



SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 18.02.2013

Version 8.2

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

1.1 Product identifier

Catalogue No.	104617
Product name	Hydroxylammonium sulfate GR for analysis
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@merckgroup.com

1.4 Emergency telephone number	Please contact the regional company representation in your country.
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SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

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

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
Carc.Cat.3	Carcinogenic Category 3	R40
Xn	Harmful	R21/22 - 48/22
Xi	Irritant	R36/38
		R43
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

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

Precautionary statements

Prevention

P281 Use personal protective equipment as required.
P273 Avoid release to the environment.

Response

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

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.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

Index-No. 612-123-00-2

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

<i>Symbol(s)</i>	 E  Xn  N	Explosive Harmful Dangerous for the environment
<i>R-phrases(s)</i>	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.
<i>S-phrases(s)</i>	36/37-61	Wear suitable protective clothing and gloves. Avoid release to the environment. Refer to special instructions/ Safety data sheets.

EC-No. 233-118-8 EC Label

Reduced labelling (≤125 ml)

<i>Symbol(s)</i>	 E  Xn  N	Explosive Harmful Dangerous for the environment
<i>R-phrases(s)</i>	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.
<i>S-phrases(s)</i>	36/37	Wear suitable protective clothing and gloves.

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

3.1 Substance

Formula	(HONH ₃) ₂ SO ₄	H ₈ N ₂ O ₆ S (Hill)
CAS-No.	10039-54-0	
Index-No.	612-123-00-2	
EC-No.	233-118-8	
Molar mass	164,14 g/mol	

Hazardous components (REGULATION (EC) No 1272/2008)

Chemical Name (Concentration)

CAS-No.	Registration number	Classification
<i>bis(hydroxylammonium)sulphate (≤ 100 %)</i>		
10039-54-0	*)	Corrosive to metals, Category 1, H290 Carcinogenicity, Category 2, H351 Acute toxicity, Category 4, H312 Acute toxicity, Category 4, H302 Specific target organ toxicity - repeated exposure, Category 2, H373 Eye irritation, Category 2, H319 Skin irritation, Category 2, H315 Skin sensitization, Category 1, H317 Acute aquatic toxicity, Category 1, H400 M-Factor: 1

*) 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.

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

Hazardous components (1999/45/EC)

Chemical Name (Concentration)

CAS-No. Classification

bis(hydroxylammonium)sulphate (<= 100 %)

10039-54-0 E, Explosive; R2
Carc.Cat.3; R40
Xn, Harmful; R21/22-48/22
Xi, Irritant; R36/38
R43
N, Dangerous for the environment; R50
M-Factor: 1

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

3.2 Mixture

not applicable

SECTION 4. First aid measures

4.1 Description of first aid measures

After inhalation: fresh air. Call in 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. 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, Cough, depressed respiration, Shortness of breath, Stomach/intestinal disorders, muscle twitching, drowsiness

The following applies to ammonium salts in general: after swallowing: local irritation symptoms, nausea, vomiting, diarrhoea. Systemic effect: after the uptake of very large quantities: drop in blood pressure, collapse, CNS disorders, spasms, narcotic conditions, respiratory paralysis, haemolysis.

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water, Carbon dioxide (CO₂), Foam, Dry powder

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.

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.

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Fire may cause evolution of:
Sulphur oxides, nitrogen oxides

5.3 Advice for firefighters

Special protective equipment for firefighters

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

Advice for non-emergency personnel: Avoid substance contact. Avoid generation of dusts; do not inhale 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. Risk of explosion.

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 and 10).

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.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture.

Observe label precautions.

Hygiene measures

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

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed and away from sources of ignition and heat. Observe national regulations. Dry.

Storage temperature: no restrictions.

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

8.2 Exposure controls

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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.

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 2 (acc. to DIN 3181) for solid and liquid particles of harmful 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.

