

Safety Data Sheet

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

REF: 91850

NANOCOLOR Sludge

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Printing date: 15.11.2021

Date of issue: 11.12.2020

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

1.1 Product identifier

REF 91850
Product name NANOCOLOR Sludge

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.

10 x 7 mL Sludge R1
10 x 2.3 mL Sludge R2
3 x 100 mL Sludge R3
1 x 50 mL Sludge R4
1 x 30 mL Sludge R5

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
Valenciennr Str. 11, 52355 Düren, GERMANY
Tel.: +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

You find our current versions of SDS (22 languages) in Internet:

<http://www.mn-net.com/SDS>

SECTION 2: Hazard identification

2.0 Classification of the complete product



GHS05 GHS06 GHS07

Signal word DANGER

Hazard identification	Hazard classes/categories
H290	Met. Corr. 1
H314	Skin Corr. 1A
H315	Skin Irrit. 2
H319	Eye Irrit. 2
H331	Acute Tox. 3 inh.
H335	STOT SE 3

2.1 Classification of the substance or mixture

7 mL Sludge R1

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GHS05

GHS07

Signal word

DANGER

Hazard identification

Hazard classes/categories

H290
H314
H335

Met. Corr. 1
Skin Corr. 1B
STOT SE 3

2.3 mL Sludge R2



GHS05

GHS06

Signal word

DANGER

Hazard identification

Hazard classes/categories

H290
H314
H331

Met. Corr. 1
Skin Corr. 1A
Acute Tox. 3 inh.

100 mL Sludge R3



GHS07

Signal word

WARNING

Hazard identification

Hazard classes/categories

H315
H319

Skin Irrit. 2
Eye Irrit. 2

50 mL Sludge R4



GHS05

Signal word

DANGER

Hazard identification

Hazard classes/categories

H290
H314

Met. Corr. 1
Skin Corr. 1A

30 mL Sludge R5

Signal word

Do not need labelling as hazardous
-

No hazard class

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2.2 Label elements

According **CLP directive** inner packages must be only labelled with GHS symbol(s) and product identifier(s) (EU 1272/2008 Annex I - 1.5.1.2).

Harmful chemicals/mixtures with signal word: **WARNING** must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2).

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

7 mL Sludge R1



GHS05 GHS07

Signal word: DANGER

H314

Causes severe skin burns and eye damage.

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

Do not breathe dust/vapours. Wear protective gloves/eye protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

2.3 mL Sludge R2



GHS05 GHS06

Signal word: DANGER

H314, H331

Causes severe skin burns and eye damage. Toxic if inhaled.

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

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.

100 mL Sludge R3



GHS07

Signal word: WARNING

50 mL Sludge R4



GHS05

Signal word: DANGER

H314

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Causes severe skin burns and eye damage.

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

Do not breathe dust/vapours. Wear protective gloves/eye protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

30 mL Sludge R5

Do not need labelling as hazardous

Signal word: -

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. In the case of pH values are less than 5 or higher than 9 then it is irritant. The property H314 "Causes severe skin burns and eye damage." of some salts is not applicable, because the mixture is buffered to pH >3-4 (see GHS Directive 1272/2008/EC Annex I, chapter 3.2.3.1.2.). H290 "May be corrosive to metals." has only relevance for higher concentrations and larger amounts. The labelling GHS05 would be creating an "OVERLABELLING" (see GHS Directive 1272/2008/EC Annex I, chapter 1.5.2.1.3., until 125 mL no labelling necessary). ---

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 inhalation of vapours, impairments of health or can lead to death even when only ingested in small quantities.

Cause after inhalation of vapours/dust, impairments of health when ingested in small quantities. -

Information pertaining to particular risks to the environment

Avoid contact of substance/mixture to environment.

