Safety Data Sheet

Cat. # BC80

Hydroxylamine.HCl

Size: 25g
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance
Substance name : Hydroxylamine.HCl
EC Index-No. : 612-123-00-2
EC-No. : 226-798-2
CAS-No. : 5470-11-1
Product code : 682H-B
Type of product : Pure substance, Hygroscopic substance. Preventive measures apply to the substance in dry state only
Formula : NH₂OH.HCl
Synonyms : hydroxyamine hydrochloride / hydroxyamine, hydrochloride / hydroxyammonium chloride / hydroxylamine chloride / hydroxylamine chloride (1:1) / hydroxylamine hydrochloride / hydroxylamine, hydrochloride / hydroxylammonium chloride / oxammonium, hydrochloride
Product group : Raw material
BIG No : 13937

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

1.2.1. Relevant identified uses
Use of the substance/mixture : Catalyst

1.2.2. Uses advised against
No additional information available

1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
63132-1429 Saint Louis - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number

Emergency number : Chemtrec 1-800-424-9300 (USA/Canada), +1-703-527-3887 (Intl)

<table>
<thead>
<tr>
<th>Country</th>
<th>Organisation/Company</th>
<th>Address</th>
<th>Emergency number</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Belfast Centre) Royal Victoria Hospital</td>
<td>Grosvenor Road BT12 6BA Belfast</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Birmingham Centre) City Hospital</td>
<td>Dudley Road B18 7QH Birmingham</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Cardiff Centre)</td>
<td>Penarth CF64 2XX Cardiff</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service Edinburgh Royal Infirmary of Edinburgh</td>
<td>Little France Crescent EH16 4SA Edinburgh</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Guy's &amp; St Thomas' Poisons Unit Medical Toxicology Unit, Guy's &amp; St Thomas' Hospital Trust</td>
<td>Averley Road SE14 5ER London</td>
<td>+44 20 7188 7188</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit</td>
<td>Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle</td>
<td>0344 892 0111</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Corrosive to metals, Category 1 H290
Hydroxylamine.HCl
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Adverse physicochemical, human health and environmental effects
May be corrosive to metals. Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure. Harmful in contact with skin. Harmful if swallowed. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Very toxic to aquatic life.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)

<table>
<thead>
<tr>
<th>GHS05</th>
<th>GHS07</th>
<th>GHS08</th>
<th>GHS09</th>
</tr>
</thead>
</table>

CLP Signal word : Warning

Hazard statements (CLP)

- 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 through prolonged or repeated exposure.
- H400 - Very toxic to aquatic life.

Precautionary statements (CLP)

- P201 - Obtain special instructions before use.
- P202 - Do not handle until all safety precautions have been read and understood.
- P234 - Keep only in original packaging.
- P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
- P264 - Wash hands, forearms and face thoroughly after handling.
- P270 - Do not eat, drink or smoke when using this product.
- P272 - Contaminated work clothing should not be allowed out of the workplace.
- P273 - Avoid release to the environment.
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P312 - IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.
- P302+P352 - IF ON SKIN: Wash with plenty of 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.
- P330+P331 - IF EXPOSED OR CONCERNED: Get medical advice/attention.
- P312 - Call a POISON CENTRE or doctor if you feel unwell.
- P321 - Specific treatment (see supplemental first aid instruction on this label).
- P333+P331 - If skin irritation occurs: Get medical advice/attention.
- P337+P331 - If eye irritation persists: Get medical advice/attention.
- P362+P364 - Take off contaminated clothing and wash it before reuse.
- P390 - Absorb spillage to prevent material damage.
- P391 - Collect spillage.
- P405 - Store locked up.
- P406 - Store in a corrosion-resistant container with a resistant inner liner.
- P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Substance type</th>
<th>Mono-constituent</th>
</tr>
</thead>
</table>
Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP]
--- | --- | --- | ---
Hydroxylamine.HCl | (CAS-No.) 5470-11-1 (EC-No.) 226-798-2 (EC Index-No.) 612-123-00-2 | 100 | Met. Corr. 1, H290 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Carc. 2, H351 STOT RE 2, H373 Aquatic Acute 1, H400

3.2. Mixtures
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures general:

First-aid measures after inhalation:
- Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact:
- Wash immediately with lots of water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.

First-aid measures after eye contact:
- Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion:
- Rinse mouth with water. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/effects after inhalation:

Symptoms/effects after skin contact:
- Tingling/irritation of the skin.

