



## ***Silica analysis kit***

|               |               |
|---------------|---------------|
| Product No.   | 6810011697802 |
| Version       | 6.1           |
| Revision date | 18.04.2018    |
| Print date    | 18.04.2018    |

### **Composition / Information on ingredients**

|                 |                      |
|-----------------|----------------------|
| 6810011697802-1 | Amino acid reagent   |
| 6810011697802-2 | Oxalic acid F SILICA |
| 6810011697802-3 | Molybdate 3 reagent  |





# Safety Data Sheet

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision date: 18.04.2018

Version: 6.1

Print date: 18.04.2018

## SECTION 1: Identification

### Product identifier

|                                |                    |
|--------------------------------|--------------------|
| Trade name/designation:        | Amino acid reagent |
| Product No.:                   | 6810011697802-1    |
| Synonyms:                      | no data available  |
| CAS No.:                       | not applicable     |
| Other means of identification: |                    |

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

|                       |                                    |
|-----------------------|------------------------------------|
| Recommended Use:      | For Further Manufacturing Use Only |
| Uses advised against: | Not for Human or Animal Drug Use   |

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

#### Supplier

##### **VWR International LLC**

|                  |  |
|------------------|--|
| Street           | 100 Matsonford Road Radnor Corporate Center,<br>Building One, Suite 200 P. O. Box 6660 |
| Postal code/city | Radnor, PA 19087   |
| Telephone        | +1-800-932-5000 toll-free within US/Canada<br>+1-610-386-1700                          |
| Telefax:         | +1-610-728-2103  |





## Emergency telephone

Telephone +1-800-424-9300 (Chemtrec, 24 hrs/day, 7 days/week, USA)

## Preparation Information

VWR International - Product Information Compliance

E-mail sds@vwr.com

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910.1200 (OSHA HCS)

| Hazard classes and hazard categories | Hazard statements |
|--------------------------------------|-------------------|
| Reproductive toxicity, category 1B   | H360              |
| Eye irritation, category 2           | H319              |

### 2.2 Label elements

#### Labelling in accordance with 29 CFR 1910.1200 (OSHA HCS)

#### Hazard pictograms



**Signal word:** Danger

| Hazard statements |   |
|-------------------|---|
| H360              | May damage fertility or the unborn child. |
| H319              | Causes serious eye irritation.            |

| Precautionary statements |  |
|--------------------------|--|
| P201                     | Obtain special instructions before use.  |
| P280                     | Wear protective gloves/protective clothing/eye protection/face protection.   |
| P305+P351+P338           | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P308+P313                | IF exposed or concerned: Get medical advice/attention.   |

#### Hazards not otherwise classified (HNOC)

none/none





## SECTION 3: Composition / information on ingredients

### 3.1 Substances

not applicable

### 3.2 Mixtures

Hazardous ingredients Classification according to the OSHA Hazard Communication Standard 29 CFR 1910.1200

| Substance name        | Concentration | Product identifier | Hazard classes and hazard categories   |
|-----------------------|---------------|--------------------|--|
| N,N-Dimethylformamide | 10 - 20%      | CAS No.: 68-12-2   | Flam. Liq. 3 - H226<br>Repr. 1B - H360D<br>Acute Tox. 4 - H312+H332<br>Eye Irrit. 2 - H319 |
| Sodium metabisulphite | 5 - 10%       | CAS No.: 7681-57-4 | Acute Tox. 4 - H302<br>Eye Dam. 1 - H318   |

## SECTION 4: First aid measures

### 4.1 General information

IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician. If unconscious place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

#### After inhalation

Call a POISON CENTER/doctor. Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

#### In case of skin contact

After contact with skin, wash immediately with plenty of water and soap. Remove contaminated, saturated clothing immediately. In case of skin reactions, consult a physician.

#### After eye contact

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. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing.

#### In case of ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Do NOT induce vomiting. Give nothing to eat or drink.

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

no data available

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

no data available

### 4.4 Self-protection of the first aider

First aider: Pay attention to self-protection!

### 4.5 Information to physician

no data available





## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### **Suitable extinguishing media**

The product itself does not burn.  
Co-ordinate fire-fighting measures to the fire surroundings.

#### **Extinguishing media which must not be used for safety reasons**

no restriction

### 5.2 Specific hazards arising from the chemical

In case of fire may be liberated:  
Pyrolysis products, toxic

### 5.3 Advice for firefighters

DO NOT fight fire when fire reaches explosives.  
Protective equipment and precautions for firefighters  
Wear a self-contained breathing apparatus and chemical protective clothing.

#### **Additional information**

Do not allow run-off from fire-fighting to enter drains or water courses.  
Do not inhale explosion and combustion gases.  
Use water spray/stream to protect personnel and to cool endangered containers.  
In case of fire: Evacuate area.

## SECTION 6: Accidental release measures

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

In case of major fire and large quantities: Remove persons to safety.

### 6.2 Environmental precautions

Discharge into the environment must be avoided.

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

Spilled product must never be returned to the original container for recycling. Collect in closed and suitable containers for disposal.

### 6.4 Additional information

Clear spills immediately.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

All work processes must always be designed so that the following is as low as possible: Inhalation skin contact Eye contact Use extractor hood (laboratory). If handled uncovered, arrangements with local exhaust ventilation have to be used. If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means.

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

Recommended storage temperature: no data available  
Keep container tightly closed and in a well-ventilated place. Keep/Store only in original container.

