

# Safety Data Sheet

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

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

### 1.1 Product identifier

REF 985001  
 Product name NANOCOLOR Zirconium 100

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 20x 32 mg Zirconium 100 NANOFIX R2  
 20 x 5 mL Zirconium 100 (R0)

### 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](mailto:sds@mn-net.com) ([msds@mn-net.com](mailto:msds@mn-net.com))

### 1.4 Emergency telephone number

Information not necessary.

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

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### 2.1 Classification of the substance or mixture

**20x 32 mg Zirconium 100 NANOFIX R2**

Signal word Do not need labelling as hazardous  
 -

No hazard class

**5 mL Zirconium 100 (R0)**

Signal word Do not need labelling as hazardous  
 -

No hazard class

### 2.2 Label elements

**20x 32 mg Zirconium 100 NANOFIX R2**  
 Do not need labelling as hazardous  
 Signal word: -



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## 5 mL Zirconium 100 (R0)

Do not need labelling as hazardous  
Signal word: -

### 2.3 Other hazards

#### Possible hazards from physicochemical properties

According to our current status of knowledge and experience we state, that this product does not contain any substances, which - in accordance with EC regulations 1272/2008/EC, 1907/2006/EC and German Regulations for Hazardous goods - have to be declared as dangerous goods, either because of their applied concentration or because of their total amount in anyone kit. An individual package has considerably less hazardous potential. ---

#### Information pertaining to particular risks to human and possible symptoms

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#### Information pertaining to particular risks to the environment

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#### Other hazards

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances or 3.2 Mixtures

#### 20x 32 mg Zirconium 100 NANOFIX R2

Chemical: *xlenol orange tetrasodium salt (pH indicator)*

CAS No.: 3618-43-7

Classification: No criteria for classification or naming of chemical not required.

Formula:  $C_{31}H_{28}N_2Na_4O_{13}S$

Pseudonym:

$N,N'-[(1,1-dioxido-3H-2,1-benzoxathiol-3-ylidene)bis[(6-hydroxy-5-methyl-3,1-phenylene)methylene]]bis[N-(carboxymethyl)-glycine]$  tetrasodium salt

TSCA Inventory: listed

EC No.: 222-805-8

MFCD:

0044293

Concentration: < 1,00 %

acc. CLP (GHS): The criteria for classification are not fulfilled.

Chemical: *L(+)-ascorbic acid*

CAS No.: 50-81-7

Classification: No criteria for classification or naming of chemical not required.

Formula:  $C_6H_8O_6$

Pseudonym: vitamin C

TSCA Inventory: listed

REACH Reg. No.: exempt, Annex IV

EC No.: 200-066-2

RTECS: C17650000

MFCD:

00064328

KE No.: KE-01947

Concentration: 70 - <90 %

acc. CLP (GHS): The criteria for classification are not fulfilled.

#### 5 mL Zirconium 100 (R0)

Chemical: *sulfuric acid*

CAS No.: 7664-93-9

Classification: No criteria for classification or naming of chemical not required.

Formula:  $H_2SO_4 \cdot (H_2O)$

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: < 1,00 %

acc. CLP (GHS): The criteria for classification are not fulfilled.

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Chemical:	<i>aluminium chloride (hexahydrate)</i>	CAS No.:	7784-13-6
Classification:	H314, Skin Corr. 1B		
Formula:	AlCl <sub>3</sub> • 6 H <sub>2</sub> O		
Pseudonym:	aluminum chloride		
TSCA Inventory:	listed (CAS 7446-70-0)	Indice No.:	013-003-00-7
RTECS:	BD0530000		
Concentration:	0,1 - <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%.

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## SECTION 4: First aid measures

### 4.1 Description of first aid measures

Place insured person out of danger zone to fresh air immediately.

#### 4.1.1 After SKIN Contact

Not necessary.

#### 4.1.2 After EYE Contact

Not necessary.

#### 4.1.3 After INHALATION of vapours

Not necessary. ---

#### 4.1.4 After ORAL Intake

Not necessary. ---

### 4.2 Most important symptoms and effects, both acute and delayed

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### 4.3 Indication of any immediate medical attention and special treatment needed

No additionally recommendations. ---

## 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

None.

### 5.3 Advice for firefighters

No, for listed product. Product package burns like paper or plastic.

### 5.4 Additional information

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe vapours. Not necessary.

### 6.2 Environmental precautions

not necessary

### 6.3 Methods and material for containment and cleaning up

Clean working area with water. Flush used water into drains.

### 6.4 Reference to other sections

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Handling in accordance with the test instruction, that comes with the product. Use a safety bottle when shaking test tubes.

### 7.2 Conditions for safe storage, including any incompatibilities

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

Storage class (VCI): 8B

Water hazard class (DE): 2

### 7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage.

### 7.3 Specific end use(s)

Product for analytical use.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### 20x 32 mg Zirconium 100 NANOFIX R2

Chemical: *xlenol orange tetrasodium salt (pH indicator)*

CAS No.: 3618-43-7

Chemical: *L(+)-ascorbic acid*

CAS No.: 50-81-7

#### 5 mL Zirconium 100 (R0)

Chemical: *sulfuric acid*

CAS No.: 7664-93-9

DNEL: [inh] 50 µg/m<sup>3</sup>  
DNEL = Derived No-Effect Level (for workers)

PNEC<sub>(fresh water)</sub>: 2.5 µg/L  
PNEC = Predicted No Effect Concentration

EU value: 0.1 e mg/m<sup>3</sup>

TRGS 900 (DE): 0.1 E mg/m<sup>3</sup>  
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<sup>3</sup>

NIOSH: NTP Report on Carcinogens (RoC) List Yes (Known to be a human carcinogen); [TWA] 1 mg/m<sup>3</sup>  
[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<sup>3</sup>

Chemical: *aluminium chloride (hexahydrate)*

CAS No.: 7784-13-6

### 8.2 Exposure controls

Not necessary. Good ventilation and extraction system in the room, floor resistant to chemicals with floor drainage and washing facilities.

