

# Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 91301	QUANTOFIX Chromate	Page: 1/12
Printing date: 04.04.2023	Date of issue: 24.10.2022	Version: 2.2.2.4

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

### 1.1 Product identifier

REF 91301  
 Product name QUANTOFIX Chromate

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 test strips  
 2 x 25 mL CrO<sub>4</sub><sup>2-</sup>-1 UFI: K1CV-C3G4-A20N-Q4V9

### 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.  
 If CE labelling: Product for in-vitro-diagnostic use (IVD) or Accessory for medical use  
**Uses advised against**  
 not described

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

**Manufactured by:**  
 MACHEREY-NAGEL GmbH & Co. KG  
 Valencienner Str. 11, 52355 Düren, Germany  
 Phone: +49 2421 969 0 E-mail: sds@mn-net.com (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, <<https://www.ggiz-erfurt.de>>

You find our current versions of SDS in Internet: <<http://www.mn-net.com/SDS>>

## SECTION 2: Hazard identification

### 2.0 Classification of the complete product according to Regulation (EC) 1272/2008



GHS05 GHS07

Signal word DANGER

Hazard identification	Hazard classes/categories
H290	Met. Corr. 1
H314	Skin Corr. 1B
H332	Acute Tox. 4 inh.

### 2.1 Classification of the substance or mixture according to Regulation (EC) 1272/2008

25 mL CrO<sub>4</sub><sup>2-</sup>-1



GHS05 GHS07



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Signal word	DANGER
<b>Hazard identification</b>	<b>Hazard classes/categories</b>
H290	Met. Corr. 1
H314	Skin Corr. 1B
H332	Acute Tox. 4 inh.

**100 test strips**

Signal word	Do not need labelling as hazardous
No hazard class	-

List of H phrases: see section 16.2

## 2.2 Label elements according regulation (EC) 1272/2008

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** must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2). Metal corrosive solutions **do not have to** be labelled with GHS symbol, signal word, H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2.1.3).

25 mL CrO<sub>4</sub><sup>2-</sup> -1



Signal word: DANGER  
 H314  
 Causes severe skin burns and eye damage.  
 P260sh, P280sh, P303+361+353, P305+351+338, P310  
 Do not breathe dust/vapours. Wear protective gloves/eye protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. 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.

**100 test strips**

Do not need labelling as hazardous  
 Signal word: -

### Label elements of the complete product



Signal word: DANGER  
 H314  
 Causes severe skin burns and eye damage.  
 P260sh, P280sh, P303+361+353, P305+351+338, P310  
 Do not breathe dust/vapours. Wear protective gloves/eye protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. 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.

**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.  
 Cause after impairments of health when ingested in small quantities.



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## Information pertaining to particular risks to the environment

Avoid contact of substance/mixture to environment.

**PBT:** not applicable

**vPvB:** not applicable

## Possible endocrine disrupting effects

no data available

## SECTION 3: Composition / information on ingredients

### 3.1 Substances or 3.2 Mixtures

#### 100 test strips

Substance name: *PVC foil (CAS 9002-86-2)*  
CAS No.: -

Substance rating: No criteria for classification or naming of chemical not required.  
Concentration: 95 - <100 %  
acc. CLP (GHS): The criteria for classification are not fulfilled.

Substance name: *cellulose paper*  
CAS No.: 9004-34-6

Substance rating: No criteria for classification or naming of chemical not required.  
Formula:  $(C_6H_{10}O_5)_n$   
REACH Reg. No.: exempt, Annex IV  
EC No.: 232-674-9  
Concentration: 1 - <10 %  
acc. CLP (GHS): The criteria for classification are not fulfilled.

Substance name: *chemicals/mixture until 1%*  
CAS No.: -

Substance rating: No criteria for classification or naming of chemical not required.  
Concentration: 0,1 - <1 %  
acc. CLP (GHS): The criteria for classification are not fulfilled.

#### 25 mL CrO<sub>4</sub><sup>2-</sup>-1

Substance name: *nitric acid*  
CAS No.: 7697-37-2

Substance rating: H272, Ox. Liq. 3, H290, Met. Corr. 1, H314, Skin Corr. 1A, H331, Acute Tox. 3 inh.  
Formula:  $HNO_3 \cdot H_2O$   
Pseudonym (de): Hydrogennitrat, Scheidewasser  
REACH Reg. No.: 01-2119487297-23-xxxx  
EC No.: 231-714-2  
Concentration: 13 - <20 %  
acc. CLP (GHS): H290, Met. Corr. 1, H314, Skin Corr. 1B, H332, Acute Tox. 4 inh.

