

# Safety Data Sheet

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

REF: 985023	NANOCOLOR COD 10000	Page: 1/13
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## SECTION 1: Identification of the substance/mixture and of the company

### 1.1 Product identifier

REF 985023  
 Product name NANOCOLOR COD 10000

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.  
 20 x 6 mL COD 10 000 (R0) UFI: NSSU-M3RA-S205-RHRA

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

**Relevant identified uses**  
 Product for analytical use.  
 Exposure Scenario Classification according REACH, RIP 3.2 Codes: SU 0-2, PC 21, PROC 15, AC 0  
 The exposure scenario is integrated into sections 1-16.

**Uses advised against**  
 not described

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

**Manufactured by:**  
 MACHEREY-NAGEL GmbH & Co. KG  
 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>>

Lieferant / Supplier:  
 Carl Roth GmbH + Co KG  
 Schoemperlenstr. 3-5  
 76105 Karlsruhe, Germany  
 +49 721 5606 0  
 sicherheit@carlroth.de

## SECTION 2: Hazard identification

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



Signal word

DANGER

#### Hazard identification

#### Hazard classes/categories

H302	Acute Tox. 4 oral
H312	Acute Tox. 4 derm.
H314	Skin Corr. 1B
H317	Skin Sens. 1
H332	Acute Tox. 4 inh.
H340	Muta. 1B
H350	Carc. 1A
H360Df	Repr. 1B
H373	STOT RE 2
H412	Aquatic Chronic 3

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

6 mL COD 10 000 (R0)



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GHS05 GHS07 GHS08

Signal word DANGER

Hazard identification	Hazard classes/categories
H302	Acute Tox. 4 oral
H312	Acute Tox. 4 derm.
H314	Skin Corr. 1B
H317	Skin Sens. 1
H332	Acute Tox. 4 inh.
H340	Muta. 1B
H350	Carc. 1A
H360Df	Repr. 1B
H373	STOT RE 2
H412	Aquatic Chronic 3

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). Inner packages up to 10 mL need max. 2 symbols (Annex I - 1.5.2.4.1 / 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). This labelling exemption is NOT valid for sensiblizing substances.

6 mL COD 10 000 (R0)



GHS05 GHS08

Signal word: DANGER

H314, H317, H340, H350, H360Df

Causes severe skin burns and eye damage. May cause an allergic skin reaction. May cause genetic defects. May cause cancer. May damage the unborn child. Suspected of damaging fertility.

P201, P260sh, P280sh, P303+361+353, P305+351+338, P310, P405

Obtain special instructions before use. 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. Store locked up.

## Label elements of the complete product



GHS05 GHS08

Signal word: DANGER

H314, H317, H340, H350, H360Df

Causes severe skin burns and eye damage. May cause an allergic skin reaction. May cause genetic defects. May cause cancer. May damage the unborn child. Suspected of damaging fertility.

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## 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 oral intake, inhalation of vapours/dust, skin contact, impairments of health when ingested in small quantities. May cause sensitization by skin contact, also in repeated contact of small amounts. May cause genetic defects. May cause cancer. May cause cancer if inhaled. Can accumulate within the body.

The risk assessment of the tube tests showed no risk H331 "Toxic if inhaled." at the application.

### 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

#### 6 mL COD 10 000 (R0)

Substance name: *potassium dichromate*  
CAS No.: 7778-50-9

Substance rating: H272, Ox. Liq. 2, H301, Acute Tox. 3 oral, H312, Acute Tox. 4 derm., H314, Skin Corr. 1B, H317, Skin Sens. 1, H318, Eye Dam. 1, H330, Acute Tox. 2 inh., H334, Resp. Sens. 1, H335, STOT SE 3, H340, Muta. 1B, H350, Carc. 1A, H360FD, Repr. 1B, H372, STOT RE 1, H400, Aquatic Acute 1, H410, Aquatic Chronic 1

Formula:  $K_2Cr_2O_7$

Pseudonym (de): Kaliumbichromat

REACH Reg. No.: 01-2119454792-32-0004

**SVHC listed:** < exempt for formulation+use acc. Art.56(3)+Q&A1030

EC No.: 231-906-6 Indice No.: 024-002-00-6

Specific concentration limit: STOT SE 3; H335 c ≥ 5%

Concentration: 0,38 - <1,26 % Correlation factor: x 0.79 (= %CrO<sub>4</sub>)

