

Material Safety Data Sheet

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

Printing date: 28.05.2014

Date of issue: 11.03.2014

Page: 1/9

1 Identification of the Substance/Mixture and of the Company

1.1 Product identifier

REF 91317
 Product name QUANTOFIX Chlorine / 100
 1 x 7 g Chlorine-1
 1 x 25 mL Chlorine-2
 1 x 100 test strips

1.2 Relevant identified uses of the substance or mixture and uses advised against

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.

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

Missing subsections are not relevant for the risk assessment of the product and may be omitted programmatically.

2 Hazard Identification

2.1 Classification of the substance(s) or mixture(s) - in the complete product

Directive 1999/45/EC

Symbols -
 R -

CLP Directive 1272/2008/EC

GHS pictograms



GHS02 GHS07

Signal word WARNING

Hazard identification	Hazard classes/categories
EUH031	031 not defined
H226	Flammable Liquid cat. 3
H302	Acute Tox. resp. cat. 4
H312	Acute Tox. derm. cat 4
H332	Acute Tox. 4 inh.

2.2 Hazard Description

Possible Hazards from physicochemical Properties

Information pertaining to particular Risks to Human and possible Symptoms

Information pertaining to particular Risks to the Environment

Other Hazards

--- Contains an odor intensive reagent. Flammable properties. Vapour forms explosive mixtures with air.

Material Safety Data Sheet

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

Printing date: 28.05.2014

Date of issue: 11.03.2014

Page: 2/9

2.3 Other hazards: Description of the components

7 g Chlorine-1

Directive 1999/45/EC

Symbols - do not need labelling as hazardous

CLP Directive 1272/2008/EC

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

No hazard class

25 mL Chlorine-2

Directive 1999/45/EC

Symbols - do not need labelling as hazardous

CLP Directive 1272/2008/EC

GHS pictograms



GHS02 GHS07

Signal word WARNING

Hazard identification

Hazard classes/categories

EUH031	031 not defined
H226	Flammable Liquid cat. 3
H302	Acute Tox. resp. cat. 4
H312	Acute Tox. derm. cat 4
H332	Acute Tox. 4 inh.

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
Signal word do not need labelling as hazardous

No hazard class

3 Composition/Information on Ingredients

3.1 Substances or 3.2 Mixtures

7 g Chlorine-1

Chemical: phosphates (buffer salts)
Concentration: 75 - 100 %
Formula: $Me_{1-3} H_{2-0} PO_4$
TSCA Inventory: all listed
acc. 1999/45/EC: -

CAS No.: -

acc. CLP (GHS): not necessary

25 mL Chlorine-2

Material Safety Data Sheet

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

Printing date: 28.05.2014

Date of issue: 11.03.2014

Page: 3/9

Chemical: <i>pyridine</i>	CAS No.: 110-86-1
Concentration: 25 - 44 %	
Formula: C ₅ H ₅ N	
REACH Reg. No.: 01-2119493105-40-xxxx	
EC No.: 203-809-9	Indice No.: 613-002-00-7
RTECS: UR8400000	MFCD: 00011732
TSCA Inventory: listed	
acc. 1999/45/EC: R 10-20	acc. CLP (GHS): H226, H332
Chemical: <i>potassium cyanide</i>	CAS No.: 151-50-8
Concentration: 0,1 - 1 %	Correlation factor: x 0.40 (= %CN ⁻)
Formula: KCN	
REACH Reg. No.: 01-2119486407-29-xxxx	
EC No.: 205-792-3	Indice No.: 006-007-00-5
RTECS: TS8750000	MFCD: 00011397
TSCA Inventory: listed	
acc. 1999/45/EC: R 20/21/22	acc. CLP (GHS): H302, H312, H332, EUH031

