Material Safety Data Sheet

according to Directive 1907/2006/EC (REACh) and 453/2010/EU

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

1.1 Product identifier

REF	91310
Product name	QUANTOFIX Zinc / 100
	1 x 100 test strips
	2 x 30 mL Zn^{2+} -1

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.

If CE labelling: Product for in-vitro-diagnostic use (IVD) or Accessory for medical use

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

SECTION 2: Hazard identification

2.0 Classification of the complete product

Directive 1999/45/EC

Symbols

C

R R 35

CLP Directive 1272/2008/EC

GHS pictograms

GHS05

Signal word DANGER

Hazard identification	Hazard classes/categories
H290	Metal Corrosion cat. 1
H314	Skin Corrosion 1A. Serious Damage to Eyes 1

2.1 Classification of the substance or mixture

100 test strips

Directive 1999/45/EC

Symbols -
do not need labelling as hazardous

CLP Directive 1272/2008/EC

GHS pictograms do not need labelling as hazardous

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Signal word -

No hazard class

30 mL Zn^{2+} -1

Directive 1999/45/EC

R 35

Symbols

C

CLP Directive 1272/2008/EC

GHS pictograms

GHS05

Signal word DANGER

Hazard identification	Hazard classes/categories
H290	Metal Corrosion cat. 1
H314	Skin Corrosion 1A. Serious Damage to Eyes 1

2.2 Label elements

According **CLP (GHS)** inner packages must be only labelled with symbol(s) and product identificator.

100 test strips

Directive 1999/45/EC

Symbols:
-
-

S 22
Do not breathe dust.

CLP Directive 1272/2008/EC

GHS pictograms:
do not need labelling as hazardous
Signal word: -

30 mL Zn^{2+} -1

Directive 1999/45/EC

Symbols:

C
R 35
Causes severe burns.

S 26-37/39-45
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

CLP Directive 1272/2008/EC

GHS pictograms:

GHS05

Signal word: DANGER

H314
Causes severe skin burns and eye damage.

P260D, P280sh, P301+330+331, P303+361+353, P304+340, P305+351+338, P501
Do not breathe vapours. Wear protective gloves/eye protection. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Dispose of contents/container to regulated waste treatment.

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.

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.

Information pertaining to particular Risks to the Environment
---Avoid contact of substance/mixture to environment. ---
PBT: not applicable
vPvB: not applicable

Other Hazards
--- Hazard H290 "May be corrosive to metals." has only relevance for longer transportation time of larger amounts. The labelling GHS05 would be creating an "OVERLABELLING".

SECTION 3: Composition/Information on Ingredients

3.1 Substances or 3.2 Mixtures

100 test strips

Chemical:	*cellulose*		CAS No.: 9004-34-6
Concentration:	1 - 10 %		
Formula:	$(C_6H_{10}O_5)_n$		
REACH Reg. No.:	exempt, Annex IV		
EC No.:	232-674-9		
RTECS:	FJ5691460		
TSCA Inventory:	listed		
KE No.:	KE-05339		
acc. 1999/45/EC:	-	acc. CLP (GHS):	not necessary

Chemical:	*chemicals/mixture < 1%, no declaration necessary*		CAS No.: -
Concentration:	0,1 - 1 %		
KE No.:	listed		
acc. 1999/45/EC:	-	acc. CLP (GHS):	not necessary

Chemical:	*PVC foil (CAS 9002-86-2)*		CAS No.: -
Concentration:	95 - 100 %		
acc. 1999/45/EC:	-	acc. CLP (GHS):	not necessary

30 mL Zn^{2+} -1

Chemical:	*sodium hydroxide solution*		CAS No.: 1310-73-2
Concentration:	20 - 55 %		
Formula:	$NaOH \cdot H_2O$		
Pseudonym:	soda lye		
REACH Reg. No.:	01-2119457892-27-xxxx		
EC No.:	215-185-5	Indice No.:	011-002-00-6
RTECS:	WB4900000		
TSCA Inventory:	listed		
KE No.:	KE-31487		
acc. 1999/45/EC:	R 35	acc. CLP (GHS):	H290, H314

3.3 Remarks

List of R and H phrases: see chapter 16

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.

4.1.1 After SKIN Contact

Remove dust with wetted tissue. 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

Rub dust with teardrops from eyes or: 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. After inhalation of dust fresh air should be inhaled.