### 7.3 Specific end use(s)

no data available





## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

| Ingredient (Designation) | Regulatory information | Country | Limit value type (country of origin) | Limit value                   |
|--------------------------|------------------------|---------|--------------------------------------|-------------------------------|
| N,N-Dimethylformamide    | NIOSH                  | US      | LTV                                  | 30 mg/m <sup>3</sup> - 10 ppm |
| N,N-Dimethylformamide    | OSHA                   | US      | LTV                                  | 30 mg/m <sup>3</sup> - 10 ppm |

### 8.2 Engineering controls

#### Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

#### Personal protection equipment (PPE)

Wear suitable protective clothing. When handling with chemical substances, protective clothing must be worn.

#### *Eye/face protection*

Eye glasses with side protection

#### *Skin protection*

Wear suitable gloves. When handling with chemical substances, protective gloves must be worn. In the case of wanting to use the gloves again, clean them before taking off and air them well. Check leak tightness/impermeability prior to use.

#### *Respiratory protection*

Respiratory protection necessary at: aerosol or mist formation If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

#### *Additional information*

Wash hands before breaks and after work. Avoid contact with skin and eyes. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

#### *Environmental exposure controls*

no data available





## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|                      |                   |
|----------------------|-------------------|
| (a) Appearance       |                   |
| Physical state:      | liquid            |
| Color:               | no data available |
| (b) Odour:           | no data available |
| (c) Odour threshold: | no data available |

#### Safety relevant basic data

|  |                   |
|--|-------------------|
| (d) pH:                                      | no data available |
| (e) Melting point/freezing point:            | no data available |
| (f) Initial boiling point and boiling range: | no data available |
| (g) Flash point:                             | no data available |
| (h) Evaporation rate:                        | no data available |
| (i) Flammability (solid, gas):               | not applicable    |
| (j) Flammability or explosive limits         |                   |
| Lower explosion limit:                       | no data available |
| Upper explosion limit:                       | no data available |
| (k) Vapour pressure:                         | no data available |
| (l) Vapour density:                          | no data available |
| (m) Relative density:                        | no data available |
| (n) Solubility(ies)                          |                   |
| Water solubility (g/L):                      | no data available |
| Soluble (g/L) in Ethanol:                    | no data available |
| (o) Partition coefficient: n-octanol/water:  | no data available |
| (p) Auto-ignition temperature:               | no data available |
| (q) Decomposition temperature:               | no data available |
| (r) Viscosity                                |                   |
| Kinematic viscosity:                         | no data available |
| Dynamic viscosity:                           | no data available |
| (s) Explosive properties:                    | not applicable    |
| (t) Oxidising properties:                    | not applicable    |

### 9.2 Other information

|                        |                   |
|------------------------|-------------------|
| Bulk density:          | not applicable    |
| Refraction index:      | no data available |
| Dissociation constant: | no data available |
| Surface tension:       | no data available |
| Henry constant:        | no data available |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

no data available





## 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

## 10.3 Possibility of hazardous reactions

no data available

## 10.4 Conditions to avoid

no data available

## 10.5 Incompatible materials

no data available

## 10.6 Hazardous decomposition products

no data available

## 10.7 Additional information

no data available

# SECTION 11: Toxicological information

## 11.1 Information on toxicological effects

### Acute effects

#### *Acute oral toxicity:*

N,N-Dimethylformamide - LD50: > 2800 mg/kg - Rat - (RTECS)

Sodium metabisulphite - LD50: > 1540 mg/kg - Rat - (OECD 401)

#### *Acute dermal toxicity:*

N,N-Dimethylformamide - LD50: > 1500 mg/kg - Rabbit - (IUCLID)

Sodium metabisulphite - LD50: < 2000 mg/kg - Rat - (RTECS)

#### *Acute inhalation toxicity:*

no data available

### Irritant and corrosive effects

#### *Primary irritation to the skin:*

not applicable

#### *Irritation to eyes:*

Causes serious eye irritation.

#### *Irritation to respiratory tract:*

not applicable







**Respiratory or skin sensitization**

In case of skin contact: not sensitising

After inhalation: not sensitising

**STOT-single exposure**

not applicable

**STOT-repeated exposure**

not applicable

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

**Carcinogenicity**

The table below indicates whether each agency has listed any ingredient as a carcinogen.

| no data available | ACGIH | IARC | NTP | OSHA |
|-------------------|-------|------|-----|------|
|                   |       |      |     |      |

**Germ cell mutagenicity**

No indications of human germ cell mutagenicity exist.

**Reproductive toxicity**

May damage fertility or the unborn child.

**Aspiration hazard**

not applicable

**Other adverse effects**

no data available

**Additional information**

no data available

**SECTION 12: Ecological information**

**12.1 Ecotoxicity**

**Fish toxicity:**

N,N-Dimethylformamide - LC50: 10500 mg/l (96 h) - Cardwell, R.D., D.G. Foreman, T.R. Payne, and D.J. Wilbur 1978. Acute and Chronic Toxicity of Four Organic Chemicals to Fish. U.S.EPA, Environ.Res.Lab., Duluth, MN; Contract 68-01-0711 (Unpublished):26 p.