100 test strips

Chemical: <i>cellulose</i>	CAS No.: 9004-34-6
Concentration: 1 - 10 %	
Formula: (C ₆ H ₁₀ O ₅) _n	
REACH Reg. No.: exempt, Annex IV	
EC No.: 232-674-9	
RTECS: FJ5691460	
TSCA Inventory: listed	
acc. 1999/45/EC: -	acc. CLP (GHS): not necessary
Chemical: <i>chemicals/mixture < 1%, no declaration necessary</i>	CAS No.: -
Concentration: 0,1 - 1 %	
acc. 1999/45/EC: -	acc. CLP (GHS): not necessary
Chemical: <i>PVC foil (CAS 9002-86-2)</i>	CAS No.: -
Concentration: 95 - 100 %	
acc. 1999/45/EC: -	acc. CLP (GHS): not necessary

3.2 Remarks

List of R and H phrases: see chapter 16

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.

4.1.1 After SKIN Contact

Remove dust with wetted tissue. Remove contaminated clothing. Rinse the affected skin or mucous membrane thoroughly under running water. (If possible) use soap.

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 with eye washing bottle, eye douche or running water (protect intact eye).

4.1.3 After INHALATION of Vapours

After inhalation of foam or vapour fresh air should be inhaled. Keep airways free. After inhalation of dust fresh air should be inhaled.

4.1.4 After ORAL Intake

After oral intake lots of water should be drunk after it has been ingested.

4.2 Indication of any immediate medical attention and special treatment needed

No additionally recommendations.

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.



Material Safety Data Sheet

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

Printing date: 28.05.2014

Date of issue: 11.03.2014

Page: 4/9

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.

5.4 Additional Information

6 Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Regular staff training is necessary.

6.2 Methods and material for containment and cleaning up

Bind any escaping liquid with inert absorbent. Collect small amounts of leaked liquid and flush with water into drains.

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.

8 Exposure Controls/Personal Protection

8.1 Control parameters

7 g Chlorine-1

Chemical: *phosphates (buffer salts)*

CAS No.: -

TSCA Inventory: all listed

25 mL Chlorine-2

Chemical: *pyridine*

CAS No.: 110-86-1

EU value: 5 ppm / 15 mg/m³

TRGS 900 (DE): 5 ppm / 15 mg/m³

E/e respirable

Short-term exposure factor: 2 (II)

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

SUVA(CH) MAK value: 5 ppm / 15 mg/m³

TRGS 905 (DE): carc. 3B_{DFG}

TSCA Inventory: listed

California Proposition 65 List: listed cancer

OSHA: 5 ppm / 15 mg/m³

Chemical: *potassium cyanide*

CAS No.: 151-50-8

TRGS 900 (DE): 5_{CN} E mg/m³

E/e respirable

Short-term exposure factor: 1

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

SUVA(CH) MAK value: 5_{CN} e mg/m³

TRGS 905 (DE): R_F C

Australia NICNAS: not listed

Canada CEPA 1999: DSL Yes

Japan CSCL/PRTR: not listed

Japan PDSCL: Poisonous Substance Yes

Japan ISHL: Article 57-1+2 (Labelling&SDS required)

South Korea TCCA: not listed

TSCA Inventory: listed

California Proposition 65 List: not listed

NIOSH: not listed

NIOSH STEL: skin, HCN 4.7 ppm / 5 mg/m³

OSHA: EPCRA/SARA Section 302 Extremely Hazardous Substances Yes (TPQ = 100 lbs) n/a; TWA_{skin}, HCN

10 ppm / 11 mg/m³

100 test strips

Chemical: *cellulose*

CAS No.: 9004-34-6

TRGS 900 (DE): Staub 4 E mg/m³

E/e respirable

SUVA(CH) MAK value: 3 a ppm

www.mn-net.com



MACHEREY-NAGEL GmbH & Co. KG · Neumann-Neander-Str. 6-8 · 52355 Düren · Germany

Germany
and international:

Tel.: +49 24 21 969-0
Fax: +49 24 21 969-199
E-mail: info@mn-net.com

Switzerland:

MACHEREY-NAGEL AG

Tel.: +41 62 388 55 00
Fax: +41 62 388 55 05

E-mail: sales-ch@mn-net.com

France:

MACHEREY-NAGEL EURL

Tel.: +33 388 68 22 68
Fax: +33 388 51 76 88

E-mail: sales-fr@mn-net.com

USA:

MACHEREY-NAGEL Inc.

