

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 925703	NANOCONTROL NANOCHECK 2.0	Page: 1/20
Printing date: 20.07.2023	Date of issue: 29.07.2022	Version: 2.2.2.2

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

1.1 Product identifier

REF 925703
 Product name NANOCONTROL NANOCHECK 2.0

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 5 mL Blank (NULL)
 1 x 5 mL Prüflösung 1
 1 x 5 mL Prüflösung 2
 1 x 5 mL Prüflösung 3
 1 x 5 mL Prüflösung 4
 1 x 5 mL Prüflösung 5
 1 x 5 mL Prüflösung 6

UFI: 3MSW-13Q5-920G-1A9S
 UFI: GPSW-J3DJ-K20Y-PNVU
 UFI: 8SSW-232X-W20G-COFW

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)

Lieferant / Supplier:
 Carl Roth GmbH + Co KG
 Schimperlenstr. 3-5
 76185 Karlsruhe, Germany
 +49 721 5606 0
 sicherheit@carlroth.de

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
H225	Flam. Liq. 2
H317	Skin Sens. 1
H334	Resp. Sens. 1
H341	Muta. 2
H350i	Carc. 1 A
H360	Repr. 1 B
H410	Aquatic Chronic 1



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

5 mL Prüflösung 1



GHS02

Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2

5 mL Prüflösung 2



GHS02

Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2

5 mL Prüflösung 3



GHS02

Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2

5 mL Blank (NULL)

Signal word Do not need labelling as hazardous
-

No hazard class

5 mL Prüflösung 4



GHS07



GHS08



GHS09

Signal word DANGER

Hazard identification	Hazard classes/categories
H317	Skin Sens. 1
H334	Resp. Sens. 1
H341	Muta. 2
H350i	Carc. 1 A
H360	Repr. 1 B
H410	Aquatic Chronic 1

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5 mL Prüflösung 5



GHS07 GHS08 GHS09

Signal word DANGER

Hazard identification	Hazard classes/categories
H317	Skin Sens. 1
H334	Resp. Sens. 1
H341	Muta. 2
H350i	Carc. 1 A
H360	Repr. 1 B
H410	Aquatic Chronic 1

5 mL Prüflösung 6



GHS07 GHS08 GHS09

Signal word DANGER

Hazard identification	Hazard classes/categories
H317	Skin Sens. 1
H334	Resp. Sens. 1
H341	Muta. 2
H350i	Carc. 1 A
H360	Repr. 1 B
H410	Aquatic Chronic 1

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** and highly flammable chemicals/mixtures 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 sensitizing substances.

5 mL Prüflösung 1



GHS02

Signal word: DANGER

5 mL Prüflösung 2



GHS02

Signal word: DANGER

5 mL Prüflösung 3



GHS02



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Signal word: DANGER

5 mL Blank (NULL)

Do not need labelling as hazardous
Signal word: -

5 mL Prüflösung 4



Signal word: DANGER

H317, H334, H341, H350i, H360

May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing genetic defects. May cause cancer if inhaled. May damage fertility or the unborn child.

P201, P202, P261sh, P280sh, P284, P302+352, P333+313, P342+311, P362+364, P405, P501

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/vapours. Wear protective gloves/eye protection. [In case of inadequate ventilation] wear respiratory protection. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. Take off contaminated clothing and wash it before reuse. Store locked up. Dispose of contents/container to regulated waste treatment.

5 mL Prüflösung 5



Signal word: DANGER

H317, H334, H341, H350i, H360

May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing genetic defects. May cause cancer if inhaled. May damage fertility or the unborn child.

P201, P202, P261sh, P280sh, P284, P302+352, P333+313, P342+311, P362+364, P405, P501

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/vapours. Wear protective gloves/eye protection. [In case of inadequate ventilation] wear respiratory protection. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. Take off contaminated clothing and wash it before reuse. Store locked up. Dispose of contents/container to regulated waste treatment.

5 mL Prüflösung 6



Signal word: DANGER

H317, H334, H341, H350i, H360

May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing genetic defects. May cause cancer if inhaled. May damage fertility or the unborn child.

