

Safety Data Sheet

Hydroxylammonium sulphate

Revision date : 2014/07/31
Version: 2.0

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1. Identification

Product identifier used on the label

Hydroxylammonium sulphate

Recommended use of the chemical and restriction on use

* The "Recommended use" identified for this product is provided solely to comply with a US Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:
BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Molecular formula: $(\text{NH}_3\text{OH})(2)\text{SO}_4$
Chemical family: inorganic salts
Synonyms: Hydroxylammonium sulphate

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Met. Corr.	1	Substance or mixture corrosive to metals
Acute Tox.	4 (oral)	Acute toxicity
Acute Tox.	4 (dermal)	Acute toxicity
Skin Corr./Irrit.	2	Skin corrosion/irritation
Eye Dam./Irrit.	2B	Serious eye damage/eye irritation
Skin Sens.	1	Skin sensitization
Carc.	2	Carcinogenicity
STOT RE	2	Specific target organ toxicity — repeated

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Aquatic Acute	1	exposure
Aquatic Chronic	3	Hazardous to the aquatic environment - acute Hazardous to the aquatic environment - chronic

Label elements

Pictogram:



Signal Word:
Warning

Hazard Statement:

H290	May be corrosive to metals.
H320	Causes eye irritation.
H315	Causes skin irritation.
H312	Harmful in contact with skin.
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H373	May cause damage to organs (Blood) through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.
H400	Very toxic to aquatic life.

Precautionary Statements (Prevention):

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P273	Avoid release to the environment.
P260	Do not breathe dust/gas/mist/vapours.
P202	Do not handle until all safety precautions have been read and understood.
P272	Contaminated work clothing should not be allowed out of the workplace.
P270	Do not eat, drink or smoke when using this product.
P264	Wash with plenty of water and soap thoroughly after handling.
P234	Keep only in original container.

Precautionary Statements (Response):

P308 + P311	IF exposed or concerned: Call a POISON CENTER or doctor/physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P303 + P362	IF ON SKIN (on hair): Wash with plenty of soap and water.
P333 + P311	If skin irritation or rash occurs: Call a POISON CENTER or doctor/physician.
P361	Remove/Take off immediately all contaminated clothing.
P301 + P330	IF SWALLOWED: rinse mouth.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P391	Collect spillage.
P337 + P311	If eye irritation persists: Call a POISON CENTER or doctor/physician.
P390	Absorb spillage to prevent material damage.

Precautionary Statements (Storage):

P405	Store locked up.
P406	Store in corrosive resistant/... container with a resistant inner liner.

Precautionary Statements (Disposal):

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P501

Dispose of contents/container to hazardous or special waste collection point.

Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Emergency overview

WARNING:

Harmful by inhalation, in contact with skin and if swallowed.

Irritating to eyes, respiratory system and skin.

May cause sensitization by skin contact.

INGESTION MAY CAUSE GASTRIC DISTURBANCES.

Risk of explosion if heated under confinement.

SUSPECT CANCER HAZARD.

Use with local exhaust ventilation.

Wear a NIOSH-certified (or equivalent) particulate respirator.

Wear NIOSH-certified chemical goggles.

Wear protective clothing.

Eye wash fountains and safety showers must be easily accessible.

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
10039-54-0	>= 99.0 %	Hydroxylammonium sulphate
10039-54-0	>= 75.0 - <= 100.0 %	Hydroxylammonium sulphate

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
7783-20-2	<= 1.0 %	Ammonium sulphate
10039-54-0	> 99.0 %	Hydroxylammonium sulphate

4. First-Aid Measures

Description of first aid measures

General advice:

Contact the local Poison Control Center or call BASF Emergency Response at 1-800-832-HELP (4357). Remove contaminated clothing.

If inhaled:

Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Immediate medical attention required.

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If on skin:

Wash affected areas thoroughly with soap and water. Immediate medical attention required. Wash affected areas with water while removing contaminated clothing.

If in eyes:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Immediate medical attention required.

If swallowed:

Rinse mouth and then drink plenty of water. Do not induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

Most important symptoms and effects, both acute and delayed

Symptoms: Eye irritation, nausea, skin corrosion, irritation of the mucous membranes, Further symptoms are possible

Indication of any immediate medical attention and special treatment needed

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
water spray, foam, carbon dioxide, dry powder

Additional information:
Water stops chemical decomposition of substance/product.

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
Sulphur dioxide, sulphur trioxide, nitrous gases
The substances/groups of substances mentioned can be released if the product is involved in a fire.