**Daphnia toxicity:**

N,N-Dimethylformamide - LC50: 14400 mg/l (48 h) - T.M.Poston and R.Purdy (Eds.), Aquatic Toxicology and Environmental Fate, 9th Volume, ASTM STP 921, Philadelphia, PA :479-493

N,N-Dimethylformamide - EC50: 12800 mg/l (48 h) - Barera, Y., and W.J. Adams 1983. Resolving Some Practical Questions About Daphnia Acute Toxicity Tests. In: W.E.Bishop (Ed.), Aquatic Toxicology and Hazard Assessment, 6th Symposium, ASTM STP 802, Philadelphia, PA :509-518





**Algae toxicity:**  
no data available

**Bacteria toxicity:**  
no data available

### **12.2 Persistence and degradability**

no data available

### **12.3 Bioaccumulative potential**

Partition coefficient: n-octanol/water: no data available

### **12.4 Mobility in soil:**

no data available

### **12.5 Results of PBT/vPvB assessment**

no data available

### **12.6 Other adverse effects**

no data available

## **SECTION 13: Disposal considerations**

### **13.1 Waste treatment methods**

#### **Appropriate disposal / Product**

Dispose according to legislation. Consult the appropriate local waste disposal expert about waste disposal.

Waste code product: no data available

#### **Appropriate disposal / Package**

Dispose according to legislation. Handle contaminated packages in the same way as the substance itself.

#### **Additional information**

no data available

## **SECTION 14: Transport information**

### **Land transport (DOT)**

No dangerous good in sense of this transport regulation.

### **Sea transport (IMDG)**

No dangerous good in sense of this transport regulation.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code  
not relevant





## Air transport (ICAO-TI / IATA-DGR)

No dangerous good in sense of this transport regulation.

## SECTION 15: Regulatory information

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

#### SARA 313 Components

- N,N-Dimethylformamide - CAS No.: 68-12-2

#### Massachusetts Right To Know Components

- N,N-Dimethylformamide - CAS No.: 68-12-2  
- Sodium metabisulphite - CAS No.: 7681-57-4

#### Pennsylvania Right To Know Components

- N,N-Dimethylformamide - CAS No.: 68-12-2  
- Sodium metabisulphite - CAS No.: 7681-57-4

#### New Jersey Right To Know Components

- N,N-Dimethylformamide - CAS No.: 68-12-2  
- Sodium metabisulphite - CAS No.: 7681-57-4

#### California Prop. 65 Components

- N,N-Dimethylformamide - CAS No.: 68-12-2 (cancer)





## SECTION 16: Other information

### Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygienists  
DOT - Department of Transportation  
IARC - International Agency for Research on Cancer  
IATA-DGR - International Air Transport Association-Dangerous Goods Regulations  
ICAO-TI - International Civil Aviation Organization-Technical Instructions  
IMDG - International Maritime Code for Dangerous Goods  
LTV - Long Term Value  
NIOSH - National Institute for Occupational Safety and Health  
NTP - National Toxicology Program  
OSHA - Occupational Safety & Health Administration  
PBT - Persistent, Bioaccumulative and Toxic  
PEL - Permissible Exposure Limit  
STV - Short Term Value  
SVHC - Substances of Very High Concern  
TDG - Transport of Dangerous Goods  
TLV - Threshold Limit Value  
vPvB - very Persistent, very Bioaccumulative

### Additional information

Indication of changes:                      general update

*The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guidance. The information in this document is based on the present state knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. VWR International and his Affiliates shall not be held liable for any damage resulting from handling.*





# Safety Data Sheet

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision date: 18.04.2018

Version: 6.1

Print date: 18.04.2018

## SECTION 1: Identification

### Product identifier

|                                |                      |
|--------------------------------|----------------------|
| Trade name/designation:        | Oxalic acid F SILICA |
| Product No.:                   | 6810011697802-2      |
| Synonyms:                      | no data available    |
| CAS No.:                       | not applicable       |
| Other means of identification: |                      |

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

|                       |                                    |
|-----------------------|------------------------------------|
| Recommended Use:      | For Further Manufacturing Use Only |
| Uses advised against: | Not for Human or Animal Drug Use   |

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

#### Supplier

##### **VWR International LLC**

|                  |  |
|------------------|--|
| Street           | 100 Matsonford Road Radnor Corporate Center,<br>Building One, Suite 200 P. O. Box 6660 |
| Postal code/city | Radnor, PA 19087   |
| Telephone        | +1-800-932-5000 toll-free within US/Canada<br>+1-610-386-1700                          |
| Telefax:         | +1-610-728-2103  |





### Emergency telephone

Telephone +1-800-424-9300 (Chemtrec, 24 hrs/day, 7 days/week, USA)

### Preparation Information

VWR International - Product Information Compliance

E-mail sds@vwr.com

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910.1200 (OSHA HCS)

| Hazard classes and hazard categories | Hazard statements |
|--------------------------------------|-------------------|
| Serious eye damage, category 1       | H318              |

### 2.2 Label elements

#### Labelling in accordance with 29 CFR 1910.1200 (OSHA HCS)

#### Hazard pictograms



Signal word: Danger

| Hazard statements |                            |
|-------------------|----------------------------|
| H318              | Causes serious eye damage. |

| Precautionary statements |  |
|--------------------------|--|
| P280                     | Wear protective gloves/protective clothing/eye protection/face protection.   |
| P305+P351+P338           | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P308+P310                | IF exposed or concerned: Immediately call a POISON CENTER/doctor.  |

#### Hazards not otherwise classified (HNOC)

none/none





## SECTION 3: Composition / information on ingredients

### 3.1 Substances

not applicable

### 3.2 Mixtures

Hazardous ingredients Classification according to the OSHA Hazard Communication Standard 29 CFR 1910.1200

| Substance name | Concentration | Product identifier | Hazard classes and hazard categories                                     |
|----------------|---------------|--------------------|--|
| Methanol       | 30 - 40%      | CAS No.: 67-56-1   | Flam. Liq. 2 - H225<br>Acute Tox. 3 - H301+H311+H331<br>STOT SE 1 - H370 |
| Oxalic acid    | 10 - 20%      | CAS No.: 144-62-7  | Acute Tox. 4 - H302+H312   |

## SECTION 4: First aid measures

### 4.1 General information

IF exposed: Immediately call a POISON CENTER/doctor. If unconscious place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

#### After inhalation

Immediately call a POISON CENTER/doctor. Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

#### In case of skin contact

After contact with skin, wash immediately with plenty of water and soap. Remove contaminated, saturated clothing immediately. In case of skin reactions, consult a physician.