P201, P202, P261sh, P280sh, P284, P302+352, P333+313, P342+311, P362+364, P405, P501

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/vapours. Wear protective gloves/eye protection. [In case of inadequate ventilation] wear respiratory protection. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. Take off contaminated clothing and wash it before reuse. Store locked up. Dispose of contents/container to regulated waste treatment.

Label elements of the complete product



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Signal word: DANGER

H317, H334, H341, H350i, H360

May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing genetic defects. May cause cancer if inhaled. May damage fertility or the unborn child.

P201, P202, P261sh, P280sh, P284, P302+352, P333+313, P342+311, P362+364, P405, P501

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/vapours. Wear protective gloves/eye protection. [In case of inadequate ventilation] wear respiratory protection. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. Take off contaminated clothing and wash it before reuse. Store locked up. Dispose of contents/container to regulated waste treatment.

2.3 Other hazards

Possible hazards from physicochemical properties

Flammable properties.

Information pertaining to particular risks to human and possible symptoms

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. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing genetic defects. May cause cancer. May cause cancer if inhaled. May damage fertility or the unborn child.

Information pertaining to particular risks to 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

5 mL Prüflösung 1

Substance name: *ethanol*
 CAS No.: 64-17-5
 (denatured with 1% 2-butanone / 1% 2-propanol)
 Substance rating: H225, Flam. Liq. 2
 Formula: C₂H₆O; C₂H₅OH
 Pseudonym (de): Äthylalkohol, vergällter Spiritus
 REACH Reg. No.: 01-2119457610-43-xxxx
 EC No.: 200-578-6
 Concentration: 75 - <90 %
 acc. CLP (GHS): H225, Flam. Liq. 2
 Indice No.: 603-002-00-5

Substance name: *indicator dye(s)*
 CAS No.: -

Substance rating: No criteria for classification or naming of chemical not required.
 Concentration: 0,01 - <0,1 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

5 mL Prüflösung 2

Substance name: *ethanol*
 CAS No.: 64-17-5
 (denatured with 1% 2-butanone / 1% 2-propanol)
 Substance rating: H225, Flam. Liq. 2
 Formula: C₂H₆O; C₂H₅OH
 Pseudonym (de): Äthylalkohol, vergällter Spiritus
 REACH Reg. No.: 01-2119457610-43-xxxx
 EC No.: 200-578-6
 Concentration: 75 - <90 %
 acc. CLP (GHS): H225, Flam. Liq. 2
 Indice No.: 603-002-00-5



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Substance name: *indicator dye(s)*
 CAS No.: -
 Substance rating: No criteria for classification or naming of chemical not required.
 Concentration: 0,01 - <0,1 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

5 mL Prüflösung 3

Substance name: *ethanol*
 CAS No.: 64-17-5
 (denatured with 1% 2-butanone / 1% 2-propanol)
 Substance rating: H225, Flam. Liq. 2
 Formula: C₂H₆O; C₂H₅OH
 Pseudonym (de): Äthylalkohol, vergällter Spiritus
 REACH Reg. No.: 01-2119457610-43-xxxx
 EC No.: 200-578-6
 Concentration: 75 - <90 %
 acc. CLP (GHS): H225, Flam. Liq. 2
 Indice No.: 603-002-00-5

Substance name: *indicator dye(s)*
 CAS No.: -
 Substance rating: No criteria for classification or naming of chemical not required.
 Concentration: 0,01 - <0,1 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

5 mL Blank (NULL)

Substance name: *water*
 CAS No.: 7732-18-5
 Substance rating: No criteria for classification or naming of chemical not required.
 Formula: H₂O
 REACH Reg. No.: exempt, Annex IV
 EC No.: 231-791-2
 Concentration: 90 - <100 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

5 mL Prüflösung 4

Substance name: *nickel sulfate*
 CAS No.: 7786-81-4
 Substance rating: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H317, Skin Sens. 1, H332, Acute Tox. 4 inh., H334, Resp. Sens. 1, H341, Muta. 2, H350i, Carc. 1 A, H360, Repr. 1 B, H372, STOT RE 1, H410, Aquatic Chronic 1
 Formula: NiSO₄
 Pseudonym (de): Nickelvitriol
 REACH Reg. No.: 01-2119439361-44-xxxx
 EC No.: 232-104-9
 Concentration: 1 - <10 %
 acc. CLP (GHS): H317, Skin Sens. 1, H334, Resp. Sens. 1, H341, Muta. 2, H350i, Carc. 1 A, H360, Repr. 1 B, H410, Aquatic Chronic 1
 Indice No.: 028-009-00-5