PBT: not applicable

vPvB: not applicable

Other hazards

SECTION 3: Composition/information on ingredients

3.1 Substances or 3.2 Mixtures

7 mL Sludge R1

Chemical:	hydrochloric acid	CAS No.:	7647-01-0
Classification:	H290, Met. Corr. 1, H314, Skin Corr. 1B, H331, Acute Tox. 3 inh.		
Formula:	HCl•H ₂ O		
Pseudonym:	aqueous hydrogen chloride		
TSCA Inventory:	listed		
REACH Reg. No.:	01-2119484862-27-xxxx	Indice No.:	017-002-01-X
EC No.:	231-595-7		
RTECS:	MW4025000		
KE No.:	KE-20189, >10% Toxic 97-1-203, Acc. Precaution Chem.		
Concentration:	25 - <37 %		
acc. CLP (GHS):	H290, Met. Corr. 1, H314, Skin Corr. 1B, H335, STOT SE 3		

2.3 mL Sludge R2

Chemical:	nitric acid	CAS No.:	7697-37-2
Classification:	H272, Ox. Liq. 2, H290, Met. Corr. 1, H314, Skin Corr. 1B, H331, Acute Tox. 3 inh.		
Formula:	HNO ₃ •H ₂ O		
Pseudonym:	Aqua fortis, Engravers acid, hydrogen nitrate		
TSCA Inventory:	listed		
REACH Reg. No.:	01-2119487297-23-xxxx	Indice No.:	007-004-00-1
EC No.:	231-714-2		
RTECS:	QU5900000/QU5775000		
KE No.:	KE-25911, >10% Toxic 97-1-246, Acc. Precaution Chem.		
Concentration:	40 - <65 %		
acc. CLP (GHS):	H290, Met. Corr. 1, H314, Skin Corr. 1B, H331, Acute Tox. 3 inh.		

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100 mL Sludge R3

Chemical: *nitric acid* CAS No.: 7697-37-2
Classification: H272, Ox. Liq. 2, H290, Met. Corr. 1, H314, Skin Corr. 1B, H331, Acute Tox. 3 inh.
Formula: $\text{HNO}_3 \cdot \text{H}_2\text{O}$
Pseudonym: Aqua fortis, Engravers acid, hydrogen nitrate
TSCA Inventory: listed
REACH Reg. No.: 01-2119487297-23-xxxx
EC No.: 231-714-2 Indice No.: 007-004-00-1
RTECS: QU5900000/QU5775000
KE No.: KE-25911, >10% Toxic 97-1-246, Acc. Precaution Chem.
Concentration: 1 - <3 %
acc. CLP (GHS): H315, Skin Irrit. 2, H319, Eye Irrit. 2

50 mL Sludge R4

Chemical: *sodium hydroxide solution* CAS No.: 1310-73-2
Classification: H290, Met. Corr. 1, H314, Skin Corr. 1B
Formula: $\text{NaOH} \cdot \text{H}_2\text{O}$
Pseudonym: soda lye
TSCA Inventory: listed
REACH Reg. No.: 01-2119457892-27-xxxx
EC No.: 215-185-5 Indice No.: 011-002-00-6
RTECS: WB4900000
KE No.: KE-31487
Concentration: 20 - <35 %
acc. CLP (GHS): H290, Met. Corr. 1, H314, Skin Corr. 1B

30 mL Sludge R5

Chemical: *ammonium acetate* CAS No.: 631-61-8
Classification: No criteria for classification or naming of chemical not required.
Formula: $\text{C}_2\text{H}_7\text{NO}_2$
TSCA Inventory: listed
REACH Reg. No.: 01-2119828440-45-xxxx
EC No.: 211-162-9
RTECS: AF3675000 MFCD: 00013066
KE No.: KE-01629
Concentration: 20 - <40 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

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 16.1

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. 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 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. 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

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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

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. ---

SECTION 5: Firefighting measures

5.1 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.

5.2 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

not necessary

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 ---

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

The original product package of MACHEREY-NAGEL allows a safe storage. Products containing also toxic substances should be kept locked up.