#### After eye contact

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. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing.

#### In case of ingestion

Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. Rinse mouth thoroughly with water. Give nothing to eat or drink.

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

no data available

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

no data available

### 4.4 Self-protection of the first aider

First aider: Pay attention to self-protection!

### 4.5 Information to physician

no data available





## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Water spray  
ABC-powder  
Carbon dioxide (CO<sub>2</sub>)  
Nitrogen

#### Extinguishing media which must not be used for safety reasons

no restriction

### 5.2 Specific hazards arising from the chemical

In case of fire may be liberated:  
Pyrolysis products, toxic

### 5.3 Advice for firefighters

DO NOT fight fire when fire reaches explosives.  
Protective equipment and precautions for firefighters  
Wear a self-contained breathing apparatus and chemical protective clothing.

#### Additional information

Do not allow run-off from fire-fighting to enter drains or water courses.  
Do not inhale explosion and combustion gases.  
Use caution when applying carbon dioxide in confined spaces. Carbon dioxide can displace oxygen.  
Use water spray/stream to protect personnel and to cool endangered containers.  
In case of fire: Evacuate area.

## SECTION 6: Accidental release measures

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

Remove all sources of ignition. Use personal protection equipment. Special danger of slipping by leaking/spilling product. In case of major fire and large quantities: Remove persons to safety. Wear a self-contained breathing apparatus and chemical protective clothing.

### 6.2 Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

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

Spilled product must never be returned to the original container for recycling. Clean contaminated articles and floor according to the environmental legislation. Collect in closed and suitable containers for disposal.

### 6.4 Additional information

Clear spills immediately.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

All work processes must always be designed so that the following is as low as possible: Inhalation skin contact Eye contact Use extractor hood (laboratory). If handled uncovered, arrangements with local exhaust ventilation have to be used. If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means.







## 7.2 Conditions for safe storage, including any incompatibilities

Recommended storage temperature: no data available

Keep container tightly closed and in a well-ventilated place. Keep/Store only in original container.

## 7.3 Specific end use(s)

no data available

# SECTION 8: Exposure controls/personal protection

## 8.1 Control parameters

| Ingredient (Designation) | Regulatory information | Country | Limit value type (country of origin) | Limit value                             |
|--------------------------|------------------------|---------|--------------------------------------|---|
| Methanol                 | NIOSH                  | US      | LTV                                  | 260 mg/m <sup>3</sup> - 200 ppm         |
| Methanol                 | NIOSH                  | US      | STV                                  | 325 mg/m <sup>3</sup> (1) - 250 ppm (1) |
| Methanol                 | OSHA                   | US      | LTV                                  | 260 mg/m <sup>3</sup> - 200 ppm         |
| Oxalic acid              | NIOSH                  | US      | LTV                                  | 1 mg/m <sup>3</sup>                     |
| Oxalic acid              | NIOSH                  | US      | STV                                  | 2 mg/m <sup>3</sup> (1)                 |
| Oxalic acid              | OSHA                   | US      | LTV                                  | 1 mg/m <sup>3</sup>                     |

## 8.2 Engineering controls

### Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

### Personal protection equipment (PPE)

Wear suitable protective clothing. When handling with chemical substances, protective clothing must be worn.

#### *Eye/face protection*

Eye glasses with side protection

#### *Skin protection*

Wear suitable gloves. When handling with chemical substances, protective gloves must be worn. In the case of wanting to use the gloves again, clean them before taking off and air them well. Check leak tightness/impermeability prior to use.

#### *Respiratory protection*

Respiratory protection necessary at: aerosol or mist formation if exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

#### *Additional information*

Wash hands before breaks and after work. Avoid contact with skin and eyes. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

#### *Environmental exposure controls*

no data available





## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|                      |                   |
|----------------------|-------------------|
| (a) Appearance       |                   |
| Physical state:      | liquid            |
| Color:               | colorless         |
| (b) Odour:           | no data available |
| (c) Odour threshold: | no data available |

#### Safety relevant basic data

|  |                      |
|--|----------------------|
| (d) pH:                                      | no data available    |
| (e) Melting point/freezing point:            | no data available    |
| (f) Initial boiling point and boiling range: | 77 °C (1013 hPa)     |
| (g) Flash point:                             | 34,4 °C (closed cup) |
| (h) Evaporation rate:                        | no data available    |
| (i) Flammability (solid, gas):               | not applicable       |
| (j) Flammability or explosive limits         |                      |
| Lower explosion limit:                       | no data available    |
| Upper explosion limit:                       | no data available    |
| (k) Vapour pressure:                         | no data available    |
| (l) Vapour density:                          | no data available    |
| (m) Relative density:                        | no data available    |
| (n) Solubility(ies)                          |                      |
| Water solubility (g/L):                      | no data available    |
| Soluble (g/L) in Ethanol:                    | no data available    |
| (o) Partition coefficient: n-octanol/water:  | no data available    |
| (p) Auto-ignition temperature:               | no data available    |
| (q) Decomposition temperature:               | no data available    |
| (r) Viscosity                                |                      |
| Kinematic viscosity:                         | no data available    |
| Dynamic viscosity:                           | no data available    |
| (s) Explosive properties:                    | not applicable       |
| (t) Oxidising properties:                    | not applicable       |

