

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985020	NANOCOLOR COD 60 in salt water	Page: 1/14
Printing date: 15.05.2024	Date of issue: 26.09.2022	Version: 2.2.2.19

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

1.1 Product identifier

REF 985020
 Product name NANOCOLOR COD 60 in salt water

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 3.85 mL CSB 60 salt water (R0) UFI: 6PUT-13RR-X20D-HT6F

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>>

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
H290	Met. Corr. 1
H301	Acute Tox. 3 oral
H311	Acute Tox. 3 derm.
H314	Skin Corr. 1 B
H317	Skin Sens. 1
H373	STOT RE 2
H411	Aquatic Chronic 2

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

3.85 mL CSB 60 salt water (R0)



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Signal word	DANGER
Hazard identification	Hazard classes/categories
H290	Met. Corr. 1
H301	Acute Tox. 3 oral
H311	Acute Tox. 3 derm.
H314	Skin Corr. 1 B
H315	Skin Irrit. 2
H317	Skin Sens. 1
H319	Eye Irrit. 2
H373	STOT RE 2
H411	Aquatic Chronic 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. 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).

3.85 mL CSB 60 salt water (R0)



Signal word: DANGER
H301, H311, H314, H317
Toxic if swallowed.Toxic in contact with skin.Causes severe skin burns and eye damage.May cause an allergic skin reaction.
P260sh, P264, P270, P271, P280sh, P301+310, P303+361+353, P305+351+338, P330, P333+313, P361+364, P405, P501
Do not breathe dust/vapours.Wash hands thoroughly after handling.Do not eat, drink or smoke when using this product.Use only outdoors or in a well-ventilated area.Wear protective gloves/eye protection.**IF SWALLOWED:** Immediately call a POISON CENTER/ doctor.**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.Rinse mouth.If skin irritation or rash occurs: Get medical advice/attention.Take off immediately all contaminated clothing and wash it before reuse.Store locked up.Dispose of contents/container to regulated waste treatment.

Label elements of the complete product



Signal word: DANGER
H301, H311, H314, H317
Toxic if swallowed.Toxic in contact with skin.Causes severe skin burns and eye damage.May cause an allergic skin reaction.
P260sh, P264, P270, P271, P280sh, P301+310, P303+361+353, P305+351+338, P330, P333+313, P361+364, P405, P501
Do not breathe dust/vapours.Wash hands thoroughly after handling.Do not eat, drink or smoke when using this product.Use only outdoors or in a well-ventilated area.Wear protective gloves/eye protection.**IF SWALLOWED:** Immediately call a POISON CENTER/ doctor.**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.Rinse mouth.If skin irritation or rash occurs: Get medical advice/attention.Take off immediately all contaminated clothing and wash it before reuse.Store locked up.Dispose of contents/container to regulated waste treatment.



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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 severe after oral intake, skin contact, impairments of health or can lead to death even when only ingested in small quantities. Cause after skin contact, impairments of health when ingested in small quantities. May cause sensitization by skin contact, also in repeated contact of small amounts. 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

Should not be released into the 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

3.85 mL CSB 60 salt water (R0)

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(l)-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. 1 B

Formula: $\text{H}_2\text{SO}_4 \cdot (\text{H}_2\text{O})$

REACH Reg. No.: 01-2119458838-20-xxxx

EC No.: 231-639-5

Index 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. 1 B

Substance name: *silver nitrate*
CAS No.: 7761-88-8

Substance rating: H272, Ox. Liq. 2, H290, Met. Corr. 1, H314, Skin Corr. 1 B, H318, Eye Dam. 1, H400, Aquatic Acute 1, H410, Aquatic Chronic 1

Formula: AgNO_3

REACH Reg. No.: 01-2119513705-43-xxxx

EC No.: 231-853-9

Index No.: 047-001-00-2

Concentration: 1 - <3 %

Correlation factor: x 0.635 (= %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): H290, Met. Corr. 1, H315, Skin Irrit. 2, H319, Eye Irrit. 2, H411, Aquatic Chronic 2



