packing group:

Air transport (ICAO-TI/IATA-DGR)
14.1. UN number or ID number:
14.2. UN proper shipping name:
14.3. Transport hazard class(es):
14.4. Packing group:
14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS:

No dangerous good in sense of this transport regulation. No dangerous good in sense of this transport regulation. No dangerous good in sense of this transport regulation. No dangerous good in sense of this transport regulation.

No dangerous good in sense of this transport regulation. No dangerous good in sense of this transport regulation. No dangerous good in sense of this transport regulation. No dangerous good in sense of this transport regulation.

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No dangerous good in sense of this transport regulation. No dangerous good in sense of this transport regulation. No dangerous good in sense of this transport regulation. No dangerous good in sense of this transport regulation.
14.6. Special precautions for user

Not restricted

### 14.7. Maritime transport in bulk according to IMO instruments

Not restricted

## SECTION 15: Regulatory information

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

EU regulatory information
Restrictions on use (REACH, annex XVII): Entry 3
Information according to Directive
Not subject to 2012/18/EU (SEVESO III)

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## Additional information

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].
National regulatory information
Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).
Water hazard class (D): 1 - slightly hazardous to water

### 15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

## SECTION 16: Other information

[^0]
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(Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)
EmS: Emergency Schedules
MFAG: Medical First Aid Guide
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
IBC: Intermediate Bulk Container
For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety
assessment, chapter R. 20 (Table of terms and abbreviations).
EC/EEC: European Community/European Economic Community
EU: European Union
M-factor: Multiplying factor
IATA: International Air Transport Association
DGR: Dangerous Goods Regulations
ICAO: International Civil Aviation Organization
TI: Technical Instructions
Classification for mixtures and used evaluation method according to GB CLP Regulation

| Classification | Classification procedure |
| :--- | :--- |
| Skin Corr. 1; H314 | On basis of test data |
| Eye Dam. 1; H318 | On basis of test data |

Relevant H and EUH statements (number and full text)
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
Further Information
The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations. Classification according EC regulation 1272/2008 (CLP): -
Classification procedure:
Health hazards: Calculation method.
Environmental hazards: Calculation method.
Physical hazards: On basis of test data and / or calculated and / or estimated.
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.
(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)


[^0]:    Abbreviations and acronyms
    Skin Corr: Skin corrosion
    Eye Dam: Eye damage
    ADR: Accord européen sur le transport des marchandises dangereuses par Route
    CAS Chemical Abstracts Service
    DNEL: Derived No Effect Level
    IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
    IMDG: International Maritime Code for Dangerous Goods
    IATA: International Air Transport Association
    IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
    ICAO: International Civil Aviation Organization
    ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
    GHS: Globally Harmonized System of Classification and Labelling of Chemicals
    GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)
    LOAEL: Lowest observed adverse effect level
    LOAEC: Lowest observed adverse effect concentration
    LC50: Lethal concentration, 50 percent
    LD50: Lethal dose, 50 percent
    NOAEL: No observed adverse effect level
    NOAEC: No observed adverse effect level
    NTP: National Toxicology Program
    N/A: not applicable
    OSHA: Occupational Safety and Health Administration
    PNEC: predicted no effect concentration
    PBT: Persistent bioaccumulative toxic
    RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail )
    SARA: Superfund Amendments and Reauthorization Act
    SVHC: substance of very high concern
    TRGS Technische Regeln fuerGefahrstoffe
    TSCA: Toxic Substances Control Act
    VOC: Volatile Organic Compounds
    VwVwS: Verwaltungsvorschrift wassergefaehrdender Stoffe
    WGK: Wassergefaehrdungsklasse
    CLP: Classification, labelling and Packaging
    REACH: Registration, Evaluation and Authorization of Chemicals
    GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals
    UN: United Nations
    CAS: Chemical Abstracts Service
    DNEL: Derived No Effect Level
    DMEL: Derived Minimal Effect Level
    PNEC: Predicted No Effect Concentration
    ATE: Acute toxicity estimate
    LL50: Lethal loading, 50\%
    EL50: Effect loading, 50\%
    EC50: Effective Concentration 50\%
    ErC50: Effective Concentration 50\%, growth rate
    NOEC: No Observed Effect Concentration
    BCF: Bio-concentration factor
    PBT: persistent, bioaccumulative, toxic
    vPvB: very persistent, very bioaccumulative
    ADR: Accord européen sur le transport des marchandises dangereuses par Route
    (European Agreement concerning the International Carriage of Dangerous Goods by Road)
    RID: Regulations concerning the international carriage of dangerous goods by rail
    ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