Symptoms/effects after eye contact:
- Irritation of the eye tissue. ON CONTINUOUS EXPOSURE/CONTACT: Corrosion of the eye tissue. Permanent eye damage.

Symptoms/effects after ingestion:

Chronic symptoms:
- ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation. Methemoglobinemia. Symptoms similar to those listed under acute toxicity.

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media:

Unsuitable extinguishing media:
- Quick-acting BC powder extinguisher. Quick-acting CO2 extinguisher.

5.2. Special hazards arising from the substance or mixture
Fire hazard:
- INDIRECT FIRE HAZARD: Fire/heat: explosive hazard bigger than fire hazard. Reactions involving a fire hazard: see "Reactivity Hazard".

Explosion hazard:
- DIRECT EXPLOSION HAZARD: Risk of explosion by heating. Risk of explosion by sparks. Risk of explosion by shock or friction. Fine dust is explosive with air. INDIRECT EXPLOSION HAZARD: may be ignited by sparks. Reactions with explosion hazards: see "Reactivity Hazard".

Hazardous decomposition products in case of fire:
- Toxic fumes may be released.

5.3. Advice for firefighters
Precautionary measures fire:
- Exposure to fire/heat: keep upwind. Exposure to fire/heat: have neighbourhood close doors and windows.
SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel


Measures in case of dust release: In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

For containment: Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. Cover with a water blanket. Knock down/dilute dust cloud with water spray. Provide equipment/receptacles with earthing. Do not use compressed air for pumping over spills.

Methods for cleaning up: Start with disposal only in the presence of experts. Wet with an excess of water. Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Do not use compressed air for pumping over spills. Store under water in containers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: Avoid raising dust. Use spark-/explosionproof appliances and lighting system. Use earthed equipment. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Handle and open the container with care. Avoid shock and friction. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Do not use compressed air for pumping over. Keep container tightly closed.

Hygiene measures: Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in corrosive resistant container with a resistant inner liner. Keep only in original container. Store locked up. Store in a well-ventilated place. Keep cool.

Incompatible materials: Metals.

Heat and ignition sources: KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.

Information on mixed storage: KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) bases. metals. water/moisture.

Storage area: Store in a cool area. Store in a dry area. Fireproof storeroom. Keep locked up. Unauthorized persons are not admitted. Provide the tank with earthing. Meet the legal requirements.

Special rules on packaging: SPECIAL REQUIREMENTS: watertight. hermetical. dry. clean. shock-absorbing. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials: MATERIAL TO AVOID: steel. aluminium.

7.3. Specific end use(s)

No additional information available
Hydroxylamine.HCl
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available

8.2. Exposure controls

Appropriate engineering controls:
Ensure good ventilation of the work station.

Hand protection:
Gloves

Eye protection:
Face shield. In case of dust production: protective goggles

Skin and body protection:
Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing

Respiratory protection:
Dust production: dust mask with filter type P2

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Crystalline solid. Crystalline powder.</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>69.49 g/mol</td>
</tr>
<tr>
<td>Colour</td>
<td>White.</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
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<tr>
<td>pH</td>
<td>3.2 (1.4 %)</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>152 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>152 °C</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Non flammable.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.7 (17 °C)</td>
</tr>
<tr>
<td>Density</td>
<td>1670 kg/m³ (17 °C)</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water. Soluble in ethanol. Soluble in methanol. Soluble in glycerol. Soluble in propyleneglycol. Water: 95 g/100ml Ethanol: 437 g/100ml</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
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<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

9.2. Other information

VOC content: 0 %

Other properties: Hygroscopic. Acid reaction.
**SECTION 10: Stability and reactivity**

**10.1. Reactivity**
May be corrosive to metals. Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Under confinement: risk of explosion on exposure to temperature rise. Decomposes slowly in moist air. Decomposes slowly on exposure to water (moisture).