Indice No.: 007-004-00-1

### 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 16.2.

## 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 dust with wetted tissue. Remove contaminated clothing immediately. Rinse the affected skin or mucous membrane thoroughly for min. 15 minutes under running water. (If possible) use soap. Avoid neutralisation. Then apply a loose bandage.



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- 4.1.2 After EYE Contact**  
Rub dust with teardrops from eyes or: 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. If vomiting and if insensible place patient in recovery position and keep airways free. After inhalation of dust fresh air should be inhaled. ---
- 4.1.4 After ORAL Intake**  
After oral intake lots of water with activated charcoal supplement should be drunk after it has been ingested. Do not induce vomiting under any circumstances. Do not make any efforts to neutralise it. Contact medical advice for possible consequences.
- 4.2 Most important symptoms and effects, both acute and delayed**  
Rapid penetration and destruction of the skin. Especially in the heated form.  
Causes severe skin burns and eye damage.
- 4.3 Indication of any immediate medical attention and special treatment needed**  
CORROSIVE DAMAGE: After SKIN CONTACT rinse with water for a long time. Efforts to neutralise the substance can frequently make matters worse. Apply glucocorticosteroides following inflammatory reactions. 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. After INTAKE administer aluminium oxide drug suspensions. Administer a prophylaxis to counter pulmonary oedema following the INGESTION of corrosive aerosols. In the event of RESPIRATORY DISTRESSES ensure that the patient inhales oxygen. ---

## SECTION 5: Firefighting measures

- 5.1 Extinguishing media**
  - 5.1.1 Suitable 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.
  - 5.1.2 Unsuitable extinguishing media**  
no data available
- 5.2 Special hazards arising from the substance or mixture**  
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. Spray any vapours released with water. Retent fire water. Use only acid-resistant safety equipment.  
For great amount - if necessary - protective breathing apparatus which is independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of a large-scale formation of toxic substances.
- 5.4 Additional information**  
Danger for environment **only in the event of a large-scale leakage** or formation of hazardous substances.

## SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures**  
Wear suitable protective gloves (see 8.2.2). 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**  
Avoid contact of substance/mixture to environment.  
**PBT:** not applicable  
**vPvB:** not applicable
- 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**  
see information in section 5.4,7,8 and 13



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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

Safe storage is guaranteed in the original packaging. Storage class (German chemical industry): see chapter 12.1

**Storage class (VCI):** 8B

**Water hazard class (DE):** 1

### 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.

If CE labelling: Product for in-vitro-diagnostic use (IVD) or Accessory for medical use

## SECTION 8: Exposure controls /personal protection

### 8.1 Control parameters

#### 100 test strips

Chemical: *PVC foil (CAS 9002-86-2)*

CAS No.: -

Chemical: *cellulose paper*

CAS No.: 9004-34-6

TRGS 900 (DE): Staub 1.25 A / 4 E mg/m<sup>3</sup>  
E/e respirable

SUVA(CH) MAK value: 3 a ppm

NIOSH: TWA 10 (total) / 5 (resp) 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 15 (total) / 5 (resp) mg/m<sup>3</sup>

Chemical: *chemicals/mixture until 1%*

CAS No.: -

#### 25 mL CrO<sub>4</sub><sup>2-</sup> -1

Chemical: *nitric acid*

CAS No.: 7697-37-2

DNEL: [inh] (1.3) mg/m<sup>3</sup>  
DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): no hazard identified  
PNEC = Predicted No Effect Concentration

EU value: 1 ppm / 2.6 mg/m<sup>3</sup>

TRGS 900 (DE): 1 ppm / 2,6 mg/m<sup>3</sup>  
E/e respirable

Short-term exposure factor: -

skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 2 ppm / 5 mg/m<sup>3</sup>

NIOSH: [TWA] 2 ppm / 5 mg/m<sup>3</sup>

NIOSH STEL: 4 ppm / 10 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: List of highly hazardous chemicals, toxics and reactives Yes (TQ = 500 lbs) n/a; [TWA] 2 ppm / 5 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 Skin protection / Hand protection

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

#### 8.2.3 Eye / Face 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 clothing damage, and to avoid contamination with these hazards.



