

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 91317
 Product name QUANTOFIX Chlorine

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 100 test strips
 1 x 7 g Cl₂-1
 1 x 25 mL Cl₂-2

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: 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



GHS02 GHS07

Signal word WARNING

Hazard identification	Hazard classes/categories
EUH031	031 not defined
H226	Flam. Liq. 3
H302	Acute Tox. 4 oral
H312	Acute Tox. 4 derm.
H332	Acute Tox. 4 inh.

2.1 Classification of the substance or mixture

100 test strips

Signal word Do not need labelling as hazardous
 -
 No hazard class

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7 g Cl₂ -1

Signal word Do not need labelling as hazardous
-
No hazard class

25 mL Cl₂ -2



GHS02 GHS07

Signal word WARNING

Hazard identification	Hazard classes/categories
EUH031	031 not defined
H226	Flam. Liq. 3
H302	Acute Tox. 4 oral
H312	Acute Tox. 4 derm.
H332	Acute Tox. 4 inh.

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).

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).

100 test strips

Do not need labelling as hazardous
Signal word: -

7 g Cl₂ -1

Do not need labelling as hazardous
Signal word: -

25 mL Cl₂ -2



GHS02 GHS07

Signal word: WARNING

2.3 Other hazards

Possible hazards from physicochemical properties

Flammable properties. ---

Information pertaining to particular risks to human and possible symptoms

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

Information pertaining to particular risks to the environment

Other hazards

Contains an odor intensive reagent. ---

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SECTION 3: Composition/information on ingredients

3.1 Substances or 3.2 Mixtures

100 test strips

Chemical: *cellulose* CAS No.: 9004-34-6
 Classification: No criteria for classification or naming of chemical not required.
 Formula: $(C_6H_{10}O_5)_n$
 TSCA Inventory: listed
 REACH Reg. No.: exempt, Annex IV
 EC No.: 232-674-9
 RTECS: FJ5691460
 KE No.: KE-05339
 Concentration: 1 - <10 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

Chemical: *chemicals/mixture < 1%* CAS No.: -
 Classification: No criteria for classification or naming of chemical not required.
 TSCA Inventory: all listed, <1%
 KE No.: listed
 Concentration: 0,1 - <1 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

Chemical: *PVC foil (CAS 9002-86-2)* CAS No.: -
 Classification: No criteria for classification or naming of chemical not required.
 TSCA Inventory: listed
 Concentration: 95 - <100 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

7 g Cl₂ -1

Chemical: *phosphates (buffer salts)* CAS No.: -
 Classification: No criteria for classification or naming of chemical not required.
 Formula: $K/Na_{1-3}H_{2-0}PO_4$
 TSCA Inventory: all listed
 KE No.: listed
 Concentration: 75 - <100 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

25 mL Cl₂ -2

Chemical: *pyridine* CAS No.: 110-86-1
 Classification: H225, Flam. Liq. 2, H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H332, Acute Tox. 4 inh.
 Formula: C_5H_5N
 Pseudonym: Azabenzene, Azine
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119493105-40-xxxx
 EC No.: 203-809-9
 RTECS: UR8400000
 KE No.: KE-29929
 Concentration: 32 - <44 %
 acc. CLP (GHS): H226, Flam. Liq. 3, H332, Acute Tox. 4 inh.

Indice No.: 613-002-00-7
 MFCD: 00011732

Chemical: *potassium cyanide* CAS No.: 151-50-8
 Classification: H300, Acute Tox. 2 oral, H310, Acute Tox. 2 derm., H330, Acute Tox. 2 inh., H410, Aquatic Chronic 1, EUH032, not defined
 Formula: KCN
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119486407-29-xxxx
 EC No.: 205-792-3
 RTECS: TS8750000
 KE No.: KE-29092, >1% Toxic 97-1-90
 Concentration: 0,1 - <1 %
 Correlation factor: $x 0.40 (= \%CN^-)$
 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): H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H332, Acute Tox. 4 inh., EUH031, 031 not defined

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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.

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 Most important symptoms and effects, both acute and delayed

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

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.

5.4 Additional information

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Regular staff training is necessary.

6.2 Environmental precautions

not necessary

6.3 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.

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.

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): 3

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.

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

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
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: TWA 15 (total) / 5 (resp) mg/m³

Chemical: *chemicals/mixture < 1%* CAS No.: -

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

7 g Cl₂ -1

Chemical: *phosphates (buffer salts)* CAS No.: -

25 mL Cl₂ -2

Chemical: *pyridine* CAS No.: 110-86-1

PNEC_(fresh water): 300 µg/L
PNEC = Predicted No Effected Concentration

EU value: [TWA] 5 ppm / 15 mg/m³

TRGS 900 (DE): [8h] 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

NIOSH: [TWA] 5 ppm / 15 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] 5 ppm / 15 mg/m³

Chemical: *potassium cyanide* CAS No.: 151-50-8

EU value: CN: [TWA] 1 / [STEL] 5 mg/m³

TRGS 900 (DE): [CN 8h] 1 / [15min] 5 mg/m³
E/e respirable

Short-term exposure factor: (4), H
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 5CN e mg/m³

NIOSH: not listed

NIOSH STEL: skin, HCN 4.7 ppm / 5 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: EPCRA/SARA Section 302 Extremely Hazardous Substances Yes (TPQ = 100 lbs) n/a; TWA_{skin}, HCN
10 ppm / 11 mg/m³

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8.2 Exposure controls

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

8.2.1 Respiratory protection

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.