5 mL Prüflösung 5



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Substance name: *nickel sulfate*
CAS No.: 7786-81-4

Substance rating: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H317, Skin Sens. 1, H332, Acute Tox. 4 inh., H334, Resp. Sens. 1, H341, Muta. 2, H350i, Carc. 1 A, H360, Repr. 1 B, H372, STOT RE 1, H410, Aquatic Chronic 1

Formula: NiSO₄

Pseudonym (de): Nickelvitriol

REACH Reg. No.: 01-2119439361-44-xxxx

EC No.: 232-104-9

Index No.: 028-009-00-5

Concentration: 1 - <10 %

acc. CLP (GHS): H317, Skin Sens. 1, H334, Resp. Sens. 1, H341, Muta. 2, H350i, Carc. 1 A, H360, Repr. 1 B, H410, Aquatic Chronic 1

5 mL Prüflösung 6

Substance name: *nickel sulfate*
CAS No.: 7786-81-4

Substance rating: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H317, Skin Sens. 1, H332, Acute Tox. 4 inh., H334, Resp. Sens. 1, H341, Muta. 2, H350i, Carc. 1 A, H360, Repr. 1 B, H372, STOT RE 1, H410, Aquatic Chronic 1

Formula: NiSO₄

Pseudonym (de): Nickelvitriol

REACH Reg. No.: 01-2119439361-44-xxxx

EC No.: 232-104-9

Index No.: 028-009-00-5

Concentration: 1 - <10 %

acc. CLP (GHS): H317, Skin Sens. 1, H334, Resp. Sens. 1, H341, Muta. 2, H350i, Carc. 1 A, H360, Repr. 1 B, H410, Aquatic Chronic 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. Take to a doctor, in a raised position if there are breathing difficulties.

4.1.1 After SKIN Contact

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 with eye washing bottle, eye douche or running water (protect intact eye).

4.1.3 After INHALATION of vapours

After inhalation of foam or vapour fresh air should be inhaled. Keep airways free. Administer a Dexamethasone spray as soon as possible. Ensure quiet, warmth, and provide resuscitation if necessary. In the event of respiratory distress ensure that the patient inhales oxygen. Secure the breathing, heart and circulatory function. ---

4.1.4 After ORAL Intake

After oral intake lots of water should be drunk after it has been ingested.

4.2 Most important symptoms and effects, both acute and delayed

May cause allergy or asthma symptoms or breathing difficulties if inhaled. Chronic effects: Repeated contact, even in small amounts, can lead to sensitization.

CMR Effekte: Suspected of causing genetic defects. May cause cancer. May cause cancer if inhaled. May damage fertility or the unborn child.

4.3 Indication of any immediate medical attention and special treatment needed

After SKIN CONTACT rinse with water for a long time. Apply glucocorticosteroides following inflammatory reactions. 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

DANGER: Highly flammable (GHS regulation). Forms explosive vapour-air mixtures. 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. 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

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 only in well-ventilated working areas.

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): 3
Water hazard class (DE): 2

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.

7.3 Specific end use(s)

Product for analytical use.



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SECTION 8: Exposure controls /personal protection

8.1 Control parameters

5 mL Prüflösung 1

Chemical: *ethanol* CAS No.: 64-17-5

DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 0.96 mg/L
PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 200 mL/m³ / 380 mg/m³
E/e respirable

Short-term exposure factor: 4 (II), Y
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 500 ppm / 960 mg/m³

NIOSH: [TWA] 1000 ppm / 1900 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] 1000 ppm / 1900 mg/m³

Chemical: *indicator dye(s)* CAS No.: -

5 mL Prüflösung 2

Chemical: *ethanol* CAS No.: 64-17-5

DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 0.96 mg/L
PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 200 mL/m³ / 380 mg/m³
E/e respirable

Short-term exposure factor: 4 (II), Y
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 500 ppm / 960 mg/m³

