

Safety Data Sheet

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

REF: 985079	NANOCOLOR ortho and total Phosphate 50	Page: 1/13
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

REF 985079
 Product name NANOCOLOR ortho and total Phosphate 50

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 20x 35 mg NANOFIX total Phosphate 1-50 (R2)
 19 x 0.5 mL total Phosphate 50 (R0)
 2 x 11 mL total Phosphate 50 (R3)

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
 Neumann-Neander-Str. 6-8, 52355 Dueren, 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



GHS03 GHS05 GHS07 GHS08

Signal word DANGER

Hazard identification	Hazard classes/categories
H272	Ox. Sol. 2
H290	Met. Corr. 1
H302	Acute Tox. 4 oral
H314	Skin Corr. 1A
H315	Skin Irrit. 2
H317	Skin Sens. 1
H319	Eye Irrit. 2
H334	Resp. Sens. 1
H335	STOT SE 3

2.1 Classification of the substance or mixture

5 mL Blank (NULL)

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	GHS07
Signal word	WARNING
Hazard identification	Hazard classes/categories
H315	Skin Irrit. 2
H319	Eye Irrit. 2

20x 35 mg NANOFIX total Phosphate 1-50 (R2)



	GHS03	GHS07	GHS08
Signal word	DANGER		
Hazard identification	Hazard classes/categories		
H272	Ox. Sol. 2		
H302	Acute Tox. 4 oral		
H315	Skin Irrit. 2		
H317	Skin Sens. 1		
H319	Eye Irrit. 2		
H334	Resp. Sens. 1		
H335	STOT SE 3		

0.5 mL total Phosphate 50 (R0)



	GHS07
Signal word	WARNING
Hazard identification	Hazard classes/categories
H315	Skin Irrit. 2
H319	Eye Irrit. 2

11 mL total Phosphate 50 (R3)



	GHS05
Signal word	DANGER
Hazard identification	Hazard classes/categories
H290	Met. Corr. 1
H314	Skin Corr. 1A

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). 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 sensibilizing substances.

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Oxidizing mixtures with signal word: **DANGER** and **H272** must not be labelled with H and P phrases **until 125 mL**. 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).

5 mL Blank (NULL)



GHS07

Signal word: WARNING

20x 35 mg NANOFIX total Phosphate 1-50 (R2)



GHS03



GHS07



GHS08

Signal word: DANGER

H317, H334

May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

P261sh, P280sh, P342+311

Avoid breathing dust/vapours. Wear protective gloves/eye protection. If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

0.5 mL total Phosphate 50 (R0)



GHS07

Signal word: WARNING

11 mL total Phosphate 50 (R3)



GHS05

Signal word: DANGER

H314

Causes severe skin burns and eye damage.

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

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

2.3 Other hazards

Possible hazards from physicochemical properties

Generally in the case of pH values are less than 2 or higher than 11.5 then it is corrosive. In the case of pH values are less than 5 or higher than 9 then it is irritant. ---

Information pertaining to particular risks to human and possible symptoms

Causes varying degrees of acid burns on the skin, to the eyes and to the mucous membranes and wounds which do not heal quickly depending on the concentration, temperature and the exposure time. Vapours especially which steam from hot liquids and mist can have a severe irritant effect upon the eyes and the respiratory organs.

Cause after oral intake, inhalation of vapours/dust, skin contact, impairments of health when ingested in small quantities. May

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

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

5 mL Blank (NULL)

Chemical:	<i>sulfuric acid</i>	CAS No.:	7664-93-9
Classification:	H314, Skin Corr. 1B		
Formula:	H ₂ SO ₄ (•H ₂ O)		
TSCA Inventory:	listed		
REACH Reg. No.:	01-2119458838-20-xxxx		
EC No.:	231-639-5	Indice No.:	016-020-00-8
RTECS:	WS5600000		
KE No.:	KE-32570, >10% Toxic 97-1-405, Acc. Precaution Chem.		
Concentration:	5 - <15 %		
acc. CLP (GHS):	H315, Skin Irrit. 2, H319, Eye Irrit. 2		

20x 35 mg NANOFIX total Phosphate 1-50 (R2)