The classification refers to the weight percentage of the metal (according to CLP regulation 2008/1272/EG Annex VI, 1.1.3.2 Note 1)

acc. CLP (GHS): H312, Acute Tox. 4 derm., H317, Skin Sens. 1, H340, Muta. 1B, H350, Carc. 1A, H360Df, Repr. 1B, H373, STOT RE 2, H412, Aquatic Chronic 3

Substance name: *mercury(II) sulfate*  
CAS No.: 7783-35-9

Substance rating: H300, Acute Tox. 2 oral, H310, Acute Tox. 1 derm., H330, Acute Tox. 2 inh., H373, STOT RE 2, H400, Aquatic Acute 1, H410, Aquatic Chronic 1

Formula:  $HgSO_4$

REACH Reg. No.: not necessary, amount <1 t/a

EC No.: 231-992-5 Indice No.: 080-004-00-7

Specific concentration limit: STOT RE 2 H373; c ≥ 0,1%

Concentration: 0,15 - <0,37 % Correlation factor: x 0.68 (= %Hg)

The classification refers to the weight percentage of the metal (according to CLP regulation 2008/1272/EG Annex VI, 1.1.3.2 Note 1)

acc. CLP (GHS): H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H332, Acute Tox. 4 inh., H373, STOT RE 2, H413, Aquatic Chronic 4

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Substance name: *silver sulfate*  
 CAS No.: 10294-26-5

Substance rating: H318, Eye Dam. 1, H400, Aquatic Acute 1, H410, Aquatic Chronic 2  
 Formula:  $Ag_2SO_4$   
 Pseudonym (de): Disilber(I)-sulfat  
 REACH Reg. No.: 01-2119918297-31-xxxx  
 EC No.: 233-653-7  
 Concentration: 0,1 - <1 % Correlation factor: x 0.69 (= %Ag)  
 The classification refers to the weight percentage of the metal (according to CLP regulation 2008/1272/EG Annex VI, 1.1.3.2 Note 1)  
 acc. CLP (GHS): The criteria for classification are not fulfilled.

Substance name: *sulfuric acid*  
 CAS No.: 7664-93-9

Substance rating: H314, Skin Corr. 1B  
 Formula:  $H_2SO_4 \cdot (H_2O)$   
 REACH Reg. No.: 01-2119458838-20-xxxx  
 EC No.: 231-639-5 Indice No.: 016-020-00-8  
 Specific concentration limit: Eye Irrit. 2; H319: 5 % ≤ C < 15 % - Skin Irrit. 2; H315: 5 % ≤ C < 15 % - Skin Corr 1A; H314 c ≥ 15%  
 Concentration: 51 - <65 %  
 acc. CLP (GHS): H314, Skin Corr. 1B

### 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

Causing allergies. 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.

#### 4.1.2 After EYE Contact

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

#### 4.1.3 After INHALATION of vapours

After inhalation of foam or vapour fresh air should be inhaled. Keep airways free. If vomiting and if insensible place patient in recovery position and keep airways free. ---

#### 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

Chronic effects: Potassium dichromate: Repeated contact, even in small amounts, can lead to sensitization. Rapid penetration and destruction of the skin. Especially in the heated form.

Causes severe skin burns and eye damage.

CMR Effekte: May cause genetic defects. May cause cancer. May cause cancer if inhaled. May damage the unborn child. Suspected of damaging fertility. Can accumulate in the body.

### 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 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 DISTRESS ensure that the patient inhales oxygen. Inform patient respectively further measures and the possibility of long-term damages. ---



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## 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

Do not breathe vapours. 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

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Handling in accordance with the test instruction, that comes with the product. Use a safety bottle when shaking test tubes.

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

Safe storage is guaranteed in the original packaging . Products which are also classified as toxic must be kept under lock and key.

Storage class (German chemical industry): see chapter 12.1

Storage class (VCI): 8B

Water hazard class (DE): 3

#### 7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage, so that they are not immediately accessible to outside parties. Use inbreakable container for transport of glass bottles.