Advice for fire-fighters

Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

Product itself is non-combustible; fire extinguishing method of surrounding areas must be considered. Keep containers cool by spraying with water if exposed to fire. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear appropriate respiratory protection. Use personal protective clothing. Ensure adequate ventilation.

Environmental precautions

This product is not regulated by RCRA. This product is not regulated by CERCLA ('Superfund').

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Methods and material for containment and cleaning up

Spills should be contained, solidified, and placed in suitable containers for disposal.

7. Handling and Storage

Precautions for safe handling

Avoid dust formation. Breathing must be protected when large quantities are decanted without local exhaust ventilation.

Protection against fire and explosion:

See MSDS section 5 - Fire fighting measures. The substance/product is non-combustible.

Conditions for safe storage, including any incompatibilities

Segregate from alkalies and alkalizing substances. Segregate from oxidants. Segregate from metals. Segregate from nitrites.

Do not store with: nitrate

Further information on storage conditions: Store in unopened original containers in a cool and dry place.

8. Exposure Controls/Personal Protection

Advice on system design:

Provide local exhaust ventilation to control dust.

Personal protective equipment

Respiratory protection:

Wear a NIOSH-certified (or equivalent) particulate respirator. Do not exceed the maximum use concentration for the respirator facepiece/cartridge combination.

Hand protection:

Chemical resistant protective gloves, Suitable materials, polyvinylchloride (PVC) - 0.8 mm, Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

Eye protection:

Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:

chemical protection overall (f.e. according to EN 13982) if dust is formed.

General safety and hygiene measures:

Eye wash fountains and safety showers must be easily accessible. Avoid inhalation of dust. Wear protective clothing as necessary to prevent contact. Employees should shower at the end of the shift. Wash soiled clothing immediately.

9. Physical and Chemical Properties

Form: crystalline
Odour: odourless

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Colour:	white	
pH value:	3.6	(10 g/l, 20 °C)
Flash point:		No data available.
Flammability:	not flammable	(UN Test N.1 (ready combustible solids))
Lower explosion limit:		For solids not relevant for classification and labelling.
Upper explosion limit:		For solids not relevant for classification and labelling.
Autoignition:		No data available.
Vapour pressure:		negligible
Density:	1.88 g/cm3	(20 °C) Literature data.
Relative density:	approx. 1.88	
Bulk density:	1,100 kg/m3	
Partitioning coefficient n-octanol/water (log Pow):	-3.6	(25 °C) (OECD Guideline 107)
Thermal decomposition:	> 120 °C	
	Decomposition may extend over the whole product quantity.	
	Violent decomposition, especially when heated under confinement.	
Viscosity, dynamic:		not applicable
Solubility in water:	587 g/l	(20 °C)
Solubility (quantitative):	370 g/kg	(20 °C)
Evaporation rate:		No data available.

10. Stability and Reactivity

Reactivity

Corrosion to metals:
Corrosive effect on metals.

Oxidizing properties:
not fire-propagating (Directive 84/449/EEC, A.17)

Minimum ignition energy:
> 1 kJ, 1 bar, 22 °C (VDI 2263, sheet 1, 2.1.2)
The product is not capable of a dust explosion.

Chemical stability

Possibility of hazardous reactions

The product is chemically stable.
Substance/product is a strong oxidizing agent and attacks organic substances.

Conditions to avoid

Temperature: > 80 degrees Celsius

Incompatible materials

Alkalines, alkalies, nitrites, oxidizing agents, nitrates, metal salts, heavy metal salts

Hazardous decomposition products

Decomposition products:
Hazardous decomposition products: nitrogen oxides, sulfur oxides

Thermal decomposition:

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> 120 °C

Decomposition may extend over the whole product quantity. Violent decomposition, especially when heated under confinement.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Of moderate toxicity after single ingestion. There is a risk of damage to the blood (methemoglobinemia) after a single uptake of large quantities. Of moderate toxicity after short-term skin contact.

Oral

Type of value: LD50

Species: rat

Value: 642 mg/kg (BASF-Test)

Dermal

Type of value: LD50

Species: rabbit

Value: 1,500 - 2,000 mg/kg (OECD Guideline 402)

Assessment other acute effects

Assessment of STOT single:

A single exposure may have relevant toxic effects on organs named in section 2 of this safety data sheet.

Irritation / corrosion

Assessment of irritating effects: Skin contact causes irritation. Eye contact causes irritation.

Skin

Species: rabbit

Result: Irritant.

Method: BASF-Test

Eye

Species: rabbit

Result: Irritant.