### 9.2 Other information

|                        |                   |
|------------------------|-------------------|
| Bulk density:          | not applicable    |
| Refraction index:      | no data available |
| Dissociation constant: | no data available |
| Surface tension:       | no data available |
| Henry constant:        | no data available |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

no data available





## 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

## 10.3 Possibility of hazardous reactions

no data available

## 10.4 Conditions to avoid

no data available

## 10.5 Incompatible materials

no data available

## 10.6 Hazardous decomposition products

no data available

## 10.7 Additional information

no data available

# SECTION 11: Toxicological information

## 11.1 Information on toxicological effects

### Acute effects

#### *Acute oral toxicity:*

Methanol - LD50: > 5628 mg/kg - Rat - (IUCLID)

Methanol - LDLo: > 143 mg/kg - Human - (RTECS)

Oxalic acid - LD50: > 375 mg/kg - Rat - (IUCLID)

#### *Acute dermal toxicity:*

Methanol - LD50: > 15800 mg/kg - Rabbit

Oxalic acid - LD50: > 20000 mg/kg - Rabbit - (IUCLID)

#### *Acute inhalation toxicity:*

Methanol - TClO: > 160 ppm (4h) - Human

### Irritant and corrosive effects

#### *Primary irritation to the skin:*

not applicable

#### *Irritation to eyes:*

Causes serious eye damage.

#### *Irritation to respiratory tract:*

not applicable





**Respiratory or skin sensitization**

In case of skin contact: not sensitising

After inhalation: not sensitising

**STOT-single exposure**

not applicable

**STOT-repeated exposure**

not applicable

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

**Carcinogenicity**

The table below indicates whether each agency has listed any ingredient as a carcinogen.

| no data available | ACGIH | IARC | NTP | OSHA |
|-------------------|-------|------|-----|------|
|                   |       |      |     |      |

**Germ cell mutagenicity**

No indications of human germ cell mutagenicity exist.

**Reproductive toxicity**

No indications of human reproductive toxicity exist.

**Aspiration hazard**

not applicable

**Other adverse effects**

no data available

**Additional information**

no data available

**SECTION 12: Ecological information**

**12.1 Ecotoxicity**

**Fish toxicity:**

Methanol - LC50: 24000 mg/l (96 h) - Poirier, S.H., M.L. Knuth, C.D. Anderson-Buchou, L.T. Brooke, A.R. Lima, and P.J. Shubat 1986. Comparative Toxicity of Methanol and N,N-Dimethylformamide to Freshwater Fish and Invertebrates. Bull.EnvIRON.Contam.Toxicol. 37(4):615-621

**Daphnia toxicity:**

Methanol - LC50: 3290 mg/l (48 h) - Guilhermino, L., T. Diamantino, M.C. Silva, and A.M.V.M. Soares 2000. Acute Toxicity Test with Daphnia magna: An Alternative to Mammals in the Prescreening of Chemical Toxicity?. Ecotoxicol.EnvIRON.Saf. 46(3):357-362

Methanol - EC50: 24500 mg/l (48 h) - Randall, T.L., and P.V. Knopp 1980. Detoxification of Specific Organic Substances by Wet Oxidation. J.Water Pollut.Control Fed. 52(8):2117-2130





Oxalic acid - EC50: 137 mg/l (48 h) - Randall, T.L., and P.V. Knopp 1980. Detoxification of Specific Organic Substances by Wet Oxidation. J. Water Pollut. Control Fed. 52(8):2117-2130

**Algae toxicity:**

no data available

**Bacteria toxicity:**

no data available

**12.2 Persistence and degradability**

no data available

**12.3 Bioaccumulative potential**

Partition coefficient: n-octanol/water: no data available

**12.4 Mobility in soil:**

no data available

**12.5 Results of PBT/vPvB assessment**

no data available

**12.6 Other adverse effects**

no data available

## SECTION 13: Disposal considerations

**13.1 Waste treatment methods**

**Appropriate disposal / Product**

Dispose according to legislation. Consult the appropriate local waste disposal expert about waste disposal.

Waste code product: no data available

**Appropriate disposal / Package**

Dispose according to legislation. Handle contaminated packages in the same way as the substance itself.

