

Material Safety Data Sheet

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

Printing date: 28.05.2014

Date of issue: 21.05.2014

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1 Identification of the Substance/Mixture and of the Company

1.1 Product identifier

REF 91334
 Product name QUANTOFIX Arsenic 10 / 100

1 x 10 mL As-1
 2 x 30 g As-2
 2 x 30 g As-3 (Arsenic 10)
 1 x 100 test sticks Arsenic

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



Xi
 R 36/38

R

CLP Directive 1272/2008/EC
 GHS pictograms



GHS07

Signal word

WARNING

Hazard identification

Hazard classes/categories

H315	Skin Irritation cat. 2
H319	Eye Irritation cat. 2
H410	Hazardous to the aquatic environment - chronic cat. 1
H411	Hazardous to the aquatic environment - chronic cat. 2
H412	Hazardous to the aquatic environment - chronic cat. 3

2.2 Hazard Description

Possible Hazards from physicochemical Properties

In the case of pH values are less than 5 or higher than 9 then it is irritant.

Information pertaining to particular Risks to Human and possible Symptoms

Can accumulate within the body.

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Information pertaining to particular Risks to the Environment

Other Hazards

2.3 Other hazards: Description of the components

10 mL As-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 WARNING

Hazard identification

Hazard classes/categories

H411 Hazardous to the aquatic environment - chronic cat. 2

30 g As-2

Directive 1999/45/EC

Symbols R 36/38



Xi

CLP Directive 1272/2008/EC

GHS pictograms



GHS07

Signal word WARNING

Hazard identification

Hazard classes/categories

H315 Skin Irritation cat. 2
H319 Eye Irritation cat. 2
H412 Hazardous to the aquatic environment - chronic cat. 3

30 g As-3 (Arsenic 10)

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 WARNING

Hazard identification

Hazard classes/categories

H410 Hazardous to the aquatic environment - chronic cat. 1

100 test sticks Arsenic

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 do not need labelling as hazardous

No hazard class

3 Composition/Information on Ingredients

3.1 Substances or 3.2 Mixtures

10 mL As-1

Chemical:	<i>potassium permanganate</i>	CAS No.:	7722-64-7
Concentration:	2,5 - 5 %		
Formula:	KMnO ₄		
REACH Reg. No.:	01-2119480139-34-xxxx	Index No.:	025-002-00-9
EC No.:	231-760-3		
RTECS:	SD6475000		
TSCA Inventory:	listed		
acc. 1999/45/EC:	R 51/53	acc. CLP (GHS):	H411

30 g As-2

Chemical:	<i>aminosulphonic acid (sulphamic acid)</i>	CAS No.:	5329-14-6
Concentration:	50 - 100 %		
Formula:	H ₃ NO ₃ S		
REACH Reg. No.:	01-2119488633-28-xxxx	Index No.:	016-026-00-0
EC No.:	226-218-8	MFCID:	0005994x
RTECS:	WO5950000		
TSCA Inventory:	listed		
acc. 1999/45/EC:	R 36/38-52/53	acc. CLP (GHS):	H315, H319, H412

30 g As-3 (Arsenic 10)

Chemical:	<i>zinc powder (stabilized)</i>	CAS No.:	7440-66-6
Concentration:	75 - 100 %		
Formula:	Zn		
REACH Reg. No.:	01-2119467174-37-xxxx	Index No.:	030-002-01-9
EC No.:	231-175-3		
RTECS:	ZG8600000		
TSCA Inventory:	listed		
acc. 1999/45/EC:	R 50/53	acc. CLP (GHS):	H410

100 test sticks Arsenic

Chemical:	<i>mercury(II) bromide</i>	CAS No.:	7789-47-1
Concentration:	< 0,09 %	Correlation factor: x 0.56 (= %Hg)	
Formula:	HgBr ₂		
EC No.:	232-169-3	Index No.:	080-004-00-7
RTECS:	OV7415000		
TSCA Inventory:	listed		
acc. 1999/45/EC:	-	acc. CLP (GHS):	not necessary

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>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

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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.

