

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 03.02.2011

Version 13.0

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Catalogue No.	104619
Product name	Hydroxylammonium chloride for analysis ($\leq 0.000001\%$ Hg) ACS,ISO
REACH Registration Number	A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Identified uses	Reagent for analysis For additional information on uses please refer to the Merck Chemicals portal (www.merck-chemicals.com).
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1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department	EQ-RS * e-mail: prodsafe@merck.de

1.4 Emergency telephone number

Please contact the regional Merck representation in your country.

2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4, Oral, H302
 Acute toxicity, Category 4, Dermal, H312
 Carcinogenicity, Category 2, H351
 Skin irritation, Category 2, H315
 Eye irritation, Category 2, H319
 Skin sensitization, Category 1, H317
 Specific target organ toxicity - repeated exposure, Category 2, Oral, H373
 Acute aquatic toxicity, Category 1, H400
 Corrosive to metals, Category 1, H290

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification (67/548/EEC or 1999/45/EC)

E	Explosive	R2
Xn	Harmful	R21/22 - 48/22
Xi	Irritant	R36/38
		R43
Carc.Cat.3	Carcinogenic Category 3	R40
N	Dangerous for the environment	R50

For the full text of the R-phrases mentioned in this Section, see Section 16.

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2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms



Signal word

Warning

Hazard statements

H302 + H312 Harmful if swallowed or in contact with skin.
H351 Suspected of causing cancer.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H290 May be corrosive to metals.

Precautionary statements

P273 Avoid release to the environment.
P281 Use personal protective equipment as required.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Reduced labelling (≤ 125 ml)

Hazard pictograms



Signal word

Warning

Hazard statements

H351 Suspected of causing cancer.
H317 May cause an allergic skin reaction.

Precautionary statements

P281 Use personal protective equipment as required.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Index-No. 612-123-00-2

Labelling (67/548/EEC or 1999/45/EC)

Symbol(s)	E	Explosive
	Xn	Harmful
	N	Dangerous for the environment

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R-phrases(s)	2-21/22-36/38-40-43-48/22-50	Risk of explosion by shock, friction, fire or other sources of ignition. Harmful in contact with skin and if swallowed. Irritating to eyes and skin. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact. Harmful: danger of serious damage to health by prolonged exposure if swallowed. Very toxic to aquatic organisms.
S-phrases(s)	36/37-61	Wear suitable protective clothing and gloves. Avoid release to the environment. Refer to special instructions/ Safety data sheets.
EC-No.	226-798-2	EC Label
Reduced labelling (≤ 125 ml)		
Symbol(s)	E Xn N	Explosive Harmful Dangerous for the environment
R-phrases(s)	2-21/22-40-43-48/22	Risk of explosion by shock, friction, fire or other sources of ignition. Harmful in contact with skin and if swallowed. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact. Harmful: danger of serious damage to health by prolonged exposure if swallowed.
S-phrases(s)	36/37	Wear suitable protective clothing and gloves.

2.3 Other hazards

None known.

3. Composition/information on ingredients

Formula	$\text{NH}_2\text{OH} \cdot \text{HCl}$	ClH_4NO (Hill)
CAS-No.	5470-11-1	
Index-No.	612-123-00-2	
EC-No.	226-798-2	
Molar mass	69,49 g/mol	

4. First aid measures

4.1 Description of first aid measures

After inhalation: fresh air. Consult a physician.

After skin contact: wash off with plenty of water. Remove contaminated clothing. Consult a physician.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

irritant effects, Allergic reactions, Dermatitis, Cyanosis

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water, Carbon dioxide (CO_2), Foam, Dry powder

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Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Combustible material

In the event of decomposition: danger of explosion!

Risk of dust explosion.

Development of hazardous combustion gases or vapours possible in the event of fire.

Fire may cause evolution of:

Hydrogen chloride gas, nitrogen oxides, nitrous gases

5.3 Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Avoid inhalation of dusts. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

6.2 Environmental precautions

Do not empty into drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7.2 and 10.5).

Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

Indications about waste treatment see section 13.

7. Handling and storage

7.1 Precautions for safe handling

Observe label precautions.

Work under hood. Do not inhale substance.

7.2 Conditions for safe storage, including any incompatibilities

Tightly closed. Dry.

