

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

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 -
 R -

CLP Directive 1272/2008/EC

GHS pictograms



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
H315	Skin Irritation cat. 2
H319	Eye Irritation cat. 2
H332	Acute Tox. 4 inh.

2.1 Classification of the substance or mixture

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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
H315	Skin Irritation cat. 2
H319	Eye Irritation cat. 2
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 -

No hazard class

7 g Cl₂ -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 -

No hazard class

2.2 Label elements

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 **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).

25 mL Chlorine-2

Directive 1999/45/EC

Symbols:

-

-

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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: -

7 g Cl₂ -1

Directive 1999/45/EC

Symbols:

-
-

CLP Directive 1272/2008/EC

GHS pictograms:

do not need labelling as hazardous

Signal word: -

2.3 Other hazards

Possible Hazards from physicochemical Properties

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

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. ---

SECTION 3: Composition/Information on Ingredients

3.1 Substances or 3.2 Mixtures

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Chemical: *pyridine* CAS No.: 110-86-1
 Concentration: 25 - <44 %
 Formula: C₅H₅N
 Pseudonym: Azabenzene, Azine
 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
 KE No.: KE-29929
 acc. 1999/45/EC: R 10-20 acc. CLP (GHS): H226, H315, H319, H332

Chemical: *potassium cyanide* 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
 KE No.: KE-29092, >1% Toxic 97-1-90
 acc. 1999/45/EC: R 20/21/22 acc. CLP (GHS): H302, H312, H332, EUH031

100 test strips

Chemical: *cellulose* CAS No.: 9004-34-6
 Concentration: 1 - <10 %
 Formula: (C₆H₁₀O₅)_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 %
 TSCA Inventory: all <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 %
 TSCA Inventory: listed
 acc. 1999/45/EC: - acc. CLP (GHS): not necessary

7 g Cl₂-1

Chemical: *phosphates (buffer salts)* CAS No.: -
 Concentration: 75 - <100 %
 Formula: Me₁₋₃H₂₋₀PO₄
 TSCA Inventory: all listed
 KE No.: listed
 acc. 1999/45/EC: - acc. CLP (GHS): not necessary

3.3 Remarks

List of R, H and P phrases: see section 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.

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.



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- 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**
Avoid inhalation of dust. ---
- 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**

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

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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
 NIOSH: TWA 5 ppm / 15 mg/m³
 OSHA: TWA 5 ppm / 15 mg/m³

Chemical: *potassium cyanide*

CAS No.: 151-50-8

TRGS 900 (DE): 5_{CN} E_{ausgesetzt} 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: 5_{CN} e mg/m³
 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 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.: -

7 g Cl₂ -1

Chemical: *phosphates (buffer salts)*

CAS No.: -

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.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

25 mL Chlorine-2

Appearance: liquid	Color: colourless	Odor: like pyridine
pH: 8-9		
Specific gravity: 0,99 g/mL		
Solubility in water: 0-100 %		

100 test strips

Appearance: solid	Color: colored	Odor: odorless
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7 g Cl₂ -1

Appearance: powder (solid)	Color: colourless	Odor: odorless
pH: 8-9		
Solubility in water: 0-40 %		

9.2 Other information

Relevant Properties of Substance Group

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. Possible: Contact with acids liberates toxic gas.

10.4 Conditions to avoid

10.5 Incompatible materials

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

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.

25 mL Chlorine-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	
Korea Exist.Chem.Inventory:	KE-29929	
LD50 _{orl rat} :	891 mg/kg	
LC _{LoWihl rat} :	4000 _{4h} mg/m ³	
LC _{LoWorl gpg} :	4000 mg/kg	
LC _{LoWorl hmn} :	500 mg/kg	
LC50 _{ihl rat} :	28500 _{1h} mg/m ³	
LD50 _{drm rbt} :	1121 mg/kg	
Acute Effects:	Cause after skin contact, impairments of health when ingested in small quantities.	
TRGS 905 (DE):	carc. 3B _{DFG}	

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Chemical: *potassium cyanide* 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
 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
 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

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

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

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

7 g Cl₂ -1

Chemical: *phosphates (buffer salts)* CAS No.: -
 TSCA Inventory: all listed
 Korea Exist.Chem.Inventory: listed
 LD50_{orl rat}: > 2000 mg/kg

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

25 mL Chlorine-2

Chemical: *pyridine* CAS No.: 110-86-1
 LC50_{fish/96h}: 4.6 mg/L
 EC50_{daphnia/48h}: 240_{24h} mg/L
 IC50_{scenedesmus quadricauda/72h}: IC50/7d: 120 mg/L
 EC10_{pseudomonas putita/16h}: EC5/16h: 340 mg/L
 Water hazard class (DE): 2 WGK No.: 0179
 Dispersion coefficient_(octanol-water): 0.65



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Storage class (VCI): 3

Chemical: *potassium cyanide* 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
 Water hazard class (DE): 3 WGK No.: 338
 Storage class (VCI): 6.1 B

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

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

- 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

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 the transport regulations

- 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



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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, H and P 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.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H332 Harmful if inhaled.
 EUH031 Contact with acids liberates toxic gas.

16.1.3 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.
 P280sh Wear protective gloves/eye protection.
 P302+352 IF ON SKIN: Wash with plenty of water/...

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

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 September 2016
 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

You find our current versions of MSDS in Internet:

<http://www.mn-net.com/MSDS>