

Safety Data Sheet

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

REF: 985092	NANOCOLOR total Nitrogen TNb 60	Page: 1/14
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

REF 985092
 Product name NANOCOLOR total Nitrogen TNb 60

REACH Registration number(s): see SECTION 3.1/3.2 or
 A registration number for the substance(s) does not exist because the annual tonnage does not require registration or the substance or its use is excluded from registration.

- 20 x 4 mL decomposition tubes A
- 1 x 20x 14 mg NANOFIX Compensation reagent
- 1 x 4 g NanOx N Decomposition reagent
- 1 x 11 mL NO₃/N R2
- 20 x 4 mL total Nitrogen TN_b 60 (tube)

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: 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/MSDS>

SECTION 2: Hazard identification

2.0 Classification of the complete product



GHS02 GHS03 GHS05 GHS07 GHS08

Signal word DANGER

Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H272	Ox. Sol. 2
H290	Met. Corr. 1
H302	Acute Tox. 4
H314	Skin Corr. 1B
H315	Skin Irrit. 2
H317	Skin Sens. 1
H319	Augenreizung Kat. 2
H334	Resp. Sens. 1
H335	STOT SE 3
H336	STOT SE 3

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2.1 Classification of the substance or mixture

4 mL decomposition tubes A

Signal word do not need labelling as hazardous
-

No hazard class

20x 14 mg NANOFIX Compensation reagent

Signal word do not need labelling as hazardous
-

No hazard class

4 g NanOx N Decomposition reagent



Signal word DANGER

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

11 mL NO₃/N R2



Signal word WARNING

Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H319	Augenreizung Kat. 2
H336	STOT SE 3

4 mL total Nitrogen TN_b 60 (tube)



Signal word DANGER

Hazard identification	Hazard classes/categories
H290	Met. Corr. 1
H314	Skin Corr. 1B

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2.2 Label elements

According **CLP (GHS)** inner packages must be only labelled with symbol(s) and product identifier (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 sensiblizing substances. Oxidizing mixtures with signal word: **DANGER** and **H272** must not be labelled with H and P phrases **until 125 mL** .

4 mL decomposition tubes A

do not need labelling as hazardous
Signal word: -

20x 14 mg NANOFIX Compensation reagent

do not need labelling as hazardous
Signal word: -

4 g NanOx N Decomposition reagent



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.

11 mL NO₃ /N R2



GHS02 GHS07

Signal word: WARNING

4 mL total Nitrogen TN_b 60 (tube)



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. Flammable properties. Vapour forms explosive mixtures with air.

Information pertaining to particular Risks to Human and possible Symptoms

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Causes varying degrees of acid burns on the skin, to the eyes and to the mucous membranes and wounds which do not heal quickly depending on the concentration, temperature and the exposure time. Vapours especially which steam from hot liquids and mist can have a severe irritant effect upon the eyes and the respiratory organs.
Cause after oral intake, inhalation of vapours/dust, skin contact, impairments of health when ingested in small quantities. May cause sensitization by skin contact, also in repeated contact of small amounts. May cause 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

4 mL decomposition tubes A

Chemical: *water*
Concentration: 90 - <100 %
Formula: H₂O
REACH Reg. No.: exempt, Annex IV
EC No.: 231-791-2
RTECS: ZC0110000
TSCA Inventory: listed
KE No.: KE-35400
acc. CLP (GHS): not necessary

CAS No.: 7732-18-5

20x 14 mg NANOFIX Compensation reagent

Chemical: *sodium sulfite*
Concentration: 70 - <100 %
Formula: Na₂SO₃, E221
Pseudonym: sulfurous acid, disodium salt
REACH Reg. No.: 01-2119537420-49-xxxx
EC No.: 231-821-4
RTECS: WE2150000
TSCA Inventory: listed
KE No.: KE-31612
acc. CLP (GHS): not necessary