#### 8.2.1 Respiratory protection

Not necessary.

#### 8.2.2 Hand protection

Not necessary.

#### 8.2.3 Eye protection

Not necessary.

#### 8.2.4 Skin protection

Not necessary.

#### 8.2.5 Personal hygiene

Information not necessary.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### 20x 32 mg Zirconium 100 NANOFIX R2

Appearance: solid (lyoph.)

Colour: yellow

Odor: odorless

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**5 mL Zirconium 100 (R0)**  
Appearance: liquid

Colour: colourless

Odor: odorless

## 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

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

None

### 10.2 Chemical stability

No known instability.

### 10.3 Possibility of hazardous reactions

None.

### 10.4 Conditions to avoid

Not known. Observe labeled storage temperature. ---

### 10.5 Incompatible materials

Not known.

### 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.

#### 20x 32 mg Zirconium 100 NANOFIX R2

Chemical: *xylene orange tetrasodium salt (pH indicator)*

CAS No.: 3618-43-7

TSCA Inventory: listed

Chemical: *L(+)-ascorbic acid*

CAS No.: 50-81-7

TSCA Inventory: listed

Korea Exist.Chem.Inventory: KE-01947

LD50<sub>orl rat</sub>: 11900 mg/kgLD50<sub>ivn mus</sub>: 518 mg/kg

#### 5 mL Zirconium 100 (R0)

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  $\geq 1,0\%$ / $\geq 1,0\%$ , Article 57-2 (SDS required)

South Korea TCCA: Accident Precaution Chemical Yes

Korea Exist.Chem.Inventory: KE-32570, &gt;10% Toxic 97-1-405, Acc. Precaution Chem.

LD50<sub>orl rat</sub>: 2140 mg/kgLC50<sub>ihl rat</sub>: [8h] 600/ [4h] 850 mg/m<sup>3</sup>

TRGS 905 (DE): Kat 4

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Chemical: *aluminium chloride (hexahydrate)*  
 TSCA Inventory: listed (CAS 7446-70-0)  
 Japan CSCL/PRTR: not listed, Japan PDSCl: not listed  
 Japan ISHL: listed  $\geq 1,0\%$ / $\geq 0,1\%$ ,  
 LD50<sub>orl rat</sub>: 3311 mg/kg

CAS No.: 7784-13-6

## SECTION 12: Ecological information

### 12.1 Toxicity

Following information is valid for pure substances.

#### 20x 32 mg Zirconium 100 NANOFIX R2

Chemical: *xlenol orange tetrasodium salt (pH indicator)*  
 Water hazard class (DE): 2  
 Storage class (VCI): 12-13

CAS No.: 3618-43-7

Chemical: *L(+)-ascorbic acid*  
 Water hazard class (DE): 1 WGK No.: 0737  
 Storage class (VCI): 13

CAS No.: 50-81-7

#### 5 mL Zirconium 100 (R0)

Chemical: *sulfuric acid*  
 PNEC(fresh water): 2.5 µg/L  
 PNEC = Predicted No Effect Concentration  
 LC50<sub>fish/96h</sub>: [NOEC, 65d] 25 µg/L  
 EC50<sub>daphnia/48h</sub>: 100 mg/L  
 EC10<sub>pseudomonas putita/16h</sub>: [72h] 100 mg/L  
 Water hazard class (DE): 1 WGK No.: 0182  
 Storage class (VCI): 8 B

CAS No.: 7664-93-9

Chemical: *aluminium chloride (hexahydrate)*  
 Water hazard class (DE): 1

CAS No.: 7784-13-6

### 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

Not necessary.

### 13.1 Waste treatment methods

GENERAL: Empty solids into municipal waste, empty liquids diluted into drains.

## SECTION 14: Transport information

14.1 - 14.4: No dangerous goods according the transport regulations

### 14.5 Environmental hazards

none

### 14.6 Special precautions for user

not necessary

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## 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  
 MN Leaflet/User manual, also see [www.mn-net.com](http://www.mn-net.com)  
 Look for your country-specific regulations.

### 15.2 Chemical safety assessment

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## SECTION 16: Other information

### 16.1 List of H and P phrases

#### 16.1.1 List of relevant H phrases

#### 16.1.2 List of relevant P phrases

### 16.2 Training advice

Regular safety training.

### 16.3 Recommended restriction on use

None

### 16.4 Further information

MACHEREY-NAGEL GmbH & Co. KG provides the information contained herein in good faith being up-to-date of own realizations at revision time. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose.

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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, 4<sup>th</sup> adaptation of CLP regulation to technical and scientific progress  
 Regulation 669/2018/EU, 4<sup>th</sup> 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  
 KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)

#### Revisions/Updates

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