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

---

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 to 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 DISTREES 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. Danger for environment **only in the event of a large-scale leakage** or formation of hazardous substances.

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

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in accordance with the test instruction, that comes with the product.

7.2 Conditions for safe storage, including any incompatibilities

The original product package of MACHEREY-NAGEL allows a safe storage.
Storage class (German chemical industry): see chapter 12.1

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)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

100 test strips

Chemical: *cellulose* CAS No.: 9004-34-6
TRGS 900 (DE): Staub 1.25 A / 4 E mg/m³
E/e respirable
SUVA(CH) MAK value: 3 a ppm
NIOSH: TWA 10 (total) / 5 (resp) mg/m³
OSHA: TWA 15 (total) / 5 (resp) mg/m³

Chemical: *chemicals/mixture < 1%, no declaration necessary* CAS No.: -

Chemical: *PVC foil (CAS 9002-86-2)* CAS No.: -

30 mL Zn^{2+} -1

Chemical: *sodium hydroxide solution* CAS No.: 1310-73-2
DNEL: 1_{inh} mg/m³
DNEL = Derived No-Effect Level (for workers)
TRGS 900 (DE): (2 E) mg/m³
E/e respirable
Short-term exposure factor: (=1=, Y)
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
OSHA: TWA 2 mg/m³

8.2 Exposure controls

The highest level of cleanliness must be maintained at the workplace.

8.2.1 Respiratory Protection

Only if additional recommendations in test instruction or packing insert.

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.

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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

100 test strips
Appearance : solid Color : colored Odor : odorless

30 mL Zn^{2+} -1
Appearance : liquid Color : colourless Odor : odorless
pH: 14
Specific gravity: 1,35 g/mL
Solubility in water: 0-100 %

9.2 Other information

Relevant Properties of Substance Group

9.2.1
-

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
No known instability.

10.3 Possibility of hazardous reactions
No data available.

10.4 Conditions to avoid
Not necessary. Only if on label. Or when indicated in packing insert.

10.5 Incompatible materials
Avoid contact with concentrated acids and oxidizing agents. 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.

100 test strips

Chemical: *cellulose* CAS No.: 9004-34-6
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system
Symptoms: irritation eyes, skin, mucous membrane
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-05339
$LD50_{orl\ rat}$: >5000 mg/kg
$LC50_{ihl\ rat}$: >5800$_{4h}$ mg/m³
$LD50_{drm\ rbt}$: >2000 mg/kg

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Chemical: *chemicals/mixture < 1%, no declaration necessary* CAS No.: -
Korea Exist.Chem.Inventory: listed

Chemical: *PVC foil (CAS 9002-86-2)* CAS No.: -

30 mL Zn^{2+} -1

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: Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-31487
$LD50_{orl\ rat}$: $500_{100\%}$ mg/kg
$LD50_{orl\ mus}$: 40 mg/kg

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

100 test strips

Chemical: *cellulose* CAS No.: 9004-34-6
WGK (DE): nwg
Storage class (VCI): 11

Chemical: *chemicals/mixture < 1%, no declaration necessary* CAS No.: -
WGK (DE): 1
Storage class (VCI): 12-13

Chemical: *PVC foil (CAS 9002-86-2)* CAS No.: -

30 mL Zn^{2+} -1

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
WGK (DE): 1 WGK No.: 142
Storage class (VCI): 8 B

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

no 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) class 8 II, **Excepted Quantities** (≤30 mL/∑≤500 mL) = ADR/ IATA E2
or
14.1 UN number: 3266 14.2 UN proper shipping name: Corrosive liquid, basic, inorganic, n.o.s. (sodium hydroxide solution)
14.3 Class: 8 14.4 Packing group: II

Road transport

Classification code:	C5		
Limited Quantity:	1 L	Tunnel restriction code:	E
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	

14.5 Environmental hazards

not necessary

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 R and H phrases

16.1.1 List of relevant R phrases

R35	Causes severe burns.

16.1.2 List of relevant H phrases

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.

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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.

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, 4th adaptation of CLP regulation to technical and scientific progress
TRGS 900, German engineering rules governing limits in air at work, updated February 2015
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: 2014-02 Corrected structure of sections acc. regulation 453/2010/EU, if necessary
2014-04 Adaptation of regulation 487/2013/EU

You find our current versions of MSDS in Internet:
http://www.mn-net.com/MSDS

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