### 7.3 Specific end use(s)

Product for analytical use.



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## SECTION 8: Exposure controls /personal protection

### 8.1 Control parameters

**6 mL COD 10 000 (R0)**

Chemical: *potassium dichromate* CAS No.: 7778-50-9  
 DNEL: [inh] 0.01 mg/m<sup>3</sup>  
DNEL = Derived No-Effect Level (for workers)  
 TRGS 900 (DE): [CrVI] (0,05 E ausgesetzt ) mg/m<sup>3</sup>  
E/e respirable  
 Short-term exposure factor: (4), H  
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded  
 SUVA(CH) MAK value: 0,05 e mg/m<sup>3</sup>  
 SUVA(CH) BAT value: [U/b] 20 µg/L  
 NIOSH: NTP Report on Carcinogens (RoC) List Yes (Chromium VI - Known to be a human carcinogen); TWA  
 8h 0.0002 CrO<sub>3</sub> 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: [CrO<sub>3</sub>][TWA] 0.005 mg/m<sup>3</sup>

Chemical: *mercury(II) sulfide* CAS No.: 7783-35-9

EU value: [Hg] 0.02 e mg/m<sup>3</sup>  
 TRGS 900 (DE): [Hg] 0,02 E mg/m<sup>3</sup>  
E/e respirable  
 Short-term exposure factor: 8 (I), H, Sh  
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded  
 SUVA(CH) MAK value: [Hg][MAK] 0,02 e/[STEL] 0,16 e mg/m<sup>3</sup>  
 SUVA(CH) BAT value: [Krea U/d] 35 µg/L  
 TRGS 903 (DE): [U/a Kreatinin ] 25 µg/g  
B blood, U urine, a no limitation, b end of exposition or shift  
 NIOSH: [Hg Vapor: TWA<sub>skin</sub>] 0.05; other 0.1 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] 0.1 mg/m<sup>3</sup>

Chemical: *silver sulfate* CAS No.: 10294-26-5

DNEL: no data  
DNEL = Derived No-Effect Level (for workers)  
 PNEC (fresh water) : 0.04 µg/L  
PNEC = Predicted No Effect Concentration  
 EU value: [Ag] 0.01e mg/m<sup>3</sup>  
 TRGS 900 (DE): [Ag] 0,01 E mg/m<sup>3</sup>  
E/e respirable  
 Short-term exposure factor: 2 (I)  
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded  
 NIOSH: [TWA] 0.01 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] 0.01 mg/m<sup>3</sup>

Chemical: *sulfuric acid* CAS No.: 7664-93-9

DNEL: [inh] 50 µg/m<sup>3</sup>  
DNEL = Derived No-Effect Level (for workers)  
 PNEC (fresh water) : 2.5 µg/L  
PNEC = Predicted No Effect Concentration  
 EU value: 0.1 e mg/m<sup>3</sup>  
 TRGS 900 (DE): 0.1 E mg/m<sup>3</sup>  
E/e respirable  
 Short-term exposure factor: 1 (I), Y  
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded  
 SUVA(CH) MAK value: 0,1 e mg/m<sup>3</sup>  
 NIOSH: NTP Report on Carcinogens (RoC) List Yes (Known to be a human carcinogen); [TWA] 1 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] 1 mg/m<sup>3</sup>

### 8.2 Exposure controls

Good ventilation and extraction system in the room, floor resistant to chemicals with floor drainage and washing facilities. The highest level of cleanliness must be maintained at the workplace.





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- 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.
- 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

**6 mL COD 10 000 (R0)**

a) State of aggregation:	liquid
b) Colour:	brown
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:	0
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:	1,50 g/cm <sup>3</sup>
q) Relative vapour density (air=1) :	no data available
r) Particle size:	no data available

### 9.2 Other information

No data is available for the other parameters for the mixtures, since no registration and no chemical safety report is required.

**Properties relevant to substance groups**

Substances are highly corrosive.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Strong CORROSIVE, 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.



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## 10.4 Conditions to avoid

Observe the storage temperature printed on it. 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.