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- 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.
- 8.2.6 Thermal hazards**  
no data available
- 8.3 Limitation and monitoring of environmental exposure**  
Do not release product into environment.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

**100 test strips**

- |                                      |                   |
|--------------------------------------|-------------------|
| a) State of aggregation:             | solid             |
| b) Colour:                           | colored           |
| c) Odor:                             | odorless          |
| d) Melting point:                    | no data available |
| e) Boiling point:                    | no data available |
| f) Flammability:                     | no data available |
| g) Explosive limits (lower / upper): | no data available |
| h) Flash point:                      | no data available |
| i) Flashing temperature:             | no data available |
| j) Decomposition temperature:        | no data available |
| k) pH value:                         | no data available |
| l) Kinematic viscosity:              | no data available |
| m) Solubility in water:              | no data available |
| n) Dispersion coefficient (o/w) :    | no data available |
| o) Vapour pressure (20°C):           | no data available |
| p) Specific gravity:                 | no data available |
| q) Relative vapour density (air=1) : | no data available |
| r) Particle size:                    | no data available |

**25 mL CrO<sub>4</sub><sup>2-</sup> -1**

- |                                      |                   |
|--------------------------------------|-------------------|
| a) State of aggregation:             | liquid            |
| b) Colour:                           | colourless        |
| c) Odor:                             | nitric            |
| d) Melting point:                    | no data available |
| e) Boiling point:                    | no data available |
| f) Flammability:                     | no data available |
| g) Explosive limits (lower / upper): | no data available |
| h) Flash point:                      | no data available |
| i) Flashing temperature:             | no data available |
| j) Decomposition temperature:        | no data available |
| k) pH value:                         | 0-1               |
| l) Kinematic viscosity:              | no data available |
| m) Solubility in water:              | 0-100 %           |
| n) Dispersion coefficient (o/w) :    | no data available |
| o) Vapour pressure (20°C):           | no data available |
| p) Specific gravity:                 | 1,11 g/mL         |
| q) Relative vapour density (air=1) : | no data available |
| r) Particle size:                    | no data available |

### 9.2 Other information

**Properties relevant to substance groups**

Substances are highly corrosive.



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## 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

Can react violently with organic material. No further data available.

### 10.4 Conditions to avoid

No more required.

### 10.5 Incompatible materials

no additional data available

### 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 the hazard classes according regulation (EC) 1272/2008

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

#### 100 test strips

Chemical: *PVC foil (CAS 9002-86-2)* CAS No.: -  
 TSCA Inventory: listed

Chemical: *cellulose paper* CAS No.: 9004-34-6  
 TSCA Inventory: listed California Proposition 65 List: not listed  
 Exposure Routes: inhalation, skin and/or eye contact  
 Target Organs: Eyes, skin, respiratory system  
 Symptoms: irritation eyes, skin, mucous membrane  
 Australia NICNAS: not listed Canada CEPA 1999: DSL yes  
 Japan CSCL/PRTR: not listed, Japan PDSCL: not listed  
 Japan ISHL: not listed  
 South Korea TCCA: not listed  
 Korea Exist.Chem.Inventory: KE-05339  
 LD50 orl rat : > 5000 mg/kg  
 LC50 ihl rat : > 5,800 mg/L/4H

Chemical: *chemicals/mixture until 1%* CAS No.: -  
 TSCA Inventory: all listed, <1%  
 Korea Exist.Chem.Inventory: listed

#### 25 mL CrO<sub>4</sub><sup>2-</sup> -1

Chemical: *nitric acid* CAS No.: 7697-37-2  
 TSCA Inventory: listed California Proposition 65 List: not listed  
 Exposure Routes: inhalation, ingestion, skin and/or eye contact  
 Target Organs: Eyes, skin, respiratory system, teeth  
 Symptoms: irritation eyes, skin, mucous membrane; delayed pulmonary edema, pneumonitis, bronchitis; dental erosion  
 Australia NICNAS: not listed Canada CEPA 1999: DSL Yes  
 Japan CSCL/PRTR: not listed, Japan PDSCL: Deleterious Substance  
 Japan ISHL: listed ≥1,0%/≥1,0%, Article 57-2 (SDS required)  
 South Korea TCCA: Accident Precaution Chemical Yes  
 Korea Exist.Chem.Inventory: KE-25911, >10% Toxic 97-1-246, Acc. Precaution Chem.  
 LC<sub>50</sub> Low orl hmn : 1500 mg/kg/NOAEC  
 LC50 ihl rat : 2,65 mg/L/4H  
 Acute Effects: Cause after skin contact, impairments of health when ingested in small quantities.  
 TRGS 905 (DE): R F D



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## 11.2 Other hazards

**Possible endocrine disrupting effects**

no data available

**Other information**

no additional data available

## SECTION 12: Ecological information

### 12.1 Toxicity

Following information is valid for pure substances.