Method: BASF-Test

Sensitization

Assessment of sensitization: Caused skin sensitization in animal studies.

Guinea pig maximization test

Species: guinea pig

Result: sensitizing

Method: OECD Guideline 406

Aspiration Hazard

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No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: The substance may cause damage to the hematological system even after repeated ingestion of low doses, as shown in animal studies.

Genetic toxicity

Assessment of mutagenicity: Most of the results from the available studies show no evidence of a mutagenic effect.

Carcinogenicity

Assessment of carcinogenicity: Indication of possible carcinogenic effect in animal tests.

Reproductive toxicity

Assessment of reproduction toxicity: Repeated oral uptake of the substance did not cause damage to the reproductive organs.

Teratogenicity

Assessment of teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies.

Symptoms of Exposure

Eye irritation, nausea, skin corrosion, irritation of the mucous membranes, Further symptoms are possible

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

Very toxic (acute effect) to aquatic organisms. Depending on local conditions and existing concentrations, disturbances in the biodegradation process of activated sludge are possible.

Toxicity to fish

LC50 (96 h) 7.2 mg/l, Pimephales promelas (Fish test acute, static)

Literature data. Nominal concentration.

Aquatic invertebrates

EC50 (48 h) 1.62 mg/l, Daphnia magna (Directive 84/449/EEC, C.2, static)

Nominal concentration.

Aquatic plants

EC50 (72 h) 0.72 mg/l (growth rate), Scenedesmus subspicatus (OECD Guideline 201, static)

Nominal concentration.

Chronic toxicity to fish

Study scientifically not justified.

Chronic toxicity to aquatic invertebrates

No observed effect concentration (21 d) > 0.616 mg/l, Daphnia magna (OECD Guideline 211, semistatic)

The statement of the toxic effect relates to the analytically determined concentration.

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Assessment of terrestrial toxicity
Study scientifically not justified.

Microorganisms/Effect on activated sludge

Toxicity to microorganisms
OECD Guideline 209 aquatic
activated sludge, domestic/EC10 (3 h): 0.7 mg/l
Nominal concentration.

Persistence and degradability

Assessment biodegradation and elimination (H₂O)
Not applicable for inorganic substances.

Assessment of stability in water
According to structural properties, hydrolysis is not expected/probable.

Bioaccumulative potential

Assessment bioaccumulation potential
Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Additional information

Other ecotoxicological advice:
Very toxic (acute effect) to aquatic organisms. Do not release untreated into natural waters. Due to the pH-value of the product, neutralization is generally required before discharging sewage into treatment plants.

13. Disposal considerations

Waste disposal of substance:
Dispose of in a licensed facility. Do not discharge into waterways or sewer systems without proper authorization.

Container disposal:
Dispose of in a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

14. Transport Information

Land transport

USDOT

Hazard class:	8
Packing group:	III
ID number:	UN 2865
Hazard label:	8, EHSM
Proper shipping name:	HYDROXYLAMINE SULPHATE

Sea transport

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IMDG

Hazard class: 8
Packing group: III
ID number: UN 2865
Hazard label: 8, EHS
Marine pollutant: YES
Proper shipping name: HYDROXYLAMINE SULPHATE

Air transport

IATA/ICAO

Hazard class: 8
Packing group: III
ID number: UN 2865
Hazard label: 8
Proper shipping name: HYDROXYLAMINE SULPHATE

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Acute; Chronic

State regulations

State RTK

MA, NJ, PA
NJ

CAS Number

7783-20-2
10039-54-0

Chemical name

Ammonium sulphate
Hydroxylammonium sulphate

NFPA Hazard codes:

Health : 2 Fire: 0 Reactivity: 1 Special:

HMIS III rating

Health: 2 Flammability: 0 Physical hazard: 1

Assessment of the hazard classes according to UN GHS criteria (most recent version):

Met. Corr.	1	Substance or mixture corrosive to metals
Carc.	2	Carcinogenicity
Acute Tox.	4 (dermal)	Acute toxicity
Acute Tox.	4 (oral)	Acute toxicity
STOT RE	2	Specific target organ toxicity — repeated exposure
Eye Dam./Irrit.	2B	Serious eye damage/eye irritation
Skin Corr./Irrit.	2	Skin corrosion/irritation
Skin Sens.	1	Skin sensitization
Aquatic Acute	1	Hazardous to the aquatic environment - acute
Aquatic Chronic	3	Hazardous to the aquatic environment - chronic

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16. Other Information

SDS Prepared by:
BASF NA Product Regulations
SDS Prepared on: 2014/07/31

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

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