CAS No.: 7757-83-7

4 g NanOx N Decomposition reagent

Chemical: *sodium carbonate*
Concentration: 20 - <50 %
Formula: Na₂CO₃
REACH Reg. No.: 01-2119485498-19-xxxx
EC No.: 207-838-8
RTECS: VZ4050000
TSCA Inventory: listed
KE No.: KE-31380
acc. CLP (GHS): H319

CAS No.: 497-19-8

Index No.: 011-005-00-2

Chemical: *potassium peroxydisulfate*
Concentration: 60 - <80 %
Formula: K₂O₈S₂
Pseudonym: potassium persulfate
REACH Reg. No.: 01-2119495676-19-xxxx
EC No.: 231-781-8
RTECS: SE0400000
TSCA Inventory: listed
KE No.: KE-12177
acc. CLP (GHS): H272, H302, H315, H317, H319, H334, H335

CAS No.: 7727-21-1

Index No.: 016-061-00-1
MFCD: 00011386

11 mL NO₃/N R2

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Chemical:	2,6-dimethylphenol	CAS No.:	576-26-1
Concentration:	< 1,00 %		
Formula:	C ₈ H ₁₀ O		
Pseudonym:	2,6-xylenol		
REACH Reg. No.:	01-2119552794-29-xxxx		
EC No.:	209-400-1	Indice No.:	604-006-00-X
RTECS:	ZE6125000		MFCD: 00002240
TSCA Inventory:	listed		
KE No.:	KE-35435, >5% Toxic 97-1-274		
acc. CLP (GHS):	not necessary		

Chemical:	2-propanol	CAS No.:	67-63-0
Concentration:	35 - <50 %		
Formula:	C ₃ H ₈ O		
Pseudonym:	isopropanol, IPA, propan-2-ol		
REACH Reg. No.:	01-2119457558-25-xxxx		
EC No.:	200-661-7	Indice No.:	603-117-00-0
RTECS:	NT8050000		MFCD: 00011674
TSCA Inventory:	listed		
KE No.:	KE-29363		
acc. CLP (GHS):	H226, H319, H336		

4 mL total Nitrogen TN_b 60 (tube)

Chemical:	<i>o</i> -phosphoric acid	CAS No.:	7664-38-2
Concentration:	25 - <40 %		
Formula:	H ₃ PO ₄ •H ₂ O		
Pseudonym:	orthophosphoric acid		
REACH Reg. No.:	01-2119485924-24-xxxx		
EC No.:	231-633-2	Indice No.:	015-011-00-6
RTECS:	TB6300000		
TSCA Inventory:	listed		
KE No.:	KE-27427		
acc. CLP (GHS):	H290, H314		

Chemical:	sulfuric acid	CAS No.:	7664-93-9
Concentration:	51 - <65 %		
Formula:	H ₂ SO ₄		
REACH Reg. No.:	01-2119458838-20-xxxx		
EC No.:	231-639-5	Indice No.:	016-020-00-8
RTECS:	WS5600000		
TSCA Inventory:	listed		
KE No.:	KE-32570, >10% Toxic 97-1-405, Acc. Precaution Chem.		
acc. CLP (GHS):	H314		

3.3 Remarks

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.

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- 4.1.4 After ORAL Intake**
After oral intake lots of water with activated charcoal supplement should be drunk after it has been ingested. Do not induce vomiting under any circumstances. Do not make any efforts to neutralise it. Contact medical advice for possible consequences.
- 4.2 Most important symptoms and effects, both acute and delayed**
Chronic Effects: May cause sensitization by skin contact, also in repeated contact of small amounts. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Avoid inhalation of dust. ---
- 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**
WARNING: Flammable (GHS regulation). May form 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, 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): 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. 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

4 mL decomposition tubes A

Chemical: *water*

CAS No.: 7732-18-5

20x 14 mg NANOFIX Compensation reagent

Chemical: *sodium sulfite*

CAS No.: 7757-83-7

DNEL: 298_{inh} mg/m³
DNEL = Derived No-Effect Level (for workers)