**Additional information**

no data available





## SECTION 14: Transport information

### Land transport (DOT)

|                               |   |
|-------------------------------|---|
| UN-No.:                       | 3265  |
| Proper Shipping Name:         | CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (OXALIC ACID) |
| Class(es):                    | 8   |
| Classification code:          | C3  |
| Hazard label(s):              | 8   |
| Packing group:                | III   |
| Environmental hazards:        | No  |
| Marine pollutant:             | no data available                                       |
| Special precautions for user: |   |

### Sea transport (IMDG)

|  |   |
|--|---|
| UN-No.:  | 3265  |
| Proper Shipping Name:  | CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (OXALIC ACID) |
| Class(es):   | 8   |
| Classification code:   |   |
| Hazard label(s):   | 8   |
| Packing group:   | III   |
| Environmental hazards:   | No  |
| MARINE POLLUTANT:  | No  |
| Special precautions for user:  |   |
| Segregation group:   | 1   |
| EmS-No.  | F-A S-B   |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | not relevant  |

### Air transport (ICAO-TI / IATA-DGR)

|                               |   |
|-------------------------------|---|
| UN-No.:                       | 3265  |
| Proper Shipping Name:         | CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (OXALIC ACID) |
| Class(es):                    | 8   |
| Classification code:          |   |
| Hazard label(s):              | 8   |
| Packing group:                | III   |
| Special precautions for user: |   |

## SECTION 15: Regulatory information

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

#### SARA 313 Components

- Methanol - CAS No.: 67-56-1

#### Massachusetts Right To Know Components

- Methanol - CAS No.: 67-56-1





- Oxalic acid - CAS No.: 144-62-7

#### **Pennsylvania Right To Know Components**

- Methanol - CAS No.: 67-56-1  
- Oxalic acid - CAS No.: 144-62-7

#### **New Jersey Right To Know Components**

- Methanol - CAS No.: 67-56-1  
- Oxalic acid - CAS No.: 144-62-7

#### **California Prop. 65 Components**

- Methanol - CAS No.: 67-56-1 (developmental)

## **SECTION 16: Other information**

### **Abbreviations and acronyms**

ACGIH - American Conference of Governmental Industrial Hygienists  
DOT - Department of Transportation  
IARC - International Agency for Research on Cancer  
IATA-DGR - International Air Transport Association-Dangerous Goods Regulations  
ICAO-TI - International Civil Aviation Organization-Technical Instructions  
IMDG - International Maritime Code for Dangerous Goods  
LTV - Long Term Value  
NIOSH - National Institute for Occupational Safety and Health  
NTP - National Toxicology Program  
OSHA - Occupational Safety & Health Administration  
PBT - Persistent, Bioaccumulative and Toxic  
PEL - Permissible Exposure Limit  
STV - Short Term Value  
SVHC - Substances of Very High Concern  
TDG - Transport of Dangerous Goods  
TLV - Threshold Limit Value  
vPvB - very Persistent, very Bioaccumulative

### **Additional information**

Indication of changes:                      general update

*The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guidance. The information in this document is based on the present state knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. VWR International and his Affiliates shall not be held liable for any damage resulting from handling.*





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# Safety Data Sheet

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision date: 18.04.2018

Version: 6.1

Print date: 18.04.2018

## SECTION 1: Identification

### Product identifier

|                                |                     |
|--------------------------------|---------------------|
| Trade name/designation:        | Molybdate 3 reagent |
| Product No.:                   | 6810011697802-3     |
| Synonyms:                      | no data available   |
| CAS No.:                       | not applicable      |
| Other means of identification: |                     |

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

|                       |                                    |
|-----------------------|------------------------------------|
| Recommended Use:      | For Further Manufacturing Use Only |
| Uses advised against: | Not for Human or Animal Drug Use   |

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

#### Supplier

##### **VWR International LLC**

|                  |  |
|------------------|--|
| Street           | 100 Matsonford Road Radnor Corporate Center,<br>Building One, Suite 200 P. O. Box 6660 |
| Postal code/city | Radnor, PA 19087   |
| Telephone        | +1-800-932-5000 toll-free within US/Canada<br>+1-610-386-1700                          |
| Telefax:         | +1-610-728-2103  |





## Emergency telephone

Telephone +1-800-424-9300 (Chemtrec, 24 hrs/day, 7 days/week, USA)

## Preparation Information

VWR International - Product Information Compliance

E-mail sds@vwr.com

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910.1200 (OSHA HCS)

| Hazard classes and hazard categories                           | Hazard statements |
|--|-------------------|
| Specific target organ toxicity (repeated exposure), category 2 | H373              |
| Serious eye damage, category 1                                 | H318              |
| Skin irritation, category 2                                    | H315              |
| Substance or mixture corrosive to metals, category 1           | H290              |

### 2.2 Label elements

#### Labelling in accordance with 29 CFR 1910.1200 (OSHA HCS)

#### Hazard pictograms



Signal word: Danger

| Hazard statements |  |
|-------------------|--|
| H373              | May cause damage to organs through prolonged or repeated exposure. |
| H318              | Causes serious eye damage.   |
| H315              | Causes skin irritation.  |
| H290              | May be corrosive to metals.  |

| Precautionary statements |  |
|--------------------------|--|
| P280                     | Wear protective gloves/protective clothing/eye protection/face protection.   |
| P302+P352                | IF ON SKIN: Wash with plenty of water/...  |
| P305+P351+P338           | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P308+P310                | IF exposed or concerned: Immediately call a POISON CENTER/doctor.  |

#### Hazards not otherwise classified (HNOC)

none/none





## SECTION 3: Composition / information on ingredients

### 3.1 Substances

not applicable

### 3.2 Mixtures

Hazardous ingredients Classification according to the OSHA Hazard Communication Standard 29 CFR 1910.1200

| Substance name           | Concentration | Product identifier | Hazard classes and hazard categories                        |
|--------------------------|---------------|--------------------|---|
| Sulfuric acid            | 7 - 13%       | CAS No.: 7664-93-9 | Skin Corr. 1A - H314  |
| Sodium hydrogen sulphate | 7 - 13%       | CAS No.: 7681-38-1 | Eye Dam. 1 - H318   |
| Molybdic acid            | 5 - 10%       | CAS No.: 7782-91-4 | STOT RE 2 - H373<br>Eye Irrit. 2 - H319<br>STOT SE 3 - H335 |

## SECTION 4: First aid measures

### 4.1 General information

IF exposed: Immediately call a POISON CENTER/doctor. If unconscious place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

#### After inhalation

Immediately call a POISON CENTER/doctor. Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

#### In case of skin contact

After contact with skin, wash immediately with plenty of water and soap. Remove contaminated, saturated clothing immediately. In case of skin reactions, consult a physician.