**100 test strips**

Chemical: *PVC foil (CAS 9002-86-2)*

CAS No.: -

Chemical: *cellulose paper*

CAS No.: 9004-34-6

Water hazard class (DE): nwg

Storage class (VCI): 11

Chemical: *chemicals/mixture until 1%*

CAS No.: -

Water hazard class (DE): 1

Storage class (VCI): 12-13

**25 mL CrO<sub>4</sub><sup>2-</sup> -1**

Chemical: *nitric acid*

CAS No.: 7697-37-2

Avoid contact of substance/mixture to environment.

PNEC (fresh water): no hazard identified

PNEC = Predicted No Effect Concentration

LC50 daphnia magna/48h: 180 mg/L

LC50 fish/96h: [4d] 12 g/L

Water hazard class (DE): 1 WGK No.: 0414

Storage class (VCI): 8 B

### 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

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher

### 12.6 Endocrine disrupting properties

no data available

### 12.7 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



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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 ADR*  
 Classification code: M11      Tunnel restriction code: E  
 Limited Quantity: acc. ADR 3.3.1/251: see LQ in Alternative declaration for transportation  
*Air transport ICAO*  
 PAX: 960      max. weight PAX: 10 KG  
 CAO: 960      max. weight CAO: 10 KG  
*Maritime transport IMDG*  
 EmS: F-A, S-P      Storage category: A

Or use **Alternative declaration for transportation:**  
 UN No.: (see below) class 8 II, **Excepted Quantities** ( $\leq 30 \text{ mL} / \Sigma \leq 500 \text{ mL}$ ) = ADR/ IATA E2  
 or

**14.1 UN number:** 3264      **14.2 UN proper shipping name:** Corrosive liquid, acidic, inorganic, n.o.s. (nitric acid solution)  
**14.3 Class:** 8      **14.4 Packing group:** II  
*Road transport ADR*  
 Classification code: C1  
 Limited Quantity: 1 L      Tunnel restriction code: E  
 Excepted Quantity: E 2  
*Air transport ICAO*  
 Limited Quantity: LQ 22  
 Excepted Quantity: E 2  
 PAX: 851      max. weight PAX: 1 L  
 CAO: 855      max. weight CAO: 30 L  
*Maritime transport IMDG*  
 EmS: F-A, S-B      Storage category: B

### 14.5 Environmental hazards

none

### 14.6 Special precautions for user

not necessary

### 14.7 Carriage in bulk by sea in accordance with IMO instruments

Not applicable.

## SECTION 15: Regulatory information

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

Dangerous Substances Protection Act (DE: Chemikaliengesetz - ChemG), Aug 2013, Stand: Okt 2020  
 Ordinance on protection against dangerous substances (E: Gefahrstoffverordnung - GefStoffV), Nov 2010, Stand: Mrz 2017  
 TRGS 201, Classification and labeling of activities involving hazardous substances, Feb 2017  
 TRGS 220, National aspects when preparing safety data sheets, Jan 2017  
 TRGS 400, Risk assessment for activities involving hazardous substances, Jul 2017  
 TRGS 401, Skin contact hazard - identification, assessment, action, Jun 2008, status: Feb 2011  
 BekGS 408, Application of the GefStoffV and the TRGS with the entry into force of the CLP regulation, December 2009, status: Jan 2012  
 TRGS 500, Protective measures, Mai 2008  
 TRGS 510, Storage of hazardous substances in portable containers from March 2013, status: Oct 2015  
 Chapter 4, Measures when storing hazardous substances up to 50 kg (small quantity regulation)  
 Wasserhaushaltsgesetz - WHG, Section 3 Handling substances hazardous to water, Jul 2009, status: Aug 2016  
 MN leaflet/instructions for use, also at [www.mn-net.com](http://www.mn-net.com)  
 If necessary, observe other country-specific regulations.

### 15.2 Chemical safety assessment

not necessary for these small amounts



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# Safety Data Sheet

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## SECTION 16: Other information

### 16.1 Changes compared to the last version

Between versions 2.2.2.4 and 2.2.2.2 following changes were applied: - 2 substance data corrected

### 16.2 List of H and P phrases

#### 16.2.1 List of relevant H phrases

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H332	Harmful if inhaled.

#### 16.2.2 List of relevant P phrases

P260sh	Do not breathe dust/vapours.
P280sh	Wear protective gloves/eye protection.
P303+361+353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
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.