Storage temperature: no restrictions.

7.3 Specific end uses

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

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8. Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment

protective clothing

Respiratory protection

required when dusts are generated.

Recommended Filter type: Filter P 3 (acc. to DIN 3181) for solid and liquid particles of toxic and very toxic substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls

Do not empty into drains.

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9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	solid
Colour	colourless
Odour	slight chlorine
Odour Threshold	No information available.
pH	2,5 - 3,5 at 50 g/l 20 °C
Melting point	159 °C
Boiling point	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapour pressure	No information available.
Relative vapour density	No information available.
Relative density	1,67 g/cm ³ at 20 °C
Water solubility	830 g/l at 20 °C
Partition coefficient: n-octanol/water	log Pow: -2,66 Method: (calculated) Bioaccumulation is not expected.
Autoignition temperature	No information available.
Decomposition temperature	> 150 °C explosion decomposition
Viscosity, dynamic	No information available.
Explosive properties	No information available.
Oxidizing properties	No information available.

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9.2 Other data

Bulk density	ca.900 kg/m ³
Corrosion	May be corrosive to metals.

10. Stability and reactivity

10.1 Reactivity

Risk of dust explosion.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

alkaline substances

Formed could be:

hydroxylamine

Risk of explosion with:

fire-promoting substances, Oxidizing agents

10.4 Conditions to avoid

Heating (decomposition).

10.5 Incompatible materials

Aluminium, Copper, Zinc, Tin

10.6 Hazardous decomposition products

in the event of fire: See chapter 5.

11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

LD50 rat

Dose: 141 mg/kg

(RTECS)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

absorption

Acute inhalation toxicity

Symptoms: mucosal irritations

Acute dermal toxicity

absorption

Skin irritation

Dermatitis

Causes skin irritation.

Eye irritation

Causes serious eye irritation.

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Sensitisation

Human experience

May cause sensitisation.

May cause an allergic skin reaction.

CMR effects

Carcinogenicity:

Suspected of causing cancer.

Specific target organ toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

Based on available data the classification criteria are not met.

11.2 Further information

Further information

After absorption:

drop in blood pressure, Cyanosis, Risk of methaemoglobin formation.

Further data:

Handle in accordance with good industrial hygiene and safety practice.

12. Ecological information

12.1 Toxicity

No information available.

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: -2,66

Method: (calculated)

Bioaccumulation is not expected.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

Additional ecological information

Do not allow to run into surface waters, wastewater, or soil.

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13. Disposal considerations

Waste treatment methods

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

14. Transport information

ADR/RID

UN 2923 CORROSIVE SOLID, TOXIC, N.O.S. (HYDROXYLAMMONIUM CHLORIDE), 8 (6.1), III

IATA

UN 2923 CORROSIVE SOLID, TOXIC, N.O.S. (HYDROXYLAMMONIUM CHLORIDE), 8 (6.1), III

IMDG

UN 2923 CORROSIVE SOLID, TOXIC, N.O.S. (HYDROXYLAMMONIUM CHLORIDE), 8 (6.1), III

EmS F-A S-B

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Major Accident Hazard	96/82/EC
Legislation	Explosive
	5
	Quantity 1: 10 t
	Quantity 2: 50 t
	96/82/EC
	Dangerous for the environment
	9a
	Quantity 1: 100 t
	Quantity 2: 200 t

Occupational restrictions	Take note of Dir 94/33/EC on the protection of young people at work. Take note of Dir 92/85/EEC on the safety and health at work of pregnant workers.
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National legislation

Storage class	4.1A Flammable solids
German explosives Act	applies, C, III.

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

16. Other information

Full text of H-Statements referred to under sections 2 and 3.

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.

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H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.

Full text of R-phrases referred to under sections 2 and 3

R 2	Risk of explosion by shock, friction, fire or other sources of ignition.
R21/22	Harmful in contact with skin and if swallowed.
R36/38	Irritating to eyes and skin.
R40	Limited evidence of a carcinogenic effect.
R43	May cause sensitization by skin contact.
R48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed.
R50	Very toxic to aquatic organisms.

Training advice

Provide adequate information, instruction and training for operators.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Regional representation

This information is given on the authorised Safety Data Sheet for your country.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.