Tel.: +1 484 821 0984
Fax: +1 484 821 1272

E-mail: sales-us@mn-net.com

Material Safety Data Sheet

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

Printing date: 28.05.2014

Date of issue: 11.03.2014

Page: 5/9

Australia NICNAS:	not listed	Canada CEPA 1999:	DSL yes
Japan CSCL/PRTR:	not listed	Japan ISHL:	not listed
Japan PDSCL:	not listed	California Proposition 65 List:	not listed
South Korea TCCA:	not listed		
TSCA Inventory:	listed		
NIOSH:	not listed		
OSHA:	not listed		

Chemical: *chemicals/mixture < 1%, no declaration necessary*

CAS No.: -

Chemical: *PVC foil (CAS 9002-86-2)*

CAS No.: -

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.

8.2.3 Eye Protection

Yes, safety glasses according EN 166 with integrated side shields or wrap-around protection.

8.2.4 Skin Protection

Not necessary.

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.

9 Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

7 g Chlorine-1

Color: colourless

Odor: odorless

Appearance: powder (solid)

25 mL Chlorine-2

Color: colourless

Odor: like pyridine

Appearance: liquid

100 test strips

Color: colored

Odor: odorless

Appearance: solid

9.2 Other information

9.2.1 Safety relevant Basis Data

7 g Chlorine-1

pH:

8-9

Solubility in water:

0-40 %

25 mL Chlorine-2

pH:

8-9

Specific gravity:

0,99 g/mL

Solubility in water:

0-100 %

100 test strips

9.2.2 Relevant Properties of Substance Group

9.3 Additional Information

not necessary

Material Safety Data Sheet

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

Printing date: 28.05.2014

Date of issue: 11.03.2014

Page: 6/9

10 Stability and Reactivity

10.1 Conditions to avoid

Not necessary. When indicated in packing insert.

10.2 Incompatible materials

Not necessary. Avoid contact with concentrated acids and oxidizing agents.

10.3 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.

11 Toxicological information

11.1 Information on toxicological effects

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

7 g Chlorine-1

Chemical: *phosphates (buffer salts)*
LD50_{orl rat}: > 2000 mg/kg

CAS No.: -

25 mL Chlorine-2

Chemical: *pyridine*
LD50_{orl rat}: 891 mg/kg
LC_{Lowihl rat}: 4000_{4h} mg/m³
LC_{Loworl gpg}: 4000 mg/kg
LC_{Loworl hmn}: 500 mg/kg
LC50_{ihl rat}: 28500_{1h} mg/m³
LD50_{drm rbt}: 1121 mg/kg

CAS No.: 110-86-1

Chemical: *potassium cyanide*
LD50_{orl rat}: 5 mg/kg
LC_{Loworl hmn}: 2.86 mg/kg
LD50_{drm rbt}: 14.3-33.3 mg/kg
LD50_{ipr rat}: 4 mg/kg
LD50_{orl mus}: 8.5 mg/kg
LD50_{scu rat}: 7.8 mg/kg

CAS No.: 151-50-8

100 test strips

Chemical: *cellulose*
LD50_{orl rat}: >5000 mg/kg
LC50_{ihl rat}: >5800_{4h} mg/m³
LD50_{drm rbt}: >2000 mg/kg

CAS No.: 9004-34-6

Chemical: *chemicals/mixture < 1%, no declaration necessary*

CAS No.: -

Chemical: *PVC foil (CAS 9002-86-2)*

CAS No.: -

12 Ecological information

12.1 Toxicity

Following information is valid for pure substances.

