

SAFETY DATA SHEET

GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : Hydroxylammonium chloride GR for analysis
ACS,ISO,Reag. Ph Eur

Product Number : 1.04616
Catalogue No. : 104616
Brand : Millipore
Index-No. : 612-123-00-2
REACH No. : 01-2120766309-45-XXXX
CAS-No. : 5470-11-1

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

Identified uses : Reagent for analysis

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Chemie GmbH
Eschenstrasse 5
D-82024 TAUFKIRCHEN

Telephone : +49 (0)89 6513-1130
Fax : +49 (0)89 6513-1161
E-mail address : technischerservice@merckgroup.com

1.4 Emergency telephone number

Emergency Phone # : 0800 181 7059 (CHEMTREC Deutschland)
+49 (0)696 43508409 (CHEMTREC
weltweit)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Corrosive to metals, Category 1 H290: May be corrosive to metals.

Acute toxicity, Category 4 H302: Harmful if swallowed.

Acute toxicity, Category 4 H312: Harmful in contact with skin.



Skin irritation, Category 2	H315: Causes skin irritation.
Eye irritation, Category 2	H319: Causes serious eye irritation.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Carcinogenicity, Category 2	H351: Suspected of causing cancer.
Specific target organ toxicity - repeated exposure, Category 2, spleen	H373: May cause damage to organs through prolonged or repeated exposure.
Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Warning

Hazard statements :

- H290 May be corrosive to metals.
- H302 + H312 Harmful if swallowed or in contact with skin.
- 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 (spleen) through prolonged or repeated exposure.
- H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

- P260 Do not breathe dust.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

- P301 + P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
- P302 + P352 + P312 IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/ doctor if you feel unwell.



P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Reduced Labelling (<= 125 ml)

Hazard pictograms :



Signal word

Warning

Hazard Statements

H317

May cause an allergic skin reaction.

H351

Suspected of causing cancer.

Precautionary Statements

P280

Wear protective gloves/ protective clothing/ eye protection/ face protection.

P308 + P313

IF exposed or concerned: Get medical advice/ attention.

Supplemental Hazard Statements

none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances

Index-No. : 612-123-00-2

EC-No. : 226-798-2

Components

Chemical name	CAS-No. EC-No.	Concentration (% w/w)	M-Factor, SCL, ATE
Hydroxylammonium chloride	5470-11-1 226-798-2	>= 90 - <= 100	M-Factor (Acute aquatic toxicity): 1Acute toxicity



			estimate Acute oral toxicity: 642 mg/kg Acute dermal toxicity: 1.100,1 mg/kg
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SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Show this safety data sheet to the doctor in attendance.
- If inhaled : After inhalation: fresh air. Call in physician.
- In case of skin contact : In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.
- In case of eye contact : After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.
- If swallowed : 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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

- Specific hazards during fire fighting : Not combustible.
- Hazardous combustion : Ambient fire may liberate hazardous vapours.
Nitrogen oxides (NOx)



products

Hydrogen chloride gas

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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

For personal protection see section 8.

6.2 Environmental precautions

- Environmental precautions : Do not let product enter drains.

6.3 Methods and material for containment and cleaning up

- Methods for cleaning up : Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Advice on safe handling : Work under hood. Do not inhale substance/mixture.
- Hygiene measures : Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage : No metal containers.



areas and containers

Further information on storage conditions : Tightly closed and away from sources of ignition and heat. Observe national regulations.

Storage class (TRGS 510) : 4.1A, Other explosive hazardous materials

Recommended storage temperature : Recommended storage temperature see product label.

7.3 Specific end use(s)

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

8.2 Exposure controls

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Safety glasses

Hand protection

Material : Nitrile rubber
Break through time : 480 min
Glove thickness : 0,11 mm
Protective index : Full contact
Manufacturer : KCL 741 Dermatril® L

Material : Nitrile rubber
Break through time : 480 min
Glove thickness : 0,11 mm
Protective index : Splash contact
Manufacturer : KCL 741 Dermatril® L

Remarks : 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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin and body protection : protective clothing

Respiratory protection : required when dusts are generated.



Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter : Filter type P3
type:

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

Advice : Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: solid (20 °C, 1.013 hPa)
Form	: crystalline
Color	: colourless
Odor	: slight chlorine
Melting point/ range	: 155 - 157 °C Method: lit.
Boiling point	: No data available
Flammability	: The product is not flammable.
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Flash point	: Not applicable
Autoignition temperature	: No data available
Decomposition temperature	: > 150 °C Heating may cause an explosion.
pH	: 2,5 - 3,5 (20 °C)



Concentration: 50 g/l

Viscosity, dynamic	: No data available
Viscosity, kinematic	: No data available
Flow time	: No data available
Solubility(ies)	
Water solubility	: ca. 470 g/l (20 °C) pH: 1 Method: OECD Test Guideline 105
Partition coefficient: n-octanol/water	: Not applicable for inorganic substances
Vapor pressure	: 0,054 Pa (50 °C) Method: OECD Test Guideline 104
Relative density	: No data available
Density	: 1,67 g/mL (25 °C)
Bulk density	: ca. 900 kg/m ³
Relative vapour density	: No data available