#### After eye contact

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. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing.

#### In case of ingestion

Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. Rinse mouth thoroughly with water. Give nothing to eat or drink.

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

no data available

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

no data available

### 4.4 Self-protection of the first aider

First aider: Pay attention to self-protection!

### 4.5 Information to physician

no data available





## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

The product itself does not burn.  
Co-ordinate fire-fighting measures to the fire surroundings.

#### Extinguishing media which must not be used for safety reasons

no restriction

### 5.2 Specific hazards arising from the chemical

In case of fire may be liberated:  
Pyrolysis products, toxic

### 5.3 Advice for firefighters

DO NOT fight fire when fire reaches explosives.  
Protective equipment and precautions for firefighters  
Wear a self-contained breathing apparatus and chemical protective clothing.

#### Additional information

Do not allow run-off from fire-fighting to enter drains or water courses.  
Do not inhale explosion and combustion gases.  
Use water spray/stream to protect personnel and to cool endangered containers.  
In case of fire: Evacuate area.

## SECTION 6: Accidental release measures

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

Do not breathe gas/vapor/spray. Provide adequate ventilation. Use personal protection equipment. In case of major fire and large quantities: Remove persons to safety. Wear a self-contained breathing apparatus and chemical protective clothing.

### 6.2 Environmental precautions

Do not allow to enter into surface water or drains. Make sure spills can be contained, e.g. in sump pallets or kerbed areas.  
Discharge into the environment must be avoided.

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

Spilled product must never be returned to the original container for recycling. Clean contaminated articles and floor according to the environmental legislation. Collect in closed and suitable containers for disposal.

### 6.4 Additional information

Clear spills immediately.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

All work processes must always be designed so that the following is as low as possible: Inhalation skin contact Eye contact Use extractor hood (laboratory). If handled uncovered, arrangements with local exhaust ventilation have to be used. If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means.

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

Recommended storage temperature: no data available  
Keep container tightly closed and in a well-ventilated place. Keep/Store only in original container.





### 7.3 Specific end use(s)

no data available

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

| Ingredient (Designation) | Regulatory information | Country | Limit value type (country of origin) | Limit value         |
|--------------------------|------------------------|---------|--------------------------------------|---------------------|
| Sulfuric acid            | NIOSH                  | US      | LTV                                  | 1 mg/m <sup>3</sup> |
| Sulfuric acid            | OSHA                   | US      | LTV                                  | 1 mg/m <sup>3</sup> |

### 8.2 Engineering controls

#### Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

#### Personal protection equipment (PPE)

Wear suitable protective clothing. When handling with chemical substances, protective clothing must be worn.

#### *Eye/face protection*

Eye glasses with side protection

#### *Skin protection*

Wear suitable gloves. When handling with chemical substances, protective gloves must be worn. In the case of wanting to use the gloves again, clean them before taking off and air them well. Check leak tightness/impermeability prior to use.

#### *Respiratory protection*

Respiratory protection necessary at: aerosol or mist formation If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

#### *Additional information*

Wash hands before breaks and after work. Avoid contact with skin and eyes. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

#### *Environmental exposure controls*

no data available





## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|                      |                   |
|----------------------|-------------------|
| (a) Appearance       |                   |
| Physical state:      | liquid            |
| Color:               | no data available |
| (b) Odour:           | no data available |
| (c) Odour threshold: | no data available |

#### Safety relevant basic data

|  |                   |
|--|-------------------|
| (d) pH:                                      | no data available |
| (e) Melting point/freezing point:            | no data available |
| (f) Initial boiling point and boiling range: | no data available |
| (g) Flash point:                             | no data available |
| (h) Evaporation rate:                        | no data available |
| (i) Flammability (solid, gas):               | not applicable    |
| (j) Flammability or explosive limits         |                   |
| Lower explosion limit:                       | no data available |
| Upper explosion limit:                       | no data available |
| (k) Vapour pressure:                         | no data available |
| (l) Vapour density:                          | no data available |
| (m) Relative density:                        | no data available |
| (n) Solubility(ies)                          |                   |
| Water solubility (g/L):                      | no data available |
| Soluble (g/L) in Ethanol:                    | no data available |
| (o) Partition coefficient: n-octanol/water:  | no data available |
| (p) Auto-ignition temperature:               | no data available |
| (q) Decomposition temperature:               | no data available |
| (r) Viscosity                                |                   |
| Kinematic viscosity:                         | no data available |
| Dynamic viscosity:                           | no data available |
| (s) Explosive properties:                    | not applicable    |
| (t) Oxidising properties:                    | not applicable    |

### 9.2 Other information

|                        |                   |
|------------------------|-------------------|
| Bulk density:          | not applicable    |
| Refraction index:      | no data available |
| Dissociation constant: | no data available |
| Surface tension:       | no data available |
| Henry constant:        | no data available |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

no data available





## 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

## 10.3 Possibility of hazardous reactions

no data available

## 10.4 Conditions to avoid

no data available

## 10.5 Incompatible materials

no data available

## 10.6 Hazardous decomposition products

no data available

## 10.7 Additional information

no data available

# SECTION 11: Toxicological information

## 11.1 Information on toxicological effects

### Acute effects

#### *Acute oral toxicity:*

Sulfuric acid - LD50: > 2140 mg/kg - Rat - (Merck KGaA)

Sodium hydrogen sulphate - LD50: 2490 mg/kg - Rat - (IUCLID)

Molybdc acid - LD50: > 2700 mg/kg - Rat - (CHP)

#### *Acute dermal toxicity:*

no data available

#### *Acute inhalation toxicity:*

Sulfuric acid - LC50: > 0.51 mg/l - Rat - (CHP)

### Irritant and corrosive effects

#### *Primary irritation to the skin:*

Causes skin irritation.