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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

100 test strips

Appearance: solid

Colour: colored

Odor: odorless

7 g Cl₂ -1

Appearance: powder (solid)

Colour: colourless

Odor: odorless

pH:

8-9

Solubility in water:

0-40 %

25 mL Cl₂ -2

Appearance: liquid

Colour: colourless

Odor: like pyridine

pH:

8-9

Specific gravity:

0,99 g/mL

Solubility in water:

0-100 %

9.2 Other information

Relevant Properties of Substance Group

SECTION 10: Stability and reactivity

10.1 Reactivity

no further data available.

10.2 Chemical stability

No known instability.

10.3 Possibility of hazardous reactions

Possible: Contact with acids liberates toxic gas. No further data available.

10.4 Conditions to avoid

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.

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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:	<i>cellulose</i>	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/m ³		
LD50 _{drm rbt} :	>2000 mg/kg		

Chemical:	<i>chemicals/mixture < 1%</i>	CAS No.:	-
TSCA Inventory:	all listed, <1%		
Korea Exist.Chem.Inventory:	listed		

Chemical:	<i>PVC foil (CAS 9002-86-2)</i>	CAS No.:	-
TSCA Inventory:	listed		

7 g Cl₂ -1

Chemical:	<i>phosphates (buffer salts)</i>	CAS No.:	-
TSCA Inventory:	all listed		
Korea Exist.Chem.Inventory:	listed		
LD50 _{orl rat} :	> 2000 mg/kg		

25 mL Cl₂ -2

Chemical:	<i>pyridine</i>	CAS No.:	110-86-1
TSCA Inventory:	listed	California Proposition 65 List:	listed cancer
Exposure Routes:	inhalation, skin absorption, ingestion, skin and/or eye contact		
Target Organs:	Eyes, skin, central nervous system, liver, kidneys, gastrointestinal tract,		
Symptoms:	irritation eyes; headache, anxiety, dizziness, insomnia; nausea, anorexia; dermatitis; liver, kidney damage		
Japan CSCL/PRTR:	PRTR: ≥1,0% class I		
Japan ISHL:	listed ≥1,0%/≥0,1%,		
Korea Exist.Chem.Inventory:	KE-29929		
LD50 _{orl rat} :	800-1600 mg/kg		
LC _{LoWihl rat} :	[4h] 4900 ppm		
LC _{LoWorl gpg} :	4000 mg/kg		
LC _{LoWorl hmn} :	500 mg/kg		
LC50 _{ihl rat} :	28500 _{1h} mg/m ³		
LD50 _{drm rbt} :	1000-2000 mg/kg		
Acute Effects:	Cause after skin contact, impairments of health when ingested in small quantities.		
TRGS 905 (DE):	[DFG] carc. 3B		

Chemical:	<i>potassium cyanide</i>	CAS No.:	151-50-8
TSCA Inventory:	listed	California Proposition 65 List:	not listed
Target Organs:	act on blood or hemato-poietic system: decrease hemoglobin function; deprive body tissues of oxygen		
Symptoms:	cyanosis; loss of consciousness		
Australia NICNAS:	not listed	Canada CEPA 1999:	DSL Yes
Japan CSCL/PRTR:	Poisonous substance, PRTR: ≥1,0% CN class I, Japan PDSCL: Poisonous Substance		
Japan ISHL:	listed ≥1,0%/≥1,0%, Article 57-1+2 (Labelling&SDS required)		
South Korea TCCA:	not listed		
Korea Exist.Chem.Inventory:	KE-29092, >1% Toxic 97-1-90		
LD50 _{orl rat} :	5 mg/kg		
LC _{LoWorl hmn} :	2.86 mg/kg		

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LD50_{drim 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

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

TRGS 905 (DE): R_F C

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

100 test strips

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

Chemical: *chemicals/mixture < 1%* CAS No.: -
 Water hazard class (DE): 1
 Storage class (VCI): 12-13

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

7 g Cl₂ -1

Chemical: *phosphates (buffer salts)* CAS No.: -
 Water hazard class (DE): 1
 Storage class (VCI): 13

25 mL Cl₂ -2

Chemical: *pyridine* CAS No.: 110-86-1
 PNEC (fresh water) : 300 µg/L
 PNEC = Predicted No Effected Concentration

LC50_{fish/96h} : [EC50 4h] 560-1000 mg/L
 EC50_{daphnia/48h} : 320 mg/L
 IC50_{scenedesmus quadricauda/72h} : IC5/7d: 120 mg/L
 EC10_{pseudomonas putita/16h} : [EC50 72h] 320 mg/L mg/L
 Water hazard class (DE): 2 WGK No.: 0179
 Dispersion coefficient_(octanol-water) : 0.64
 Storage class (VCI): 3

Chemical: *potassium cyanide* CAS No.: 151-50-8
 LC50_{daphnia magna/48h} : 248h ; 0.5324h mg/L
 LC50_{fish/96h} : 0.45 mg/L
 EC50_{daphnia/48h} : 0.041 mg/L
 IC50_{scenedesmus quadricauda/72h} : 0.038d mg/L
 EC10_{pseudomonas putita/16h} : EC10/16h: 0.001 mg/L
 Water hazard class (DE): 3 WGK No.: 338
 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

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12.6 Other adverse effects

no additional data available

SECTION 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

SECTION 14: Transport information

14.1 - 14.4: No dangerous goods according to the transport regulations

14.5 Environmental hazards

none

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

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.

16.1.2 List of relevant P phrases

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P260D	Do not breathe 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.
P302+352	IF ON SKIN: Wash with plenty of water.
P330	Rinse mouth.

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.

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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

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

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

Revisions/Updates

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