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

10 mL As-1

Chemical: *potassium permanganate*
TRGS 900 (DE): 0,5_{Mn} E mg/m³
E/e respirable

CAS No.: 7722-64-7

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

TSCA Inventory: listed

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30 g As-2

Chemical: *aminosulphonic acid (sulphamic acid)*
TSCA Inventory: listed

CAS No.: 5329-14-6

30 g As-3 (Arsenic 10)

Chemical: *zinc powder (stabilized)*
DNEL: 1_{inh} mg/m^3
DNEL = Derived No-Effect Level (for workers)
TRGS 900 (DE): 0.1A / 2E mg/m^3
E/e respirable
TSCA Inventory: listed

CAS No.: 7440-66-6

100 test sticks Arsenic

Chemical: *mercury(II) bromide*
EU value: $0.02_{Hg} \text{ e mg/m}^3$
TRGS 900 (DE): $0.02_{Hg} \text{ E mg/m}^3$
E/e respirable
Short-term exposure factor: 8 (I), H, Sh
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
SUVA(CH) MAK value: 0.1 e mg/m^3
SUVA(CH) BAT value: Krea U/d 35 $\mu\text{g/L}$
TRGS 903 (DE): U/a 25 $\text{Kreatinin } \mu\text{g/g}$
B blood, U urine
TRGS 907 (DE): Sh
TSCA Inventory: listed
NIOSH: Hg Vapor: $\text{TWA}_{skin} 0.05$; other 0.1 mg/m^3
OSHA: TWA 0.1 mg/m^3

CAS No.: 7789-47-1

California Proposition 65 List: listed developmental

Chemical: *cellulose*

TRGS 900 (DE): Staub 4 E mg/m^3
E/e respirable
SUVA(CH) MAK value: 3 a ppm
Australia NICNAS: not listed
Japan CSCL/PRTR: not listed
Japan PDSCL: not listed
South Korea TCCA: not listed
TSCA Inventory: listed
NIOSH: not listed
OSHA: not listed

CAS No.: 9004-34-6

Canada CEPA 1999: DSL yes

Japan ISHL: not listed

California Proposition 65 List: not listed

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

10 mL As-1

Color: colored

Odor: odorless

Appearance: liquid

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30 g As-2

Color: colourless Odor: odorless Appearance: solid

30 g As-3 (Arsenic 10)

Color: slightly grey Odor: odorless Appearance: solid

100 test sticks Arsenic

Color: colourless Odor: odorless Appearance: solid

9.2 Other information

9.2.1 Safety relevant Basis Data

10 mL As-1

30 g As-2

pH: < 2
 Specific gravity: 2.12 sol. g/cm³
 Solubility in water: 0-17 %
 Melting point: instable 205 °C
 Vapour pressure (20°C): 0.0078 hPa
 Volatiles by volume: 0.031 mg/m³

30 g As-3 (Arsenic 10)

pH: 6-8

100 test sticks Arsenic

9.2.2 Relevant Properties of Substance Group

9.3 Additional Information

not necessary

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.

10 mL As-1

Chemical: *potassium permanganate* CAS No.: 7722-64-7
 LD50_{orl rat}: 750 mg/kg
 LC_{LoWorl hmn}: 100 mg/kg

30 g As-2

Chemical: *aminosulphonic acid (sulphamic acid)* CAS No.: 5329-14-6
 LD50_{orl rat}: 3160 mg/kg
 LD50_{orl gpg}: 1050 mg/kg
 LD50_{orl mus}: 1312 mg/kg

30 g As-3 (Arsenic 10)

Chemical: *zinc powder (stabilized)* CAS No.: 7440-66-6
 LD50_{orl rat}: >2000 mg/kg
 LC_{LoWinh hmn}: 124_{50min} mg/m³
 LC50_{ihl rat}: >5.4_h mg/m³