NIOSH: [TWA] 1000 ppm / 1900 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] 1000 ppm / 1900 mg/m³

Chemical: *indicator dye(s)* CAS No.: -

5 mL Prüflösung 3

Chemical: *ethanol* CAS No.: 64-17-5

DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 0.96 mg/L
PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 200 mL/m³ / 380 mg/m³
E/e respirable

Short-term exposure factor: 4 (II), Y
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 500 ppm / 960 mg/m³

NIOSH: [TWA] 1000 ppm / 1900 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] 1000 ppm / 1900 mg/m³

Chemical: *indicator dye(s)* CAS No.: -

5 mL Blank (NULL)

Chemical: *water* CAS No.: 7732-18-5

5 mL Prüflösung 4

Chemical: *nickel sulfate* CAS No.: 7786-81-4

TRGS 900 (DE): [Ni] 0,005A; [NOAEC] 0,027A mg/m³
E/e respirable

Short-term exposure factor: 8 (II), Y
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/c,b 45 µg/L

NIOSH: Ca TWA 0.015 mg/m³
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period



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OSHA: TWA 1 mg/m³

5 mL Prüflösung 5

Chemical: *nickel sulfate* CAS No.: 7786-81-4
 TRGS 900 (DE): [Ni] 0,005A; [NOAEC] 0,027A mg/m³
 E/e respirable

Short-term exposure factor: 8 (II), Y
 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/c,b 45 µg/L
 NIOSH: Ca TWA 0.015 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

5 mL Prüflösung 6

Chemical: *nickel sulfate* CAS No.: 7786-81-4
 TRGS 900 (DE): [Ni] 0,005A; [NOAEC] 0,027A mg/m³
 E/e respirable

Short-term exposure factor: 8 (II), Y
 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/c,b 45 µg/L
 NIOSH: Ca TWA 0.015 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

Use for open access of these substances for example a protection filter, class A/AX. 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.

8.2.4 Skin protection

Recommended 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

5 mL Prüflösung 1

a) State of aggregation:	liquid
b) Colour:	colored
c) Odor:	organic
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:	18 °C
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available



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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

5 mL Prüflösung 2

a) State of aggregation:	liquid
b) Colour:	colored
c) Odor:	organic
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:	18 °C
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

5 mL Prüflösung 3

a) State of aggregation:	liquid
b) Colour:	colored
c) Odor:	organic
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:	18 °C
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

5 mL Blank (NULL)

a) State of aggregation:	liquid
b) Colour:	colourless
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:	6-8
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient (o/w) :	no data available



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o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1,00 g/cm ³
q) Relative vapour density (air=1) :	no data available
r) Particle size:	no data available

5 mL Prüflösung 4

a) State of aggregation:	liquid
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

5 mL Prüflösung 5

a) State of aggregation:	liquid
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

5 mL Prüflösung 6

a) State of aggregation:	liquid
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



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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 volatile and form flammable gas-air mixtures.

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

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.

5 mL Prüflösung 1

Chemical:	<i>ethanol</i>	CAS No.:	64-17-5
TSCA Inventory:	listed	California Proposition 65 List:	not listed
ACGIH:	1000 ppm		
Exposure Routes:	inhalation, ingestion, skin and/or eye contact		
Target Organs:	Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system		
Symptoms:	irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough;		
	liver damage; anemia; reproductive, teratogenic		
Australia NICNAS:	not listed	Canada CEPA 1999:	DSL yes
Japan CSCL/PRTR:	not listed, Japan PDSCL:	not listed	
Japan ISHL:	listed $\geq 0,1\%$ / $\geq 0,1\%$, Article 57-2 (SDS required)		
South Korea TCCA:	not listed		
Korea Exist.Chem.Inventory:	KE-13217		
LD50 orl rat :	6200 mg/kg		
LC ₅₀ ihl gpg :	21,900 mg/L		
LC ₅₀ orl hmn :	1400 mg/kg		
LC50 ihl mus :	123,4 mg/L/4H		
LC50 ihl rat :	115,9-133,8 mg/L/4H		
LD50 orl mus :	3450 mg/kg		