Chemical:	<i>sodium peroxodisulfate</i>	CAS No.:	7775-27-1
Classification:	H272, Ox. Liq. 2, H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H317, Skin Sens. 1, H319, Eye Irrit. 2, H334, Resp. Sens. 1, H335, STOT SE 3		
Formula:	Na ₂ O ₈ S ₂		
Pseudonym:	sodium persulfate		
TSCA Inventory:	listed		
REACH Reg. No.:	01-2119495975-15-xxxx		
EC No.:	231-892-1		
RTECS:	SE0525000		
KE No.:	KE-12369		
Concentration:	80 - <100 %		
acc. CLP (GHS):	H272, Ox. Liq. 2, H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H317, Skin Sens. 1, H319, Eye Irrit. 2, H334, Resp. Sens. 1, H335, STOT SE 3		

0.5 mL total Phosphate 50 (R0)

Chemical:	<i>sulfuric acid</i>	CAS No.:	7664-93-9
Classification:	H314, Skin Corr. 1B		
Formula:	H ₂ SO ₄ (•H ₂ O)		
TSCA Inventory:	listed		
REACH Reg. No.:	01-2119458838-20-xxxx		
EC No.:	231-639-5	Indice No.:	016-020-00-8
RTECS:	WS5600000		
KE No.:	KE-32570, >10% Toxic 97-1-405, Acc. Precaution Chem.		
Concentration:	5 - <15 %		
acc. CLP (GHS):	H315, Skin Irrit. 2, H319, Eye Irrit. 2		

11 mL total Phosphate 50 (R3)

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Chemical: *ammonium heptamolybdate* CAS No.: 12054-85-2
 Classification: No criteria for classification or naming of chemical not required.
 Formula: $H_{24} Mo_7 N_6 O_{24}$
 Pseudonym: hexaammonium heptamolybdate
 TSCA Inventory: listed (CAS 11098-84-3)
 REACH Reg. No.: 01-2119498057-28-xxxx
 EC No.: 234-722-4
 RTECS: QA5076000 / QA4900000 MFCD: 00167059
 KE No.: not listed
 Concentration: 2 - <5 % Correlation factor: x 0.58 (= %Mo)
 The classification refers to weight percent of the metal (according to CLP Regulation 2008/1272/EC Annex VI, 1.1.3.2 Note 1)
 acc. CLP (GHS): The criteria for classification are not fulfilled.

Chemical: *sulfuric acid* CAS No.: 7664-93-9
 Classification: H314, Skin Corr. 1B
 Formula: $H_2 SO_4 (\cdot H_2 O)$
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119458838-20-xxxx
 EC No.: 231-639-5 Indice No.: 016-020-00-8
 RTECS: WS5600000
 KE No.: KE-32570, >10% Toxic 97-1-405, Acc. Precaution Chem.
 Concentration: 15 - <30 %
 acc. CLP (GHS): H290, Met. Corr. 1, H314, Skin Corr. 1B

Chemical: *ammoniummonovanadate* CAS No.: 7803-55-6
 Classification: H301, Acute Tox. 3 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2, H332, Acute Tox. 4 inh.
 Formula: $NH_4 VO_3$
 Pseudonym: ammonium trioxovanadate
 TSCA Inventory: listed
 EC No.: 232-261-3
 RTECS: YW0875000
 KE No.: KE-01756
 Concentration: 0,01 - <1 %
 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

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. ---

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4.2 Most important symptoms and effects, both acute and delayed

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. ---

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

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. Use a safety bottle when shaking test tubes.

7.2 Conditions for safe storage, including any incompatibilities

The original product package of MACHEREY-NAGEL allows a safe storage.

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. Use inbreakable container for transport of glass bottles.

7.3 Specific end use(s)

Product for analytical use.