#### 6 mL COD 10 000 (R0)

Chemical: *potassium dichromate* CAS No.: 7778-50-9  
 TSCA Inventory: listed California Proposition 65 List: listed cancer, developmental, female, male  
 ACGIH: [CrVI] 0.05 mg/m<sup>3</sup>  
 Exposure Routes: inhalation, ingestion, skin and/or eye contact  
 Target Organs: Blood, respiratory system, liver, kidneys, eyes, skin; [lung cancer]  
 Symptoms: irritation respiratory system; nasal septum perforation; liver, kidney damage; leukocytosis (increased blood leukocytes), leukopenia (reduced blood le  
 Japan CSCL/PRTR: PRTR: ≥0,1% Cr specific class I, Japan PDSCL: Deleterious substance  
 Japan ISHL: listed ≥0,1%/≥0,1%, Article 57-2 (SDS required)  
 South Korea TCCA: yes, Restricted Chemical  
 Korea Exist.Chem.Inventory: not listed  
 LD50 orl rat : 25 mg/kg  
 LC<sub>50</sub> orl gpg : 163 mg/kg  
 LC50 ihl rat : 0,094 mg/L/4H  
 Acute Effects: Cause after inhalation of vapours/dust, skin contact, impairments of health when ingested in small quantities.  
 Chronic Effects: May cause sensitization by skin contact, also in repeated contact of small amounts. May cause damage to organs through prolonged or repeated exposure.  
 Carcinogenic Effects: May cause genetic defects. May cause cancer. May cause cancer if inhaled.  
 EU carcinogen: carc. 1B, mutag. 1B, repr. 1B  
 TRGS 905 (DE): K2  
 TRGS 907 (DE): Sh

Chemical: *mercury(II) sulfate* CAS No.: 7783-35-9  
 TSCA Inventory: listed California Proposition 65 List: listed developmental  
 Exposure Routes: inhalation, skin absorption, ingestion, skin and/or eye contact  
 Target Organs: Eyes, skin, respiratory system, central nervous system, kidneys  
 Symptoms: irritation eyes, skin; cough, chest pain, dyspnea (breathing difficulty), bronchitis, pneumonitis; tremor, insomnia, irritability, indecision, headac  
 Australia NICNAS: not listed Canada CEPA 1999: yes (mercury compound - Item 8.)  
 Japan CSCL/PRTR: PRTR: ≥1,0%Hg class I, Japan PDSCL: Poisonous substance  
 Japan ISHL: listed ≥0,3%/≥0,1%, Article 57-2 (SDS required)  
 South Korea TCCA: not listed  
 Korea Exist.Chem.Inventory: KE-23132, Toxic 97-1-140  
 LD50 orl rat : 57 mg/kg  
 Acute Effects: Cause after oral intake, inhalation of vapours/dust, skin contact, impairments of health when ingested in small quantities.  
 Chronic Effects: May cause damage to organs through prolonged or repeated exposure.  
 TRGS 907 (DE): Sh

Chemical: *silver sulfate* CAS No.: 10294-26-5  
 TSCA Inventory: listed  
 Exposure Routes: inhalation, ingestion, skin and/or eye contact  
 Target Organs: Nasal septum, skin, eyes  
 Symptoms: Blue-gray eyes, nasal septum, throat, skin; irritation, ulceration skin; gastrointestinal disturbance  
 Japan CSCL/PRTR: PRTR: ≥1,0%Ag class I, Japan PDSCL: Deleterious substance  
 Japan ISHL: listed ≥1,0%/≥0,1%  
 Korea Exist.Chem.Inventory: KE-12273, >25% Toxic 97-1-92  
 LD50 orl rat : 2000-5110 mg/kg





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Chemical:	<i>sulfuric acid</i>	CAS No.: 7664-93-9
TSCA Inventory:	listed	California Proposition 65 List: not listed
ACGIH:	1 ppm	
Exposure Routes:	inhalation, ingestion, skin and/or eye contact	
Target Organs:	Eyes, skin, respiratory system, teeth	
Symptoms:	irritation eyes, skin, nose, throat; pulmonary edema, bronchitis; emphysema; conjunctivitis; stomatis; dental erosion; eye, skin burns; dermatitis	
Australia NICNAS:	not listed	Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR:	not listed, Japan PDSC: 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-32570, >10% Toxic 97-1-405, Acc. Precaution Chem.	
LD50 orl rat :	2140 mg/kg	
LC50 ihl mus :	0,85 mg/L/4H	
TRGS 905 (DE):	Kat 4	