TRGS 905 (DE): K5, M5, R F C

Chemical:	<i>indicator dye(s)</i>	CAS No.:	-
TSCA Inventory:	all listed, <1%		

5 mL Prüflösung 2

Chemical:	<i>ethanol</i>	CAS No.:	64-17-5
TSCA Inventory:	listed	California Proposition 65 List:	not listed
ACGIH:	1000 ppm		
Exposure Routes:	inhalation, ingestion, skin and/or eye contact		
Target Organs:	Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system		



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Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough;
 liver damage; anemia; reproductive, teratogenic
 Australia NICNAS: not listed Canada CEPA 1999: DSL yes
 Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
 Japan ISHL: listed $\geq 0,1\%$ / $\geq 0,1\%$, Article 57-2 (SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-13217
 LD50 orl rat : 6200 mg/kg
 LC_{Low} ihl gpg : 21,900 mg/L
 LC_{Low} orl hmn : 1400 mg/kg
 LC50 ihl mus : 123,4 mg/L/4H
 LC50 ihl rat : 115,9-133,8 mg/L/4H
 LD50 orl mus : 3450 mg/kg

TRGS 905 (DE): K5, M5, R_F C

Chemical: *indicator dye(s)* CAS No.: -
 TSCA Inventory: all listed, <1%

5 mL Prüflösung 3

Chemical: *ethanol* CAS No.: 64-17-5
 TSCA Inventory: listed California Proposition 65 List: not listed
 ACGIH: 1000 ppm
 Exposure Routes: inhalation, ingestion, skin and/or eye contact
 Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system
 Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough;
 liver damage; anemia; reproductive, teratogenic

Australia NICNAS: not listed Canada CEPA 1999: DSL yes
 Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
 Japan ISHL: listed $\geq 0,1\%$ / $\geq 0,1\%$, Article 57-2 (SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-13217
 LD50 orl rat : 6200 mg/kg
 LC_{Low} ihl gpg : 21,900 mg/L
 LC_{Low} orl hmn : 1400 mg/kg
 LC50 ihl mus : 123,4 mg/L/4H
 LC50 ihl rat : 115,9-133,8 mg/L/4H
 LD50 orl mus : 3450 mg/kg

TRGS 905 (DE): K5, M5, R_F C

Chemical: *indicator dye(s)* CAS No.: -
 TSCA Inventory: all listed, <1%

5 mL Blank (NULL)

Chemical: *water* CAS No.: 7732-18-5
 TSCA Inventory: listed
 Korea Exist.Chem.Inventory: KE-35400
 LD50 orl rat : > 90000 mg/kg

5 mL Prüflösung 4

Chemical: *nickel sulfate* CAS No.: 7786-81-4
 TSCA Inventory: listed California Proposition 65 List: listed cancer
 Exposure Routes: inhalation, ingestion, skin and/or eye contact
 Target Organs: Nasal cavities, lungs, skin; [lung and nasal cancer]
 Symptoms: sensitization dermatitis, allergic asthma, pneumonitis; [potential occupational carcinogen]
 Japan CSCL/PRTR: PRTR: $\geq 0,1\%$ specific class I, Japan PDSCL: not listed
 Japan ISHL: listed $\geq 0,1\%$ / $\geq 0,1\%$
 Korea Exist.Chem.Inventory: KE-25867, >0.1% Toxic 2010-1-609
 LD50 orl rat : 264 mg/kg
 Exposure Risk Relationship (ERR) for respirable dust :
 Tolerance concentration: [Ni] 0,006A mg/m³
 Acceptance concentration: [Ni] 0,001A ppm
 Acute Effects: Cause after skin contact, impairments of health when ingested in small quantities.



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Chronic Effects: May cause sensitization by skin contact, also in repeated contact of small amounts. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Carcinogenic Effects: Suspected of causing genetic defects. May cause cancer. May cause cancer if inhaled. May damage fertility or the unborn child.