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

5 mL Blank (NULL)

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

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

20x 35 mg NANOFIX total Phosphate 1-50 (R2)

Chemical: *sodium peroxodisulfate* CAS No.: 7775-27-1

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

0.5 mL total Phosphate 50 (R0)

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

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

11 mL total Phosphate 50 (R3)

Chemical: *ammonium heptamolybdate* CAS No.: 12054-85-2

TRGS 900 (DE): [Mo] 5 E mg/m³
E/e respirable

SUVA(CH) MAK value: [Mo] 5 e 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

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

Chemical: *ammoniummonovanadate* CAS No.: 7803-55-6

TRGS 900 (DE): [V] 0.005_A; 0.030_E mg/m³
E/e respirable

Short-term exposure factor: 1 (I); Y
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

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NIOSH: [V2O5] 0.05 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: [V2O5] 0.0005_A ; 0.0001_E 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 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

5 mL Blank (NULL)

Appearance: liquid	Colour: colored	Odor: odorless
pH:	0-1	
Specific gravity:	1,07 g/cm ³	
Solubility in water:	0-100 %	

20x 35 mg NANOFIX total Phosphate 1-50 (R2)

Appearance: solid (lyoph.)	Colour: colourless	Odor: odorless
pH:	5-7	
Solubility in water:	0-100 %	

0.5 mL total Phosphate 50 (R0)

Appearance: liquid	Colour: colourless	Odor: odorless
pH:	0	
Specific gravity:	1,10 g/cm ³	
Solubility in water:	0-100 %	

11 mL total Phosphate 50 (R3)

Appearance: liquid	Colour: slightly yellow	Odor: odorless
pH:	0	
Specific gravity:	1,12 g/cm ³	
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

Strong CORROSIVE, no further data available.

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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.

5 mL Blank (NULL)

Chemical:	<i>sulfuric acid</i>	CAS No.:	7664-93-9
TSCA Inventory:	listed	California Proposition 65 List:	not listed
ACGIH:	1 ppm		
Exposure Routes:	inhalation, ingestion, skin and/or eye contact		
Target Organs:	Eyes, skin, respiratory system, teeth		
Symptoms:	irritation eyes, skin, nose, throat; pulmonary edema, bronchitis; emphysema; conjunctivitis; stomatis; dental erosion; eye, skin burns; dermatitis		
Australia NICNAS:	not listed	Canada CEPA 1999:	DSL Yes
Japan CSCL/PRTR:	not listed, Japan 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-32570, >10% Toxic 97-1-405, Acc. Precaution Chem.		
LD50 _{orl rat} :	2140 mg/kg		
LC50 _{ihl rat} :	[8h] 600/ [4h] 850 mg/m ³		
TRGS 905 (DE):	Kat 4		

20x 35 mg NANOFIX total Phosphate 1-50 (R2)

Chemical:	<i>sodium peroxodisulfate</i>	CAS No.:	7775-27-1
TSCA Inventory:	listed	California Proposition 65 List:	not listed
Australia NICNAS:	Yes (PEC/18)	Canada CEPA 1999:	DSL Yes
Japan CSCL/PRTR:	not listed, Japan PDSCL: not listed		
Japan ISHL:	listed $\geq 1,0\%$ / $\geq 0,1\%$, Article 57-2 (SDS required)		
South Korea TCCA:	not listed		
Korea Exist.Chem.Inventory:	KE-12369		
LD50 _{orl rat} :	902 mg/kg		
Acute Effects:	Cause after oral intake, inhalation of vapours/dust, skin contact, impairments of health when ingested in small quantities.		
Chronic Effects:	May cause sensitization by skin contact, also in repeated contact of small amounts. May cause allergy or asthma symptoms or breathing difficulties if inhaled.		

0.5 mL total Phosphate 50 (R0)

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

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LC50_{ihl rat}: [8h] 600/ [4h] 850 mg/m³
 TRGS 905 (DE): Kat 4

11 mL total Phosphate 50 (R3)

Chemical: *ammonium heptamolybdate* CAS No.: 12054-85-2
 TSCA Inventory: listed (CAS 11098-84-3)
 Japan ISHL: listed ≥1,0%/≥0,1%,
 Korea Exist.Chem.Inventory: not listed

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 rat}: [8h] 600/ [4h] 850 mg/m³
 TRGS 905 (DE): Kat 4

Chemical: *ammoniummonovanadate* CAS No.: 7803-55-6
 TSCA Inventory: listed
 ACGIH: [8h TWA] 0.05 mg/m³
 Japan CSCL/PRTR: PRTR: ≥1,0% V class I, Japan PDSCL: Deleterious substance
 Japan ISHL: not listed
 Korea Exist.Chem.Inventory: KE-01756
 LD50_{orl rat}: 169 mg/kg
 LC50_{ihl rat}: 2.5 mg/m³
 LD50_{drm rat}: > 2500 mg/kg
 TRGS 905 (DE): DFG K2, M2