TRGS 900 (DE): -
 E/e respirable

4 g NanOx N Decomposition reagent

Chemical: *sodium carbonate*

CAS No.: 497-19-8

DNEL: 10_{inh} mg/m³
DNEL = Derived No-Effect Level (for workers)

TRGS 900 (DE): -
 E/e respirable

Chemical: *potassium peroxydisulfate*

CAS No.: 7727-21-1

DNEL: 18,2_{derm} mg/kg bw/day; 2.06_{inh} mg/m³
DNEL = Derived No-Effect Level (for workers)

TRGS 900 (DE): -
 E/e respirable

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

11 mL NO₃/N R2

Chemical: *2,6-dimethylphenol*

CAS No.: 576-26-1

NIOSH: not listed ppm

[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 ppm

Chemical: *2-propanol*

CAS No.: 67-63-0

DNEL: 500_{inh} mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC(fresh water): 140.9 mg/L
PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 200 ppm / 500 mg/m³
 E/e respirable

Short-term exposure factor: 2 (II), Y

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

SUVA(CH) MAK value: 200 ppm / 500 mg/m³

TRGS 903 (DE): B/b, U/b 25_{Aceton} mg/L
B blood, U urine

NIOSH: [TWA] 400 ppm / 980 mg/m³

NIOSH STEL: 500 ppm / 1225 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 400 ppm / 980 mg/m³

4 mL total Nitrogen TN_b 60 (tube)

Chemical: *o-phosphoric acid*

CAS No.: 7664-38-2

DNEL: 2.92 mg/m³
DNEL = Derived No-Effect Level (for workers)

EU value: 2 e (1) mg/m³

TRGS 900 (DE): 1 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: 1 mg/m³

NIOSH: TWA 1 / ST 3 mg/m³

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NIOSH STEL:	3 mg/m ³	
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period		
OSHA:	TWA 1 mg/m ³	
Chemical:	<i>sulfuric acid</i>	CAS No.: 7664-93-9
EU value:	0.1 e mg/m ³	
TRGS 900 (DE):	0.1 E mg/m ³ E/e respirable	
Short-term exposure factor:	1 (I), Y	
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded		
SUVA(CH) MAK value:	0,1 e mg/m ³	
NIOSH:	NTP Report on Carcinogens (RoC) List Yes (Known to be a human carcinogen); TWA 1 mg/m ³	
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period		
OSHA:	TWA 1 mg/m ³	

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

4 mL decomposition tubes A

Appearance: liquid	Colour: colourless	Odor: odorless
pH:	6-8	
Specific gravity:	1,00 g/cm ³	

20x 14 mg NANOFIX Compensation reagent

Appearance: solid (lyoph.)	Colour: white	Odor: odorless
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4 g NanOx N Decomposition reagent

Appearance: solid	Colour: colourless	Odor: odorless
pH:	5-7	
Solubility in water:	0-30 %	

11 mL NO₃/N R2

Appearance: liquid	Colour: rose	Odor: alcoholic
pH:	6-8	
Flash point:	18,5 °C	
Specific gravity:	0,9 g/cm ³	
Solubility in water:	0-100 %	

4 mL total Nitrogen TN_b 60 (tube)

Appearance: liquid	Colour: colourless	Odor: odorless
pH:	0-1	
Specific gravity:	1,79 g/cm ³	
Solubility in water:	0-100 %	

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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.

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.