9.2 Other information

Explosives	: Method: Explosive properties Not classified as explosive.
Oxidizing properties	: Reference substance: Barium nitrate Method: Regulation (EC) No. 440/2008, Annex, A.17 GLP: yes none
Burning rate	: No data available
Metal corrosion rate	: May be corrosive to metals.
Evaporation rate	: No data available
Surface tension	: ca. 71,8 mN/m, 1,025 g/l, 20 °C, OECD Test Guideline 115



Molecular weight : 69,49 g/mol

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

Hazardous reactions : Violent reactions possible with:

alkaline substances

Possible formation of:

hydroxylamine

Risk of explosion with:

fire-promoting substances

Oxidizing agents

10.4 Conditions to avoid

Conditions to avoid : May be unstable at temperatures above:
75° C

no information available

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - 642 mg/kg
(OECD Test Guideline 401)

Acute toxicity estimate Oral - 642 mg/kg
(ATE value derived from LD50/LC50 value)

Inhalation: No data available

Acute toxicity estimate Dermal - 1.100,1 mg/kg
(Expert judgement)

Remarks: (Regulation (EC) No 1272/2008, Annex VI)

Skin corrosion/irritation

Skin - In vitro study

Result: Irritating to skin. - 42 min

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The life science business of Merck operates as MilliporeSigma in the US and Canada



(OECD Test Guideline 439)

Serious eye damage/eye irritation

Eyes - In vitro study

Result: Eye irritation - 6 h

Remarks: (ECHA)

Respiratory or skin sensitization

Maximisation Test - Guinea pig

Result: positive

(OECD Test Guideline 406)

Germ cell mutagenicity

Test Type: Ames test

Test system: *S. typhimurium*

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: (ECHA)

Test Type: Rat

Test system: Embryo

Remarks: Morphological transformation.

Test Type: Hamster

Test system: Lungs

Remarks: Sister chromatid exchange

Test Type: Mutagenicity (mammal cell test): micronucleus.

Species: Mouse

Cell type: Red blood cells (erythrocytes)

Application Route: Oral

Method: OECD Test Guideline 474

Result: negative

Carcinogenicity

Suspected of causing cancer.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

- spleen

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Aspiration hazard

No data available



11.2 Additional Information

Endocrine disrupting properties

Product:

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity

Components:

Hydroxylammonium chloride:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,78 mg/l
End point: mortality
Exposure time: 96 h
Test Type: semi-static test
Analytical monitoring: yes
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1,1 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: semi-static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata): 0,21 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

EC10 (Raphidocelis subcapitata (freshwater green alga)): 0,075 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes



M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC10 (activated sludge): 1,7 mg/l
Exposure time: 3 h
Test Type: static test
Method: OECD Test Guideline 209
GLP: yes

Ecotoxicology Assessment

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Components:

Hydroxylammonium chloride:

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Components:

Hydroxylammonium chloride:

Partition coefficient: n-octanol/water : Remarks: Not applicable for inorganic substances

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available



SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

SECTION 14: Transport information

14.1 UN number or ID number

ADR : UN 3260
IMDG : UN 3260
IATA : UN 3260

14.2 UN proper shipping name

ADR : CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.
(Hydroxylammonium chloride)
IMDG : CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.
(Hydroxylammonium chloride)
IATA : Corrosive solid, acidic, inorganic, n.o.s.
(Hydroxylammonium chloride)

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADR	: 8	
IMDG	: 8	
IATA	: 8	

14.4 Packing group

ADR
Packing group : III
Classification Code : C2
Hazard Identification Number : 80
Labels : 8
Tunnel restriction code : (E)
IMDG
Packing group : III
Labels : 8
EmS Code : F-A, S-B

IATA (Cargo)



Packing instruction (cargo : 864
aircraft)
Packing instruction (LQ) : Y845
Packing group : III
Labels : Class 8 - Corrosive substances

IATA_P (Passenger)

Packing instruction : 860
(passenger aircraft)
Packing instruction (LQ) : Y845
Packing group : III
Labels : Class 8 - Corrosive substances

14.5 Environmental hazards

ADR

Environmentally : yes
hazardous

IMDG

Marine pollutant : yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing : Conditions of restriction for the
on the market and use of certain dangerous following entries should be
substances, mixtures and articles (Annex XVII) considered:
Number on list 75
If you intend to use this product
as tattoo ink, please contact
your vendor.

REACH - Candidate List of Substances of Very : Not applicable
High Concern for Authorisation (Article 59).

Regulation (EU) No 2024/590 on substances that : Not applicable
deplete the ozone layer

Regulation (EU) 2019/1021 on persistent organic : Not applicable
pollutants (recast)

REACH - List of substances subject to : Not applicable
authorisation (Annex XIV)



Seveso III: Directive 2012/18/EU of the E1 ENVIRONMENTAL HAZARDS
European Parliament and of the Council
on the control of major-accident hazards
involving dangerous substances.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Relevant changes since previous version

7. Handling and storage

Full text of H-Statements

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Carc.	: Carcinogenicity
Eye Irrit.	: Eye irritation
Met. Corr.	: Corrosive to metals
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
STOT RE	: Specific target organ toxicity - repeated exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and



Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information : The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.
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REG_EU / EN

