

Safety Data Sheet

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

REF: 91315	QUANTOFIX Ammonium	Page: 1/9
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

REF 91315
 Product name QUANTOFIX Ammonium

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 sticks Ammonium
 2 x 30 mL NH₄⁺ -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: 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



GHS05

Signal word DANGER

Hazard identification	Hazard classes/categories
H290	Met. Corr. 1
H314	Skin Corr. 1A

2.1 Classification of the substance or mixture

100 Test sticks Ammonium

Signal word Do not need labelling as hazardous
 -

No hazard class

30 mL NH₄⁺ -1

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GHS05

Signal word

DANGER

Hazard identification	Hazard classes/categories
H290	Met. Corr. 1
H314	Skin Corr. 1A

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).

Metal corrosive solutions **do not have to** be labelled with GHS symbol, signal word, H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2.1.3).

100 Test sticks Ammonium

Do not need labelling as hazardous
Signal word: -

30 mL NH₄⁺ -1



GHS05

Signal word: DANGER

H314

Causes severe skin burns and eye damage.

P260sh, P280sh, P303+361+353, P305+351+338, P310

Do not breathe dust/vapours. Wear protective gloves/eye protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

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. H290 "May be corrosive to metals." has only relevance for higher concentrations and larger amounts. The labelling GHS05 would be creating an "OVERLABELLING" (see GHS Directive 1272/2008/EC Annex I, chapter 1.5.2.1.3., until 125 mL no labelling necessary). ---

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.
Can accumulate within the body.

-

Information pertaining to particular risks to the environment

Avoid contact of substance/mixture to environment.

PBT: not applicable

vPvB: not applicable

Other hazards

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SECTION 3: Composition/information on ingredients

3.1 Substances or 3.2 Mixtures

100 Test sticks Ammonium

Chemical: *potassium tetraiodomercurate(II)* CAS No.: 7783-33-7
 Classification: No criteria for classification or naming of chemical not required.
 Formula: $K_2(HgI_4)$
 TSCA Inventory: listed
 EC No.: 231-990-4-8 Indice No.: 080-004-00-7
 RTECS: OU9670000
 KE No.: KE-12197, Toxic 97-1-140
 Concentration: < 0,10 % Correlation factor: x 0.26 (= %Hg)
 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): The criteria for classification are not fulfilled.

Chemical: *filter paper (cellulose CAS 9004-34-6)* CAS No.: -
 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: *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.

30 mL NH_4^+ -1

Chemical: *sodium hydroxide solution* CAS No.: 1310-73-2
 Classification: H290, Met. Corr. 1, H314, Skin Corr. 1B
 Formula: $NaOH \cdot H_2O$
 Pseudonym: soda lye
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119457892-27-xxxx
 EC No.: 215-185-5 Indice No.: 011-002-00-6
 RTECS: WB4900000
 KE No.: KE-31487
 Concentration: 20 - <35 %
 acc. CLP (GHS): H290, Met. Corr. 1, H314, Skin Corr. 1B

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. 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.

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- 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**
Can accumulate within the body. ---
- 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 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 DISTRESSES 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. ---
- 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**
Danger for environment **only in the event of a large-scale leakage** or formation of hazardous substances. ---

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**
see information in section 5.4 ---

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): 8B
Water hazard class (DE): 3
- 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.

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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 sticks Ammonium

Chemical: *potassium tetraiodomercurate(II)*

CAS No.: 7783-33-7

EU value: [Hg] 0.02 e mg/m³

TRGS 900 (DE): [Hg] 0.02 E mg/m³
E/e respirable

Short-term exposure factor: 8 (H), H, Sh
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: [Hg][MAK] 0,02 e/[STEL] 0,16 e mg/m³

SUVA(CH) BAT value: [Krea U/d] 35 µg/L

TRGS 903 (DE): [Krea U/a] 25 µg/L
B blood, U urine, a no limitation, b end of exposition or shift

NIOSH: [Hg vapor, TWA_{skin}] 0.05; other 0.1 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] 0.1 mg/m³

Chemical: *filter paper (cellulose CAS 9004-34-6)*

CAS No.: -

TRGS 900 (DE): 1.25 A / 4 E mg/m³
E/e respirable

SUVA(CH) MAK value: 3 a mg/m³

NIOSH: not listed

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

OSHA: not listed

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

CAS No.: -

30 mL NH₄⁺ -1

Chemical: *sodium hydroxide solution*

CAS No.: 1310-73-2

DNEL: [inh] 1 mg/m³
DNEL = Derived No-Effect Level (for workers)

TRGS 900 (DE): 2 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

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

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

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 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.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

100 Test sticks Ammonium

Appearance: solid Colour: yellow Odor: odorless

30 mL NH₄⁺ -1

Appearance: liquid Colour: 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

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

Can react violently with organic material. No further data available.

10.4 Conditions to avoid

Not necessary. ---

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 sticks Ammonium

Chemical: *potassium tetraiodomercurate(II)* CAS No.: 7783-33-7
 TSCA Inventory: listed California Proposition 65 List: listed developmental
 Exposure Routes: inhalation, skin absorption, ingestion, skin and/or eye contact
 Target Organs: Eyes, skin, respiratory system, central nervous system, kidneys
 Symptoms: irritation eyes, skin; cough, chest pain, dyspnea (breathing difficulty), bronchitis, pneumonitis; tremor, insomnia, irritability, indecision, headac
 Japan CSCL/PRTR: PRTR: ≥1,0%Hg class I, Japan PDSCL: Poisonous substance
 Japan ISHL: listed ≥0,3%/≥0,1%
 Korea Exist.Chem.Inventory: KE-12197, Toxic 97-1-140
 LD50_{orl rat}: HgI₂ 18 mg/kg
 LC₅₀_{LoWorl hmn}: 357 mg/kg
 LD50_{drm rat}: 75 mg/kg

TRGS 907 (DE): Sh

Chemical: *filter paper (cellulose CAS 9004-34-6)* CAS No.: -
 TSCA Inventory: listed California Proposition 65 List: not listed
 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

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LC50_{ihl rat}: >5800_{4h} mg/m³
 LD50_{drm rbt}: >2000 mg/kg

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

30 mL NH₄⁺ -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 PDSC: not listed
 Japan ISHL: listed ≥1,0%/≥1,0%, Article 57-2 (SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-31487
 LD50_{orl rat}: [40%] 1250 / [<25%] >2000 mg/kg
 LD50_{orl mus}: 40 mg/kg

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

100 Test sticks Ammonium

Chemical: potassium tetraiodomercurate(II) CAS No.: 7783-33-7
 Bio Toxicity: LC₅₀: 0.5_{HgCl2/48h} mg/L
 Water hazard class (DE): 3 WGK No.: n.n.
 Storage class (VCI): 6.1 B

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

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

30 mL NH₄⁺ -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
 Water hazard class (DE): 1 WGK No.: 142
 Storage class (VCI): 8 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

12.6 Other adverse effects

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no additional 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

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 declaration for transportation

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

Or use **Alternative declaration for transportation:**

UN No.: (see below) class 8 II, **Excepted Quantities** ($\leq 30 \text{ mL} / \Sigma \leq 500 \text{ mL}$) = 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

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 ---

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SECTION 16: Other information

16.1 List of H and P phrases

16.1.1 List of relevant H phrases

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

16.1.2 List of relevant P phrases

P260sh Do not breathe dust/vapours.
P280sh Wear protective gloves/eye protection.
P303+361+353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P390 Absorb spillage to prevent material damage.

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 for DE §§ 11-13 MuSchG 2017)!
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
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