Storage class (VCI):

8B

Water hazard class (DE):

1

7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage, and store in a well-ventilated place at max. 25 °C, away or preferably separate from substances with which a hazardous reaction could take place, 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

7 mL Sludge R1

Chemical: *hydrochloric acid*

CAS No.: 7647-01-0

DNEL: [inh] 8 mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC_(fresh water): 36 µg/L no hazard identified
PNEC = Predicted No Effect Concentration

EU value: [TWA] 5 ppm / 8 mg/m³; [STEL] 10 ppm / 15 mg/m³
TRGS 900 (DE): 2 mL/m³ / 3 mg/m³
E/e respirable

Short-term exposure factor: 2 (I), Y
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 2 ppm / 3* mg/m³

NIOSH: [C] 5 ppm / 7 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: List of highly hazardous chemicals, toxics and reactives Yes (TQ = 5000 lbs) n/a; TWA 5 ppm / 7 mg/m³

2.3 mL Sludge R2

Chemical: *nitric acid*

CAS No.: 7697-37-2

DNEL: [inh] (1.3) mg/m³
DNEL = Derived No-Effect Level (for workers)

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

EU value: 1 ppm / 2.6 mg/m³
TRGS 900 (DE): 1 ppm / 2.6 mg/m³
E/e respirable

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

SUVA(CH) MAK value: 2 ppm / 5 mg/m³

NIOSH: [TWA] 2 ppm / 5 mg/m³

NIOSH STEL: 4 ppm / 10 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: List of highly hazardous chemicals, toxics and reactives Yes (TQ = 500 lbs) n/a; [TWA] 2 ppm / 5 mg/m³

100 mL Sludge R3

Chemical: *nitric acid*

CAS No.: 7697-37-2

DNEL: [inh] (1.3) mg/m³
DNEL = Derived No-Effect Level (for workers)

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

EU value: 1 ppm / 2.6 mg/m³
TRGS 900 (DE): 1 ppm / 2.6 mg/m³
E/e respirable

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

SUVA(CH) MAK value: 2 ppm / 5 mg/m³

NIOSH: [TWA] 2 ppm / 5 mg/m³

NIOSH STEL: 4 ppm / 10 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: List of highly hazardous chemicals, toxics and reactives Yes (TQ = 500 lbs) n/a; [TWA] 2 ppm / 5 mg/m³

50 mL Sludge R4

Chemical: *sodium hydroxide solution*

CAS No.: 1310-73-2

DNEL: [inh] 1 mg/m³
DNEL = Derived No-Effect Level (for workers)

TRGS 900 (DE): 2 mg/m³
E/e respirable

Short-term exposure factor: (=1=, Y)

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

SUVA(CH) MAK value: 2 e mg/m³

NIOSH: 2 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] 2 mg/m³

30 mL Sludge R5

Chemical: ammonium acetate

CAS No.: 631-61-8

NIOSH: not listed

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

OSHA: not listed

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 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 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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

7 mL Sludge R1

Appearance: liquid

pH:

Specific gravity:

Solubility in water:

Colour: colourless

0

1,18 g/cm³

0-100 %

Odor: penetrative

2.3 mL Sludge R2

Appearance: liquid

pH:

Specific gravity:

Solubility in water:

Colour: colourless

0

1,39 g/cm³

0-100 %

Odor: nitric

100 mL Sludge R3

Appearance: liquid

pH:

Specific gravity:

Solubility in water:

Colour: colourless

1-2

1,01 g/cm³

0-100 %

Odor: nitric

50 mL Sludge R4

Appearance: liquid

pH:

Specific gravity:

Solubility in water:

Colour: colourless

14

1,22 g/cm³

0-100 %

Odor: odorless

30 mL Sludge R5

Appearance: liquid

Colour: colourless

Odor: acetic

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pH: 3-5
Solubility in water: 0-100 %

9.2 Other information

Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required.

Relevant Properties of Substance Group

SECTION 10: Stability and reactivity

10.1 Reactivity

no further data available.

10.2 Chemical stability

No known instability.

10.3 Possibility of hazardous reactions

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

10.4 Conditions to avoid

Not necessary. Observe labeled storage temperature. ---

10.5 Incompatible materials

Avoid contact with strong acids or alkalines.