Risk of explosion.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form solid

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Colour	white
Odour	odourless
Odour Threshold	not applicable
pH	3,6 at 10 g/l 20 °C
Melting point	170 °C (decomposition)
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 vapor density	No information available.
Relative density	1,88 g/cm ³ at 20 °C
Water solubility	587 g/l at 20 °C
Partition coefficient: n-octanol/water	log Pow: -3,6 (25 °C) (IUCLID) Bioaccumulation is not expected.
Auto-ignition temperature	No information available.
Decomposition temperature	> 120 °C
Viscosity, dynamic	No information available.
Explosive properties	No information available.
Oxidizing properties	No information available.

9.2 Other data

Bulk density	1.100 kg/m ³
Corrosion	May be corrosive to metals.

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SECTION 10. Stability and reactivity

10.1 Reactivity

Explosive
Mechanical sensitivity (friction)

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

Violent reactions possible with:

Exothermic reaction with:

nitrites, nitrates, Powdered metals

Oxidizing agents, Aldehydes, Ketones

A risk of explosion and/or of toxic gas formation exists with the following substances:

bases, in the presence of:

Heat.

10.4 Conditions to avoid

Avoid shock and friction.
Strong heating (decomposition).

10.5 Incompatible materials

no information 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 oral toxicity

LD50 rat: 842 mg/kg (RTECS)

absorption

Symptoms: muscle twitching, Stomach/intestinal disorders

Acute inhalation toxicity

Symptoms: mucosal irritations, Cough, Shortness of breath

Acute dermal toxicity

LD50 rabbit: 1.500 - 2.000 mg/kg (IUCLID)

absorption

Skin irritation

Dermatitis

Causes skin irritation.

Eye irritation

Causes serious eye irritation.

Sensitisation

May cause an allergic skin reaction.

Germ cell mutagenicity

This information is not available.

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Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

CMR effects

Carcinogenicity:

Suspected of causing cancer.

Specific target organ toxicity - single exposure

This information is not available.

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

This information is not available.

11.2 Further information

After absorption:

depressed respiration, drowsiness

Risk of methaemoglobin formation.

The following applies to ammonium salts in general: after swallowing: local irritation symptoms, nausea, vomiting, diarrhoea. Systemic effect: after the uptake of very large quantities: drop in blood pressure, collapse, CNS disorders, spasms, narcotic conditions, respiratory paralysis, haemolysis.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

12.1 Toxicity

Toxicity to fish

LC50 Pimephales promelas (fathead minnow): 1 - 10 mg/l; 96 h (External MSDS)

Toxicity to daphnia and other aquatic invertebrates

EC50 Daphnia magna (Water flea): 1,62 mg/l; 48 h (External MSDS)

Toxicity to algae

IC50 Desmodesmus subspicatus (green algae): 0,86 mg/l; 96 h (External MSDS)

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: -3,6 (25 °C)

(IUCLID) 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

Discharge into the environment must be avoided.

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SECTION 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.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 UN number	UN 2865
14.2 Proper shipping name	HYDROXYLAMINE SULPHATE
14.3 Class	8
14.4 Packing group	III
14.5 Environmentally hazardous	yes
14.6 Special precautions for user	yes
Tunnel restriction code	E

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 UN number	UN 2865
14.2 Proper shipping name	HYDROXYLAMINE SULPHATE
14.3 Class	8
14.4 Packing group	III
14.5 Environmentally hazardous	yes
14.6 Special precautions for user	no

Sea transport (IMDG)

14.1 UN number	UN 2865
14.2 Proper shipping name	HYDROXYLAMINE SULPHATE
14.3 Class	8
14.4 Packing group	III
14.5 Environmentally hazardous	yes
14.6 Special precautions for user	yes
EmS	F-A S-B

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant

SECTION 15. Regulatory information

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

EU regulations

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Major Accident Hazard Legislation	96/82/EC 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. Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.
<i>National legislation</i>	
Storage class	4.1A
German explosives Act	applies, C, III.

15.2 Chemical Safety Assessment

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

SECTION 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.
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.

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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.