4 mL decomposition tubes A

Chemical: *water* CAS No.: 7732-18-5
 TSCA Inventory: listed
 Korea Exist.Chem.Inventory: KE-35400

20x 14 mg NANOFIX Compensation reagent

Chemical: *sodium sulfite* CAS No.: 7757-83-7
 TSCA Inventory: listed
 Korea Exist.Chem.Inventory: KE-31612
 LD50_{orl rat}: 2610 mg/kg
 LC50_{ihl rat}: >5.5_{4h} mg/L

4 g NanOx N Decomposition reagent

Chemical: *sodium carbonate* CAS No.: 497-19-8
 TSCA Inventory: listed
 Korea Exist.Chem.Inventory: KE-31380
 LD50_{orl rat}: 4090 mg/kg
 LC_{LoWorl rat}: 4000 mg/kg
 LC50_{ihl rat}: 2300_{2h} mg/m³

Chemical: *potassium peroxydisulfate* CAS No.: 7727-21-1
 TSCA Inventory: listed California Proposition 65 List: not listed
 Australia NICNAS: Yes (PEC/18) Canada CEPA 1999: DSI Yes
 Japan CSCL/PRTR: not listed Japan ISHL: listed ≥1,0%/≥0,1%, Article 57-2 (SDS required)
 Japan PDSCL: not listed
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-12177
 LD50_{orl rat}: 802 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.
 TRGS 907 (DE): Sah

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11 mL NO₃ /N R2

Chemical: *2,6-dimethylphenol* CAS No.: 576-26-1
 TSCA Inventory: listed California Proposition 65 List: not listed
 Target Organs: Leber, Niere
 Australia NICNAS: not listed Canada CEPA 1999: DSL yes
 Japan CSCL/PRTR: PRTR - Class I Designated Chemical Substance Yes
 Japan PDSCL: not listed Japan ISHL: not listed
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-35435, >5% Toxic 97-1-274
 LD50_{orl rat}: 296 mg/kg
 LC_{LoWihl rbt}: 500 mg/m³
 LD50_{drm rat}: 2325 mg/kg
 LD50_{drm rbt}: 1000 mg/kg
 LD50_{orl mus}: 450 mg/kg

Chemical: *2-propanol* CAS No.: 67-63-0
 TSCA Inventory: listed California Proposition 65 List: not listed
 ACGIH: 1230 ppm
 Exposure Routes: inhalation, ingestion, skin and/or eye contact
 Target Organs: Eyes, skin, respiratory system
 Symptoms: irritation eyes, nose, throat; drowsiness, dizziness, headache; dry cracking skin; in animals: narcosis
 Australia NICNAS: Canada CEPA 1999: DSL yes
 Japan CSCL/PRTR: PAC yes
 Japan PDSCL: Japan ISHL: listed ≥1,0%/≥0,1%, Article 57-2 (SDS required)
 South Korea TCCA:
 Korea Exist.Chem.Inventory: KE-29363
 LD50_{orl rat}: 5045 mg/kg
 LC_{LoWorl hmn}: 3570 mg/kg
 LC50_{ihl rat}: 16_{4h} g/m³
 LD50_{drm rbt}: 12.8 g/kg
 TRGS 905 (DE): R_F C

4 mL total Nitrogen TN_b 60 (tube)

Chemical: *o-phosphoric acid* CAS No.: 7664-38-2
 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
 Symptoms: irritation eyes, skin, upper respiratory system; eye, skin, burns; dermatitis
 Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
 Japan CSCL/PRTR: not listed
 Japan PDSCL: not listed Japan ISHL: listed ≥1,0%/≥1,0%, Article 57-2 (SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-27427
 LD50_{orl rat}: 1530 mg/kg
 LC50_{ihl rbt}: 1.689 mg/L
 LD50_{drm rbt}: 2750 mg/kg
 TRGS 905 (DE): R_F C