### 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 Sources of key data

KÜHN, BIRETT, Leaflets on hazardous materials, 2021

Directive 1999/92/EG Minimum requirements to improve the safety and health protection of workers at risk from potentially explosive atmospheres

SUVA .CH, limit values in the air at work 2009, revised on 01/2009

Regulation 790/2009/EU, adaptation of Regulation 1272/2008/EU to technical and scientific progress (1st ATP)

Regulation 453/2010/EU, adaptation of the REACH regulation 1907/2006/EG

Regulation 487/2013/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (4th ATP)

Regulation 1221/2015/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (7th ATP)

Regulation 776/2017/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (10th ATP)

Regulation 669/2018/EU, adaptation of Regulation 1272/2008/EC to technical and scientific progressText (11th ATP)

Regulation 1480/2018/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (13th ATP)

Regulation 521/2019/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (12th ATP)

TRGS 900, German rules of technology on limit values in the air at work, as of 03/2019

Regulation 217/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (14th ATP)

Regulation 878/2020/EU, adaptation of Annex II of the REACH regulation 1907/2006/EG

Regulation 1182/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (15th ATP)

Regulation 643/2021/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (16th ATP)

Regulation 849/2021/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (17th ATP)

#### revisions/updates

*Reason for revision: 2014-02 Corrected structure of the sections according to Regulation 453/2010/EU, if necessary*

*2014-04 adjustment according Regulation 487/2013/EU*

*2016-03 adjustment according Regulation 1221/2015/EU*

*2017-11 adjustment according the ECHA registration dossier*

*2022-11 adjustment according Regulation 878/2020/EU*

### 16.5 Further information

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### 16.6 Legend / Abbreviations

acc:	according
ADR:	Convention concerning the International Carriage of Dangerous Goods by Road
Act:	acute
BAT:	biological workplace tolerance value



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CAO: Cargo Aircraft Only  
 Carc: carcinogen  
 CAS: Chemical Abstracts Service  
 CLP: Classification, Labelling and Packaging regulation  
 CMR: carcinogen, mutagen, reproduction toxic  
 Corr: corrosive  
 COD: chemical oxygen demand  
 CSCL: Chemical Substance Control Law (Jp)  
 Dam: damage  
 DNEL: Derived No-Effect Level (for workers)  
 derm: dermal  
 dog: dog  
 EC10: Concentration causing a toxic effect in 10% of the test organisms  
 EC: European Community  
 EC-Nr: Substance number of the EC substance inventory  
 EmS: Guide to accident management measures on ships  
 EU: European Union  
 fish: fish (not specified)  
 GHS: Global Harmonized System of Classification and Labeling of Chemicals  
 gpg: guinea pig  
 ICAO: International Civil Aviation Organization  
 ihl: inhaled  
 IMDG: International Maritime Dangerous Goods Code  
 intrav: intravenous  
 ipt: intraperitoneal  
 ISHL: Industrial Safety and Health Law (Jp)  
 LC50: letale concentration 50%  
 LD50: letale dosis 50%  
 leuciscus idus: fisch, ide, orfe  
 MAK: maximum workplace concentration  
 Met: Metall  
 mus: mouse  
 Muta: mutagen  
 NIOSH: National Institute for Occupational Safety and Health (US)  
 NRD: Non-rapidly degradable  
 onchorhynchus mykiss: fisch, rainbow trout  
 orl: oral  
 OSHA: Occupational Safety and Health Administration  
 PAX: transport on passenger planes allowed  
 PBT: persistent, bioaccumulating, toxic substance  
 pH: pH value  
 pimephales promelas: fisch, fathead minnow  
 PNEC: Predicted No Effect Concentration  
 PROC 15: Process category 'for laboratory use'  
 PRTR: Law for PRTR and Promotion of Chemical Management (Jp)  
 PVC: polyvinyl chloride  
 quail: bird, quail  
 rat: rat  
 rbt: rabbit  
 RD: rapidly degradable  
 RE: repeated  
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals  
 REF: item number, reference number  
 Reg.No.: rRegistration number  
 Repr: harmful to reproduction  
 Resp: respiratory  
 RIP: REACH Implementations Projects  
 scu: sub cutan  
 SDS: safety data sheet  
 Sens: sensitisation  
 STEL: short term exposure limit  
 STOT: Specific Target Organ Toxicity  
 SVHC: Substance of Very High Concern  
 t/a: tons per year  
 TCCA: Toxic Chemicals Control Act (S. Korea)  
 Tox: toxic  
 TSCA: The Toxic Substances Control Act (US)  
 TWA: time weighted average  
 TRGS: technical regulations (DE)



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vPvB: very persistent, very bioaccumulating substance

## 16.7 Training advice

Regular safety training. 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.



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