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 toxicological effects

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

7 mL Sludge R1

Chemical: *hydrochloric acid* CAS No.: 7647-01-0
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, ingestion (solution), skin and/or eye contact
Target Organs: Eyes, skin, respiratory system
Symptoms: irritation nose, throat, larynx; cough, choking; dermatitis; solution: eye, skin burns; liquid: frostbite; in animals: laryngeal spasm; pulmonary edema
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSCL: Deleterious Substance
Japan ISHL: listed $\geq 0,2\%/\geq 0,1\%$, Article 57-2 (SDS required)
South Korea TCCA: Accident Precaution Chemical Yes
Korea Exist.Chem.Inventory: KE-20189, >10% Toxic 97-1-203, Acc. Precaution Chem.
LD50_{orl rat}: 900 mg/kg
LC50_{drm rbt}: >5010 mg/kg
Acute Effects: Cause after inhalation of vapours/dust, impairments of health when ingested in small quantities.

2.3 mL Sludge R2

Chemical: *nitric acid* CAS No.: 7697-37-2
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, teeth
Symptoms: irritation eyes, skin, mucous membrane; delayed pulmonary edema, pneumonitis, bronchitis; dental erosion
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSCL: Deleterious Substance
Japan ISHL: listed $\geq 1,0\%/\geq 1,0\%$, Article 57-2 (SDS required)
South Korea TCCA: Accident Precaution Chemical Yes
Korea Exist.Chem.Inventory: KE-25911, >10% Toxic 97-1-246, Acc. Precaution Chem.
LC_{LoWorl hmn}: [NOAEC] 1500 mg/kg
LC50_{ihl rat}: [4h] 2.65 mg/L
Acute Effects: Cause severe after inhalation of vapours, impairments of health or can lead to death even when only ingested in small quantities.
TRGS 905 (DE): R_F D

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100 mL Sludge R3

Chemical: *nitric acid* CAS No.: 7697-37-2
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, teeth
Symptoms: irritation eyes, skin, mucous membrane; delayed pulmonary edema, pneumonitis, bronchitis; dental erosion
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSCL: Deleterious Substance
Japan ISHL: listed $\geq 1,0\%$ / $\geq 1,0\%$, Article 57-2 (SDS required)
South Korea TCCA: Accident Precaution Chemical Yes
Korea Exist.Chem.Inventory: KE-25911, >10% Toxic 97-1-246, Acc. Precaution Chem.
LC₅₀LoW₀₁ hmn: [NOAEC] 1500 mg/kg
LC₅₀ihl rat: [4h] 2.65 mg/L
TRGS 905 (DE): R_F D

50 mL Sludge R4

Chemical: *sodium hydroxide solution* CAS No.: 1310-73-2
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system
Symptoms: irritation eyes, skin, mucous membrane; pneumonitis; eye, skin burns; temporary loss of hair
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: listed $\geq 1,0\%$ / $\geq 1,0\%$, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-31487
LD₅₀orl rat: [40%] 1250 / [<25%] >2000 mg/kg
LD₅₀drm rbt: not applicable
LD₅₀orl mus: 40 mg/kg

30 mL Sludge R5

Chemical: *ammonium acetate* CAS No.: 631-61-8
TSCA Inventory: listed California Proposition 65 List: not listed
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: not listed
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-01629
LD₅₀orl rat: 632 mg/kg

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

7 mL Sludge R1

Chemical: *hydrochloric acid* CAS No.: 7647-01-0
Avoid contact of substance/mixture to environment.
PNEC (fresh water): 36 µg/L no hazard identified
PNEC = Predicted No Effect Concentration
LC₅₀fish/96h: 24.6 mg/L
EC₅₀daphnia/48h: 0.492 mg/L
EC₅₀pseudokirchneriella subcapitata/72h: 0.78 mg/L
Water hazard class (DE): 1 WGK No.: 0238
Storage class (VCI): 8 B

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2.3 mL Sludge R2

Chemical: *nitric acid*

CAS No.: 7697-37-2

Avoid contact of substance/mixture to environment.

PNEC(fresh water): no hazard identified

PNEC = Predicted No Effect Concentration

LC50_{daphnia magna/48h}: 180 mg/L

LC50_{fish/96h}: [4d] 12 g/L

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

Storage class (VCI): 8 B

100 mL Sludge R3

Chemical: *nitric acid*

CAS No.: 7697-37-2

PNEC(fresh water): no hazard identified

PNEC = Predicted No Effect Concentration

LC50_{daphnia magna/48h}: 180 mg/L

LC50_{fish/96h}: [4d] 12 g/L

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

Storage class (VCI): 8 B

50 mL Sludge R4

Chemical: *sodium hydroxide solution*

CAS No.: 1310-73-2

Avoid contact of substance/mixture to environment.