#### *Irritation to eyes:*

Causes serious eye damage.

#### *Irritation to respiratory tract:*

not applicable





**Respiratory or skin sensitization**

In case of skin contact: not sensitising

After inhalation: not sensitising

**STOT-single exposure**

not applicable

**STOT-repeated exposure**

May cause damage to organs through prolonged or repeated exposure.

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

**Carcinogenicity**

The table below indicates whether each agency has listed any ingredient as a carcinogen.

| no data available | ACGIH | IARC | NTP | OSHA |
|-------------------|-------|------|-----|------|
|                   |       |      |     |      |

**Germ cell mutagenicity**

No indications of human germ cell mutagenicity exist.

**Reproductive toxicity**

No indications of human reproductive toxicity exist.

**Aspiration hazard**

not applicable

**Other adverse effects**

no data available

**Additional information**

no data available

**SECTION 12: Ecological information**

**12.1 Ecotoxicity**

**Fish toxicity:**

no data available

**Daphnia toxicity:**

Sulfuric acid - LC50: 42.5 mg/l (48 h) - Portmann, J.E., and K.W. Wilson 1971. The Toxicity of 140 Substances to the Brown Shrimp and Other Marine Animals. Shellfish Information Leaflet No.22 (2nd Ed.), Ministry of Agric.Fish.Food, Fish.Lab.Burnham-on-Crouch: 12p.

**Algae toxicity:**

no data available

**Bacteria toxicity:**

no data available







## 12.2 Persistence and degradability

no data available

## 12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water: no data available

## 12.4 Mobility in soil:

no data available

## 12.5 Results of PBT/vPvB assessment

no data available

## 12.6 Other adverse effects

no data available

# SECTION 13: Disposal considerations

## 13.1 Waste treatment methods

### Appropriate disposal / Product

Dispose according to legislation. Consult the appropriate local waste disposal expert about waste disposal.

Waste code product: no data available

### Appropriate disposal / Package

Dispose according to legislation. Handle contaminated packages in the same way as the substance itself.

### Additional information

no data available

# SECTION 14: Transport information

## Land transport (DOT)

|                               |   |
|-------------------------------|---|
| UN-No.:                       | 3264  |
| Proper Shipping Name:         | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (SULFURIC ACID) |
| Class(es):                    | 8   |
| Classification code:          | C1  |
| Hazard label(s):              | 8   |
| Packing group:                | III   |
| Environmental hazards:        | No  |
| Marine pollutant:             | no data available   |
| Special precautions for user: |   |

## Sea transport (IMDG)

|                       |   |
|-----------------------|---|
| UN-No.:               | 3264  |
| Proper Shipping Name: | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (SULFURIC ACID) |
| Class(es):            | 8   |
| Classification code:  |   |
| Hazard label(s):      | 8   |





Packing group: III  
Environmental hazards: No  
MARINE POLLUTANT: No  
Special precautions for user:  
Segregation group: 1  
EmS-No. F-A S-B  
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code not relevant

### Air transport (ICAO-TI / IATA-DGR)

UN-No.: 3264  
Proper Shipping Name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (SULFURIC ACID)  
Class(es): 8  
Classification code:  
Hazard label(s): 8  
Packing group: III  
Special precautions for user:

## SECTION 15: Regulatory information

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

#### SARA 313 Components

- Sulfuric acid - CAS No.: 7664-93-9

#### Massachusetts Right To Know Components

- Sulfuric acid - CAS No.: 7664-93-9

#### Pennsylvania Right To Know Components

- Sulfuric acid - CAS No.: 7664-93-9

#### New Jersey Right To Know Components

- Sulfuric acid - CAS No.: 7664-93-9

#### California Prop. 65 Components

Does not contain listed substances.





## SECTION 16: Other information

### Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygienists  
DOT - Department of Transportation  
IARC - International Agency for Research on Cancer  
IATA-DGR - International Air Transport Association-Dangerous Goods Regulations  
ICAO-TI - International Civil Aviation Organization-Technical Instructions  
IMDG - International Maritime Code for Dangerous Goods  
LTV - Long Term Value  
NIOSH - National Institute for Occupational Safety and Health  
NTP - National Toxicology Program  
OSHA - Occupational Safety & Health Administration  
PBT - Persistent, Bioaccumulative and Toxic  
PEL - Permissible Exposure Limit  
STV - Short Term Value  
SVHC - Substances of Very High Concern  
TDG - Transport of Dangerous Goods  
TLV - Threshold Limit Value  
vPvB - very Persistent, very Bioaccumulative

### Additional information

Indication of changes:                      general update

*The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guidance. The information in this document is based on the present state knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. VWR International and his Affiliates shall not be held liable for any damage resulting from handling.*