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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. 1 B, H317, Skin Sens. 1, H318, Eye Dam. 1, H330, Acute Tox. 2 inh., H334, Resp. Sens. 1, H335, resp. irrit. STOT SE 3, H340, Muta. 1 B, H350, Carc. 1 A, H360FD, Repr. 1 B, 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 - <0,1 %

Correlation factor: x 0.79 (= %CrO₄)

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): H317, Skin Sens. 1

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: HgSO₄

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: 3 - <3,7 %

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): H301, Acute Tox. 3 oral, H311, Acute Tox. 3 derm., H373, STOT RE 2, H412, Aquatic Chronic 3

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.

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 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.



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TOXIFICATION: Treat symptomatically. Secure the breathing, heart and circulatory function. Remove the substance quickly from the body. Mechanically induce vomiting or ensure the patient eats medicinal charcoal compressed tablets or drinks aluminium oxide drug suspensions. In order to ensure rapid passage through the colon (administer 2 tablespoons of dissolved Glauber's salt). Alleviation of pain, if necessary sedation. Shock treatment. Administer a prophylaxis to counter pulmonary oedema. Inform patient respectively further measures and the possibility of long-term damages. ---

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

Should not be released into the 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 from MACHEREY-NAGEL. 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): 5.1B

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.



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7.3 Specific end use(s)

Product for analytical use.

SECTION 8: Exposure controls /personal protection

8.1 Control parameters

3.85 mL CSB 60 salt water (R0)

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

EU value: [Hg] 0.02 e mg/m³

TRGS 900 (DE): [Hg] 0,02 E mg/m³
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/m³

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_{skin}] 0.05; other 0.1 mg/m³
[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/m³

Chemical: *potassium dichromate* CAS No.: 7778-50-9

DNEL: [inh] 0.01 mg/m³

DNEL = Derived No-Effect Level (for workers)

TRGS 900 (DE): [CrVI] (0,05 E ausgesetzt) mg/m³
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/m³

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 CrO₃ mg/m³
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: [CrO₃][TWA] 0.005 mg/m³

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/m³

TRGS 900 (DE): [Ag] 0,01 E mg/m³
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/m³
[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/m³

Chemical: *silver nitrate* CAS No.: 7761-88-8

EU value: 0.01 Ag e mg/m³

TRGS 900 (DE): 0.01 Ag E mg/m³
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

SUVA(CH) MAK value: 0,01 e mg/m³

NIOSH: TWA 0.01 mg/m³
[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/m³

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

DNEL: [inh] 50 µg/m³

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/m³

TRGS 900 (DE): 0.1 E mg/m³
E/e respirable



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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/m³
 NIOSH: NTP Report on Carcinogens (RoC) List Yes (Known to be a human carcinogen); [TWA] 1 mg/m³
 [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/m³

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.

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

3.85 mL CSB 60 salt water (R0)

a) State of aggregation:	liquid
b) Colour:	yellow
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 (K _{ow}):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.8 g/cm ³
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

9.2 Other information

9.2.1 Information on physical hazard classes

no data available

9.2.2 Other safety-related parameters



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

□□

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.

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.

3.85 mL CSB 60 salt water (R0)

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 severe after oral intake, skin contact, impairments of health or can lead to death even when only ingested in small quantities.
 Chronic Effects: May cause damage to organs through prolonged or repeated exposure.
 TRGS 907 (DE): Sh

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/m³
 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_Low orl gpg : 163 mg/kg
 LC50 ihl rat : 0,094 mg/L/4H
 Acute Effects: Cause after skin contact, impairments of health when ingested in small quantities. May cause sensitization by skin contact, also in repeated contact of small amounts.
 EU carcinogen: carc. 1B, mutag. 1B, repr. 1B
 TRGS 905 (DE): K2
 TRGS 907 (DE): Sh



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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

Chemical: *silver nitrate* CAS No.: 7761-88-8
 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-31281, >25% Toxic 97-1-92
 LD50 orl rat : 1173 mg/kg

TRGS 905 (DE): R F D

Chemical: *sulfuric acid* 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 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-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.