## 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.

#### 6 mL COD 10 000 (R0)

Chemical:	<i>potassium dichromate</i>	CAS No.: 7778-50-9
LC50 fish/96h :	26.13 mg/L	
EC50 daphnia/48h :	0.77 mg/L	
Water hazard class (DE):	3	WGK No.: 339
Storage class (VCI):	6.1 B	

Chemical: *mercury(II) sulfate* CAS No.: 7783-35-9

May cause long lasting harmful effects to aquatic life. Avoid contact of substance/mixture to environment. Environmental hazards must not be labelled with P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).

Bio Toxicity:	LC 50 : 0.5 HgCl <sub>2</sub> /48h mg/L
Water hazard class (DE):	3 WGK No.: 0412
Storage class (VCI):	6.1 B

Chemical: *silver sulfate* CAS No.: 10294-26-5

PNEC (fresh water) :	0.04 µg/L
PNEC = Predicted No Effect Concentration	
LC50 daphnia magna/48h :	0.22 µg/L
LC50 fish/96h :	[4d] 1.2 µg/L
EC10 pseudomonas putida/16h :	[24h] 0.41-0.54 µg/L
Water hazard class (DE):	3
Storage class (VCI):	12

Chemical: *sulfuric acid* CAS No.: 7664-93-9

PNEC (fresh water) :	2.5 µg/L
PNEC = Predicted No Effect Concentration	
LC50 fish/96h :	[NOEC, 65d] 25 µg/L
EC50 daphnia/48h :	100 mg/L
EC10 pseudomonas putida/16h :	[72h] 100 mg/L
Water hazard class (DE):	1 WGK No.: 0182
Storage class (VCI):	8 B

### 12.2 Persistence and degradability

not necessary



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## 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). Close container tightly.

### 13.1 Waste treatment methods

Not necessary, see above.

## 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:**

14.1 UN number: 2922

14.2 UN proper shipping name: Corrosive liquid, toxic, n.o.s. (mercury(II) sulfate, sulfuric acid solution)

14.3 Class: 8 Additionally class: 6.1 14.4 Packing group: II

Road transport ADR

Classification code: CT1 Tunnel restriction code: E

Limited Quantity: 1 L

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, contains only small quantities of hazardous substances, contains only small amounts of these substances

### 14.6 Special precautions for user

not necessary

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

Not applicable.



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## SECTION 15: Regulatory information

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

Chemicals Prohibition Ordinance - (DE: ChemVerbotsV), aktualisiert Jan 2017  
 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  
 TRGS 561, Activities involving carcinogenic metals and their compounds, Oct 2017  
 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

## SECTION 16: Other information

### 16.1 Changes compared to the last version

Between versions 2.2.2.19 and 2.2.2.2 following changes were applied: - 17 substance data corrected

### 16.2 List of H and P phrases

#### 16.2.1 List of relevant H phrases

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H332	Harmful if inhaled.
H340	May cause genetic defects.
H350	May cause cancer.
H360Df	May damage the unborn child. Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

#### 16.2.2 List of relevant P phrases

P201	Obtain special instructions before use.
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.
P405	Store locked up.

### 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  
 Directive 2004/37/EC on the protection of workers from the risk of carcinogens or mutagens at workSUVA .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  
 TRGS 907, German technical rules for listing substances and causes of sensitization, updated November 2011 Regulation



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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)  
 TRGS 905, German rules of technology for carcinogenic and mutagenic substances, as of March 18, 2016  
 Regulation 669/2018/EU, adaptation of Regulation 1272/2008/EC to technical and scientific progress (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
- 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 spezified)
- 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



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- mus: mouse
- Muta: mutagen
- NIOSH: National Institute for Occupational Safety and Health (US)
- NRD: Non-rapidly degradable
- onchorhynchus mykiss: fish, 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: fish, 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)
- 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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