7 g Chlorine-1

Chemical: *phosphates (buffer salts)*
WGK (DE): 1
Storage class (VCI): 13

CAS No.: -

25 mL Chlorine-2

Chemical: *pyridine*
LC50_{fish/96h}: 4.6 mg/L
EC50_{daphnia/48h}: 240_{24h} mg/L
IC50_{scenedesmus quadricauda/72h}: IC5/7d: 120 mg/L
EC10_{pseudomonas putita/16h}: EC5/16h: 340 mg/L
WGK (DE): 2 WGK No.: 0179
Dispersion coefficient (o-w): 0.65
Storage class (VCI): 3

CAS No.: 110-86-1

Material Safety Data Sheet

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

Printing date: 28.05.2014

Date of issue: 11.03.2014

Page: 7/9

Chemical:	<i>potassium cyanide</i>	CAS No.:	151-50-8
LC50 _{daphnia magna/48h} :	248h ; 0.53 _{24h} mg/L		
LC50 _{fish/96h} :	0.45 mg/L		
EC50 _{daphnia/48h} :	0.041 mg/L		
IC50 _{scenedesmus quadricauda/72h} :	0.03 _{8d} mg/L		
EC10 _{pseudomonas putita/16h} :	EC10/16h: 0.001 mg/L		
WGK (DE):	3	WGK No.:	0338
Storage class (VCI):	6.1 B		

100 test strips

Chemical:	<i>cellulose</i>	CAS No.:	9004-34-6
WGK (DE):	nwg		
Storage class (VCI):	11		
Chemical:	<i>chemicals/mixture < 1%, no declaration necessary</i>	CAS No.:	-
WGK (DE):	1		
Chemical:	<i>PVC foil (CAS 9002-86-2)</i>	CAS No.:	-

13 Disposal Considerations

Do not collect in acidic waste. May form toxic gases.

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

14 Transport Information

No dangerous goods according the transport regulations

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
 Announcement BekGS 220 (DE), Safety Data Sheet, June 2013

According 1999/45/EC small amounts of harmful and highly flammable preparations/mixtures have partly/completely exemption from labelling (no symbols F, O, Xn, Xi, N and no R and S phrases are necessary) until **25-125 mL/g**.

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

Harmful chemicals/mixtures with signal word: **WARNING** and highly flammable chemicals/mixtures must not be labelled with H and P phrases until **125 mL** or **125 g**.

7 g Chlorine-1

Directive 1999/45/EC

Symbols:

-
-

CLP Directive 1272/2008/EC

GHS pictograms:

do not need labelling as hazardous

Material Safety Data Sheet

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

Printing date: 28.05.2014

Date of issue: 11.03.2014

Page: 8/9

Signal word: -

25 mL Chlorine-2

Directive 1999/45/EC

Symbols:

-

-

S 26

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

CLP Directive 1272/2008/EC

GHS pictograms:



GHS02 GHS07

Signal word: WARNING

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: -

15.2 Chemical safety assessment not necessary for these small amounts

16 Other Information

16.1 List of R and H phrases

16.1.1 List of relevant R phrases

R10 Flammable.
R20 Harmful by inhalation.
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

16.1.2 List of relevant H phrases

H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H332 Harmful if inhaled.
EUH031 Contact with acids liberates toxic gas.

16.2 Training Advice

Regular safety training.

16.3 Recommended Restriction on Use

Only for professional user.

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

16.4 Further Information

Material Safety Data Sheet

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

Printing date: 28.05.2014

Date of issue: 11.03.2014

Page: 9/9

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.

MACHEREY-NAGEL GmbH & Co. KG makes NO REPRESENTATIONS or WARRANTIES, either expressed or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Accordingly MACHEREY-NAGEL GmbH & Co. KG will not be responsible for damages resulting from use of or reliance upon this information. See terms and conditions at the end of our price lists for additional information.

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 July 2012

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

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

16.6. 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>