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

5 mL Blank (NULL)

Chemical: *sulfuric acid* CAS No.: 7664-93-9
 PNEC(fresh water): 2.5 µg/L
 PNEC = Predicted No Effected Concentration
 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

20x 35 mg NANOFIX total Phosphate 1-50 (R2)

Chemical: *sodium peroxodisulfate* CAS No.: 7775-27-1
 Water hazard class (DE): 1 WGK No.: 1352
 Storage class (VCI): 5.1 B

0.5 mL total Phosphate 50 (R0)

Chemical: *sulfuric acid* CAS No.: 7664-93-9
 PNEC(fresh water): 2.5 µg/L
 PNEC = Predicted No Effected Concentration
 LC50_{fish/96h}: [NOEC, 65d] 25 µg/L

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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

11 mL total Phosphate 50 (R3)

Chemical: *ammonium heptamolybdate* CAS No.: 12054-85-2
 Water hazard class (DE): 1 WGK No.: 0637
 Storage class (VCI): 12-13

Chemical: *sulfuric acid* CAS No.: 7664-93-9
 Avoid contact of substance/mixture to environment.
 PNEC(fresh water) : 2.5 µg/L
 PNEC = Predicted No Effected Concentration

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

Chemical: *ammoniummonovanadate* CAS No.: 7803-55-6
 Water hazard class (DE): 3
 Storage class (VCI): 6.1 B

12.2 Persistence and degradability

not necessary

12.3 Bioaccumulative potential

not necessary

12.4 Mobility in soil

not necessary

12.5 Results of PBT and vPvB assessment

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).

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

Maritime transport

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

Or use **Alternative declaration for transportation:**

UN No.: (see below) class 5.1 III, **Excepted Quantities** (≤ 30 mL/ $\Sigma \leq 1$ L) = ADR/ IATA E1

class 8 II, **Excepted Quantities** (≤ 30 mL/ $\Sigma \leq 500$ mL) = ADR/ IATA E2

or

14.1 UN number: 3215 14.2 UN proper shipping name: Persulphates, inorganic, n.o.s.

14.3 Class: 5.1 14.4 Packing group: III

Road transport

Classification code: O2

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Limited Quantity:	5 Kg	Tunnel restriction code:	E
Excepted Quantity:	E 1		
<i>Air transport</i>			
PAX:	559	max. weight PAX:	25 Kg
CAO:	563	max. weight CAO:	100 Kg
<i>Maritime transport</i>			
EmS:	F-A, S-Q	Storage category:	B
Maritime pollutant (5.2.1.6):		P* (Limited Quantity (LQ) until 5 L/kg per inner package)	

14.1 UN number: 3264 **14.2 UN proper shipping name: Corrosive liquid, acidic, inorganic, n.o.s. (sulfuric acid solution)**
14.3 Class: 8 **14.4 Packing group: II**

<i>Road transport</i>			
Classification code:	C1	Tunnel restriction code:	E
Limited Quantity:	1 L		
Excepted Quantity:	E 2		
<i>Air transport</i>			
PAX:	851	max. weight PAX:	1 L
CAO:	855	max. weight CAO:	30 L
<i>Maritime transport</i>			
EmS:	F-A, S-B	Storage category:	B

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 ---

SECTION 16: Other information

16.1 List of H and P phrases

16.1.1 List of relevant H phrases

H272	May intensify fire; oxidizer.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.

16.1.2 List of relevant P phrases

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P260sh	Do not breathe dust/vapours.
P261sh	Avoid breathing dust/vapours.
P264W	Wash with water thoroughly after handling.

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P280sh	Wear protective gloves/eye protection.
P301+312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
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.
P330	Rinse mouth.
P342+311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P390	Absorb spillage to prevent material damage.
P403+233	Store in a well-ventilated place. Keep container tightly closed.

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

TRGS 900, German engineering rules governing limits in air at work, updated 03/2018

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

TRGS 907, German engineering rules governing listing of substances and causes of sensitizations, updated November 2011

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

Revisions/Updates

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