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100 test sticks Arsenic

Chemical: *mercury(II) bromide* CAS No.: 7789-47-1
 LD50_{orl rat}: 40 mg/kg
 LC_{LoWskn rbt}: 41 mg/kg
 LD50_{drm rat}: 100 mg/kg

Chemical: *cellulose* CAS No.: 9004-34-6
 LD50_{orl rat}: >5000 mg/kg
 LC50_{ihl rat}: >5800_{4h} mg/m³
 LD50_{drm rbt}: >2000 mg/kg

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

12 Ecological information

12.1 Toxicity

Following information is valid for pure substances.

10 mL As-1

Chemical: *potassium permanganate* CAS No.: 7722-64-7
 LC50_{fish/96h}: 3.6 mg/L
 WGK (DE): 3
 Storage class (VCI): 5.1 B

30 g As-2

Chemical: *aminosulphonic acid (sulphamic acid)* CAS No.: 5329-14-6
 WGK (DE): 1 WGK No.: 1266
 Storage class (VCI): 8 B

30 g As-3 (Arsenic 10)

Chemical: *zinc powder (stabilized)* CAS No.: 7440-66-6
 LC50_{fish/96h}: 2.01 mg/L
 EC50_{daphnia/48h}: 0.131 mg/L
 EC50_{pseudokirchneriella subcapitata/72h}: IC50: 0.713 mg/L
 WGK (DE): 2 WGK No.: 7325
 Storage class (VCI): 13

100 test sticks Arsenic

Chemical: *mercury(II) bromide* CAS No.: 7789-47-1
 Bio Toxicity: LC50 : 0.5_{HgCl2/48h} mg/m³
 WGK (DE): 3 WGK No.: 0398
 Storage class (VCI): 6.1 B

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

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

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

14 Transport Information

14.1 UN No.: **3316** 14.2 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: LQ 0 (acc. ADR 3.3.1/251: see LQ in Alternative Transport Labelling)

Air transport

PAX: 960 max. weight PAX: 10 KG

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CAO: 960 max. weight CAO: 10 KG
Maritime transport
 EmS: F-A, S-P Storage category: A

Alternative Transport Labelling follows:

Class 8 III, **excepted quantities** ($\leq 30 \text{ mL} / \Sigma \leq 1 \text{ L}$) = ADR/ IATA E1

14.1 UN No.: **3260** 14.2 Proper shipping name:
Corrosive solid, acidic, inorganic, n.o.s. (aminosulphonic acid (sulphamic acid) mixture)

14.3 Class: **8** 14.4 Packing group: **III**

Road transport

Classification code: C2
 Limited Quantity: LQ 24 Tunnel restriction code: E
 Excepted Quantity: E 1

Air transport

PAX: 860 max. weight PAX: 25 Kg
 CAO: 864 max. weight CAO: 100 Kg

Maritime transport

EmS: F-A, S-B Storage category: A

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**.

10 mL As-1

Directive 1999/45/EC

Symbols:

-

-

CLP Directive 1272/2008/EC

GHS pictograms:

do not need labelling as hazardous

Signal word: WARNING

30 g As-2

Directive 1999/45/EC

Symbols:



Xi

R 36/38

Irritating to eyes and skin.

S 26-28-61

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In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water. Avoid release to the environment. Refer to special instructions/Safety data sheets.

CLP Directive 1272/2008/EC

GHS pictograms:



GHS07

Signal word: WARNING

30 g As-3 (Arsenic 10)

Directive 1999/45/EC

Symbols:

-
-

S 60-61

This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/Safety data sheets.

CLP Directive 1272/2008/EC

GHS pictograms:

do not need labelling as hazardous

Signal word: WARNING

100 test sticks Arsenic

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

R36/38	Irritating to eyes and skin.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

16.1.2 List of relevant H phrases

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

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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 July 2012

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

KÜHN, BIRETT Merkbblätter 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>