3.85 mL CSB 60 salt water (R0)

Substance name: *mercury(II) sulfate* CAS-Nr.: 7783-35-9

Harmful to aquatic life with long lasting effects. Do not release into the environment.

Environmentally hazardous substances/mixtures do not have to be labeled with P-phrases up to 125 mL (EU 1272/2008 Annex I Paragraph 1.5.2).

Bio Toxicity: LC 50 : 0.5 HgCl2/48h mg/L
 Water hazard class (DE): 3 WGK No.: 0412
 Storage class (VCI): 6.1 B

Substance name: *potassium dichromate* CAS-Nr.: 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



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Substance name: *silver sulfate* CAS-Nr.: 10294-26-5
 PNEC (fresh water): 0.04 µg/L
 PNEC = Predicted No Effected Concentration = concentration at which no effect on the environment is expected
 LC50 daphnia magna/48h: 0.22 µg/L
 LC50 fish/96h: [4d] 1.2 µg/L
 EC10 pseudomonas putita/16h: [24h] 0.41-0.54 µg/L
 Water hazard class (DE): 3
 Storage class (VCI): 12

Substance name: *silver nitrate* CAS-Nr.: 7761-88-8
 Toxic to aquatic life with long lasting effects. Do not release into the environment.
 Environmentally hazardous substances/mixtures up to 125 mL do not have to be labeled with H and P statements (EU 1272/2008 Annex I Paragraph 1.5.2).
 Water hazard class (DE): 3 WGK No.: 0185
 Storage class (VCI): 5.1 B

Substance name: *sulfuric acid* CAS-Nr.: 7664-93-9
 Do not release into the environment.
 PNEC (fresh water): 2.5 µg/L
 PNEC = Predicted No Effected Concentration = concentration at which no effect on the environment is expected
 LC50 fish/96h: [NOEC, 65d] 25 µg/L
 EC50 daphnia/48h: 100 mg/L
 EC10 pseudomonas putita/16h: [72h] 100 mg/L
 Water hazard class (DE): 1 WGK No.: 0182
 Storage class (VCI): 8 B

12.2 Persistence and degradability

12.3 Bioaccumulative potential

12.4 Mobility in soil

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 IATA DGR

Limited Quantity: PAX: 960 max. quantity PAX: 10 KG
 CAO: 960 max. quantity CAO: 10 KG

Maritime transport IMDG

EmS: F-A, S-P Staukategorie: A



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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. (silver nitrate, sulfuric acid solution)

14.3 Class: 8

14.4 Packing group: II

Road transport ADR

Classification code:	C1	Tunnel restriction code:	E
Limited Quantity:	1 L		
Excepted Quantity:	E 2		

Air transport IATA DGR

Limited Quantity:	PAX: 851	max. quantity PAX:	1 L
	CAO: 855	max. quantity CAO:	30 L
Excepted Quantity:	E 2		

Maritime transport IMDG

EmS:	F-A, S-B	Staukategorie:	B
Special instructions:	274		

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 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

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
 MN leaflet/instructions for use, also at 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

H	Between versions 2.2.2.19 and 2.2.2.2 following changes were applied: - 17 substance data corrected
H290	May be corrosive to metals.



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H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

16.2.2 List of relevant P phrases

P260sh	Do not breathe dust/vapours.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280sh	Wear protective gloves/eye protection.
P301+310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
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.
P330	Rinse mouth.
P333+313	If skin irritation or rash occurs: Get medical advice/attention.
P361+364	Take off immediately all contaminated clothing and wash it before reuse.
P405	Store locked up.
P501	Dispose of contents/container to regulated waste treatment.

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
 TRGS 907, German technical rules for listing substances and causes of sensitization, updated November 2011 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 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)
 Regulation 692/2022/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (18th 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 oxigen 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
- 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



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- 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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