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 mouse}: 320_{4h} mg/L



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LC50_{inh rat}: 510 mg/m³

TRGS 905 (DE): Kat 4

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

4 mL decomposition tubes A

Chemical: *water*

CAS No.: 7732-18-5

20x 14 mg NANOFIX Compensation reagent

Chemical: *sodium sulfite*

CAS No.: 7757-83-7

LC50_{fish/96h}: 315_{96h} mg/L

EC10_{pseudomonas putita/16h}: 260_{17h} mg/L

Water hazard class (DE): 1 WGK No.: 0282

Dispersion coefficient_(octanol-water): -4

Storage class (VCI): 12-13

4 g NanOx N Decomposition reagent

Chemical: *sodium carbonate*

CAS No.: 497-19-8

LC50_{fish/96h}: 300 mg/L

EC50_{daphnia/48h}: 265 mg/L

Water hazard class (DE): 1 WGK No.: 0222

Storage class (VCI): 12-13

Chemical: *potassium peroxydisulfate*

CAS No.: 7727-21-1

Water hazard class (DE): 1 WGK No.: 1350

Storage class (VCI): 5.1 B

11 mL NO₃/N R2

Chemical: *2,6-dimethylphenol*

CAS No.: 576-26-1

LC50_{pimephales promelas/96h}: 22-27 mg/L

EC50_{daphnia/48h}: 11.2 mg/L

Water hazard class (DE): 2 WGK No.: 1689

Dispersion coefficient_(octanol-water): 2.36

Storage class (VCI): 6.1 C

Chemical: *2-propanol*

CAS No.: 67-63-0

PNEC_(fresh water): 140.9 mg/L

PNEC = Predicted No Effected Concentration

LC50_{fish/96h}: 1400 mg/L

EC50_{daphnia/48h}: 13.3 g/L

IC50_{scenedesmus quadricauda/72h}: >1000 mg/L

EC10_{pseudomonas putita/16h}: EC5: 1050 mg/L

Water hazard class (DE): 1 WGK No.: 0135

Dispersion coefficient_(octanol-water): 0.05

Storage class (VCI): 3

4 mL total Nitrogen TN_b 60 (tube)

Chemical: *o-phosphoric acid*

CAS No.: 7664-38-2

Avoid contact of substance/mixture to environment.

LC50_{fish/96h}: 3-3.5 mg/L

Water hazard class (DE): 1 WGK No.: 0392

Storage class (VCI): 8 B

Chemical: *sulfuric acid*

CAS No.: 7664-93-9

Avoid contact of substance/mixture to environment.

LC50_{fish/96h}: 16-29 mg/L

EC50_{daphnia/48h}: 29_{24h} mg/L

Water hazard class (DE): 1 WGK No.: 0182

Storage class (VCI): 8 B

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- 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

Empty containers of corrosive reagents prior to disposal, rinse with water.

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 transport labelling
- 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

Alternative transport labelling follows:

UN No.: (see below) UN 1993 class 3 II, class 8 II, **Excepted Quantities** ($\leq 30 \text{ mL} / \Sigma \leq 500 \text{ mL}$) = 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 Tunnel restriction code: E
Limited Quantity: 5 Kg
Excepted Quantity: E 1
- Air transport*
PAX: 559 max. weight PAX: 25 Kg
CAO: 563 max. weight CAO: 100 Kg
- Maritime transport*
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. (o-phosphoric acid, sulfuric acid solution)
- 14.3 Class:** 8 **14.4 Packing group:** II
- Road transport*
Classification code: C1 Tunnel restriction code: E
Limited Quantity: 1 L
Excepted Quantity: E 2
- Air transport*
PAX: 851 max. weight PAX: 1 L
CAO: 855 max. weight CAO: 30 L
- Maritime transport*
EmS: F-A, S-B Storage category: B

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14.5 Environmental hazards

not necessary, 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

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

H226	Flammable liquid and vapour.
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.
H336	May cause drowsiness or dizziness.

16.1.2 List of relevant P phrases

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P221	Take any precaution to avoid mixing with combustibles... [deleted 2016]
P260D	Do not breathe vapours.
P260sh	Do not breathe dust/vapours.
P261sh	Avoid breathing dust/vapours.
P264W	Wash with water thoroughly after handling.
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 DE §§ 4 und 5 MuSchRiv)!

An individual package of this product or test kit has a moderate hazardous potential.

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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

TRGS 900, German engineering rules governing limits in air at work, updated September 2016

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