LC50_{leuciscus idus/96h}: 35-189 mg/L

LC50_{fish/96h}: 45.4 mg/L

EC50_{daphnia/48h}: >100 mg/L

Water hazard class (DE): 1 WGK No.: 142

Storage class (VCI): 8 B

30 mL Sludge R5

Chemical: *ammonium acetate*

CAS No.: 631-61-8

Bio Toxicity: 1/4.5/4.8

LC50_{fish/96h}: 238 mg/L

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

Storage class (VCI): 12-13

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

no data available

12.6 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

Classification code: M11 Tunnel restriction code: E

Limited Quantity: acc. ADR 3.3.1/251: see LQ in Alternative declaration for transportation

Air transport

PAX: 960 max. weight PAX: 10 KG

CAO: 960 max. weight CAO: 10 KG

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Maritime transport

EmS: F-A, S-P Storage category: A

Or use Alternative declaration for transportation:

14.1 UN number: 1789 **14.2 UN proper shipping name:** Hydrochloric acid

14.3 Class: 8 **14.4 Packing group:** II

Road transport

Classification code: C1

Limited Quantity: 1 L

Excepted Quantity: E 2

Air transport

PAX: 851

CAO: 855

Maritime transport

EmS: F-A, S-B Storage category: C

Tunnel restriction code: E

max. weight PAX: 1 L

max. weight CAO: 30 L

14.1 UN number: 1824 **14.2 UN proper shipping name:** Sodium hydroxide solution

14.3 Class: 8 **14.4 Packing group:** II

Road transport

Classification code: C5

Limited Quantity: 1 L

Excepted Quantity: E 2

Air transport

PAX: 851

CAO: 855

Maritime transport

EmS: F-A, S-B Storage category: A

Tunnel restriction code: E

max. weight PAX: 1 L

max. weight CAO: 30 L

14.1 UN number: 2031 **14.2 UN proper shipping name:** Nitric acid

14.3 Class: 8 **14.4 Packing group:** II

Road transport

Classification code: C1

Limited Quantity: 1 L

Excepted Quantity: E 2

Air transport

PAX: 851

CAO: 855

Maritime transport

EmS: F-A, S-B Storage category: D

Tunnel restriction code: E

max. weight PAX: 1 L

max. weight CAO: 30 L

14.5 Environmental hazards

none, contains only small quantities of hazardous 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

SECTION 15: Regulatory information

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

German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on August 2013
German order governing protection from hazardous substances (Ordinance on Hazardous Substances / Gefahrstoffverordnung - GefStoffV), revised on November 2010, according to Directive 98/24/EC
TRGS 200, German engineering rules governing the classification and labelling of hazardous substances, preparations and products, updated October 2011
MN Leaflet/User manual, also see www.mn-net.com
Look for your country-specific regulations.

15.2 Chemical safety assessment

not necessary for these small amounts ---

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SECTION 16: Other information

16.1 List of H and P phrases

16.1.1 List of relevant H phrases

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.

16.1.2 List of relevant P phrases

P260sh	Do not breathe dust/vapours.
P261sh	Avoid breathing 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].
P304+340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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.
P311	Call a POISON CENTER/doctor.
P390	Absorb spillage to prevent material damage.
P403+233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

16.2 Training advice

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.

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 Further information

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16.5 Sources of key data

Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS

Regulation 487/2013/EU, 4th adaptation of CLP regulation to technical and scientific progress

Regulation 669/2018/EU, 4th adaptation of CLP regulation to technical and scientific progress

Regulation 1480/2018/EU, 4th adaptation of CLP regulation to technical and scientific progress

Regulation 849/2021/EU, 4th adaptation of CLP regulation to technical and scientific progress

TRGS 900, German engineering rules governing limits in air at work, updated 03/2019

SUVA .CH, Limits in air at work 2009, revised on 01.2009

KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)

Revisions/Updates

Reason for Revision: 2016-03 Adaptation of regulation 1221/2015/EU