EU carcinogen: Carcinogenicity cat. 1A, Germ Cell Mutagenicity cat. 2, Reproductive Toxicity cat. 1B
 TRGS 905 (DE): K 1
 TRGS 907 (DE): Sah

5 mL Prüflösung 5

Chemical: *nickel sulfate* CAS No.: 7786-81-4
 TSCA Inventory: listed California Proposition 65 List: listed cancer
 Exposure Routes: inhalation, ingestion, skin and/or eye contact
 Target Organs: Nasal cavities, lungs, skin; [lung and nasal cancer]
 Symptoms: sensitization dermatitis, allergic asthma, pneumonitis; [potential occupational carcinogen]
 Japan CSCL/PRTR: PRTR: ≥0,1% specific class I, Japan PDSCL: not listed
 Japan ISHL: listed ≥0,1%/≥0,1%
 Korea Exist.Chem.Inventory: KE-25867, >0.1% Toxic 2010-1-609
 LD50 orl rat : 264 mg/kg
 Exposure Risk Relationship (ERR) for respirable dust :
 Tolerance concentration: [Ni] 0,006A mg/m³
 Acceptance concentration: [Ni] 0,001A ppm

Acute Effects: Cause after 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 allergy or asthma symptoms or breathing difficulties if inhaled.

Carcinogenic Effects: Suspected of causing genetic defects. May cause cancer. May cause cancer if inhaled. May damage fertility or the unborn child.

EU carcinogen: Carcinogenicity cat. 1A, Germ Cell Mutagenicity cat. 2, Reproductive Toxicity cat. 1B
 TRGS 905 (DE): K 1
 TRGS 907 (DE): Sah

5 mL Prüflösung 6

Chemical: *nickel sulfate* CAS No.: 7786-81-4
 TSCA Inventory: listed California Proposition 65 List: listed cancer
 Exposure Routes: inhalation, ingestion, skin and/or eye contact
 Target Organs: Nasal cavities, lungs, skin; [lung and nasal cancer]
 Symptoms: sensitization dermatitis, allergic asthma, pneumonitis; [potential occupational carcinogen]
 Japan CSCL/PRTR: PRTR: ≥0,1% specific class I, Japan PDSCL: not listed
 Japan ISHL: listed ≥0,1%/≥0,1%
 Korea Exist.Chem.Inventory: KE-25867, >0.1% Toxic 2010-1-609
 LD50 orl rat : 264 mg/kg
 Exposure Risk Relationship (ERR) for respirable dust :
 Tolerance concentration: [Ni] 0,006A mg/m³
 Acceptance concentration: [Ni] 0,001A ppm

Acute Effects: Cause after 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 allergy or asthma symptoms or breathing difficulties if inhaled.

Carcinogenic Effects: Suspected of causing genetic defects. May cause cancer. May cause cancer if inhaled. May damage fertility or the unborn child.

EU carcinogen: Carcinogenicity cat. 1A, Germ Cell Mutagenicity cat. 2, Reproductive Toxicity cat. 1B
 TRGS 905 (DE): K 1
 TRGS 907 (DE): Sah

11.2 Other hazards

Possible endocrine disrupting effects

no data available

Other information

no additional data available



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SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

5 mL Prüflösung 1

Chemical: *ethanol* CAS No.: 64-17-5
 PNEC (fresh water): 0.96 mg/L
 PNEC = Predicted No Effect Concentration
 LC50 daphnia magna/48h: >100 mg/L
 LC50 pimephales promelas/96h: 13400 - 15100 mg/L
 LC50 leuciscus idus/96h: [48h] 8140 mg/L
 LC50 fish/96h: 13 g/L
 EC50 daphnia/48h: 9.3-14.2 g/L
 IC50 scenedesmus quadricauda/72h: [7d] 5000 mg/L
 EC10 pseudomonas putita/16h: [EC5] 6500 mg/L
 Water hazard class (DE): 1 WGK No.: 0096
 Dispersion coefficient (o/w): -0,31
 Storage class (VCI): 3

Chemical: *indicator dye(s)* CAS No.: -
 Storage class (VCI): 12-13

5 mL Prüflösung 2

Chemical: *ethanol* CAS No.: 64-17-5
 PNEC (fresh water): 0.96 mg/L
 PNEC = Predicted No Effect Concentration
 LC50 daphnia magna/48h: >100 mg/L
 LC50 pimephales promelas/96h: 13400 - 15100 mg/L
 LC50 leuciscus idus/96h: [48h] 8140 mg/L
 LC50 fish/96h: 13 g/L
 EC50 daphnia/48h: 9.3-14.2 g/L
 IC50 scenedesmus quadricauda/72h: [7d] 5000 mg/L
 EC10 pseudomonas putita/16h: [EC5] 6500 mg/L
 Water hazard class (DE): 1 WGK No.: 0096
 Dispersion coefficient (o/w): -0,31
 Storage class (VCI): 3

Chemical: *indicator dye(s)* CAS No.: -
 Storage class (VCI): 12-13

5 mL Prüflösung 3

Chemical: *ethanol* CAS No.: 64-17-5
 PNEC (fresh water): 0.96 mg/L
 PNEC = Predicted No Effect Concentration
 LC50 daphnia magna/48h: >100 mg/L
 LC50 pimephales promelas/96h: 13400 - 15100 mg/L
 LC50 leuciscus idus/96h: [48h] 8140 mg/L
 LC50 fish/96h: 13 g/L
 EC50 daphnia/48h: 9.3-14.2 g/L
 IC50 scenedesmus quadricauda/72h: [7d] 5000 mg/L
 EC10 pseudomonas putita/16h: [EC5] 6500 mg/L
 Water hazard class (DE): 1 WGK No.: 0096
 Dispersion coefficient (o/w): -0,31
 Storage class (VCI): 3

Chemical: *indicator dye(s)* CAS No.: -
 Storage class (VCI): 12-13

5 mL Blank (NULL)

Chemical: *water* CAS No.: 7732-18-5

5 mL Prüflösung 4

Chemical: *nickel sulfate* CAS No.: 7786-81-4
 Very toxic to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.
 Environmental hazards must not be labelled with H and P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).
 Water hazard class (DE): 2
 Storage class (VCI): 6.1 D



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5 mL Prüflösung 5

Chemical: *nickel sulfate* CAS No.: 7786-81-4
 Very toxic to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.
 Environmental hazards must not be labelled with H and P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).
 Water hazard class (DE): 2
 Storage class (VCI): 6.1 D

5 mL Prüflösung 6

Chemical: *nickel sulfate* CAS No.: 7786-81-4
 Very toxic to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.
 Environmental hazards must not be labelled with H and P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).
 Water hazard class (DE): 2
 Storage class (VCI): 6.1 D

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). Close container tightly.

13.1 Waste treatment methods

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

Or use **Alternative declaration for transportation:**

UN 1993 class 3 II, **Excepted Quantities** (≤ 30 mL/ $\Sigma \leq 500$ mL) = ADR/ IATA E2
 or

14.1 UN number: 1993

14.2 UN proper shipping name: Flammable liquid, n.o.s. (ethanol mixture)

14.3 Class: 3

14.4 Packing group: II

Road transport ADR



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Classification code:	F1	Tunnel restriction code:	E
Limited Quantity:	1 L	Special instructions:	640C
Excepted Quantity:	E 2		
<i>Air transport IATA DGR</i>			
Limited Quantity:	PAX: 353	max. quantity PAX:	5 L
	CAO: 364	max. quantity CAO:	60 L
Excepted Quantity:	E 2		
<i>Maritime transport IMDG</i>			
EmS:	F-E, S-E	Staukategorie:	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 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
 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
 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

in preparation

16.2 List of H and P phrases

16.2.1 List of relevant H phrases

H225	Highly flammable liquid and vapour.
H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H350i	May cause cancer if inhaled.
H360	May damage fertility or the unborn child.
H410	Very toxic to aquatic life with long lasting effects.

16.2.2 List of relevant P phrases

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261sh	Avoid breathing dust/vapours.
P280sh	Wear protective gloves/eye protection.
P284	[In case of inadequate ventilation] wear respiratory protection.



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Safety Data Sheet

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P302+352	IF ON SKIN: Wash with plenty of water.
P333+313	If skin irritation or rash occurs: Get medical advice/attention.
P342+311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P362+364	Take off 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
 Directive 2004/37/EC on the protection of workers from the risk of carcinogens or mutagens at work 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)
 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 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)
 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
 2017-08 adjustment according the Ordinance on Ethanol Denaturation 2016/1867/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



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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:	lethal concentration 50%
LD50:	lethal dose 50%
leuciscus idus:	fish, ide, orfe
MAK:	maximum workplace concentration
Met:	Metal
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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