**10.2. Chemical stability**
Unstable on exposure to moisture.

**10.3. Possibility of hazardous reactions**
No dangerous reactions known under normal conditions of use.

**10.4. Conditions to avoid**
None under recommended storage and handling conditions (see section 7).

**10.5. Incompatible materials**
metals.

**10.6. Hazardous decomposition products**
Hazardous decomposition products.

**SECTION 11: Toxicological information**

**11.1. Information on toxicological effects**

- **Acute toxicity (oral):** Harmful if swallowed.
- **Acute toxicity (dermal):** Harmful in contact with skin.
- **Acute toxicity (inhalation):** Not classified

**Hydroxylamine.HCl (5470-11-1)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>200 - 2000 mg/kg (Rat, Oral)</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>400 - 2000 mg/kg (Rabbit, Dermal)</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>pH: 3.2 (1.4 %)</td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>pH: 3.2 (1.4 %)</td>
<td></td>
</tr>
<tr>
<td>Respiratory or skin sensitation</td>
<td>May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Suspected of causing cancer.</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-single exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-repeated exposure</td>
<td>May cause damage to organs through prolonged or repeated exposure.</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
<tr>
<td>Potential adverse human health effects and symptoms</td>
<td>Obstructs oxygen absorption. Harmful if swallowed. Harmful in contact with skin. Causes skin irritation. Causes serious eye irritation.</td>
</tr>
</tbody>
</table>

**SECTION 12: Ecological information**

**12.1. Toxicity**

- **Ecology - general:** Dangerous for the environment.
- **Ecology - air:** Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
- **Ecology - water:** Very toxic to aquatic organisms. Groundwater pollutant. Severe water pollutant (surface water). Inhibition of activated sludge. pH shift.

**Acute aquatic toxicity:** Very toxic to aquatic life.

**Chronic aquatic toxicity:** Not classified

**12.2. Persistence and degradability**

**Hydroxylamine.HCl (5470-11-1)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Biodegradability: not applicable.</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>ThOD</td>
<td>Not applicable</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**12.3. Bioaccumulative potential**

**Hydroxylamine.HCl (5470-11-1)**

Bioaccumulative potential: Not bioaccumulative.

**12.4. Mobility in soil**

No additional information available
12.5. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Product/Packaging disposal recommendations: Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Specific incineration with energy recovery. Do not discharge to wastewater treatment installation.


European List of Waste (LoW) code:
15 01 10* - packaging containing residues of or contaminated by dangerous substances
16 04 03* - other waste explosives
16 08 07* - spent catalysts contaminated with dangerous substances

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number
UN-No. (ADR) : UN 3260
UN-No. (IMDG) : UN 2923
UN-No. (IATA) : UN 2923
UN-No. (ADN) : UN 3260
UN-No. (RID) : UN 3260

14.2. UN proper shipping name
Proper Shipping Name (ADR) : Corrosive solid, acidic, inorganic, n.o.s.
Proper Shipping Name (IMDG) : CORROSIVE SOLID, TOXIC, N.O.S.
Proper Shipping Name (IATA) : Corrosive solid, toxic, n.o.s.
Proper Shipping Name (ADN) : Corrosive solid, acidic, inorganic, n.o.s.
Proper Shipping Name (RID) : Corrosive solid, acidic, inorganic, n.o.s.
Transport document description (ADR) : UN 3260 Corrosive solid, acidic, inorganic, n.o.s., 8, III, (E), ENVIRONMENTALLY HAZARDOUS
Transport document description (IMDG) : UN 2923 CORROSIVE SOLID, TOXIC, N.O.S., 8 (6.1), III, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS
Transport document description (IATA) : UN 2923 Corrosive solid, toxic, n.o.s., 8 (6.1), III, ENVIRONMENTALLY HAZARDOUS
Transport document description (ADN) : UN 3260 Corrosive solid, acidic, inorganic, n.o.s., 8, III, ENVIRONMENTALLY HAZARDOUS
Transport document description (RID) : UN 3260 Corrosive solid, acidic, inorganic, n.o.s., 8, III, ENVIRONMENTALLY HAZARDOUS

14.3. Transport hazard class(es)
ADR
Transport hazard class(es) (ADR) : 8
Danger labels (ADR) : 8

IMDG
Transport hazard class(es) (IMDG) : 8 (6.1)
Danger labels (IMDG) : 8, 6.1
Hydroxylamine.HCl
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

IATA
Transport hazard class(es) (IATA) : 8 (6.1)
Hazard labels (IATA) : 8, 6.1

ADN
Transport hazard class(es) (ADN) : 8
Danger labels (ADN) : 8

RID
Transport hazard class(es) (RID) : 8
Danger labels (RID) : 8

14.4. Packing group
Packing group (ADR) : III
Packing group (IMDG) : III
Packing group (IATA) : III
Packing group (ADN) : III
Packing group (RID) : III

14.5. Environmental hazards
Dangerous for the environment : Yes
Marine pollutant : Yes
Other information : No supplementary information available

14.6. Special precautions for user
Overland transport
Transport regulations (ADR) : Subject
Classification code (ADR) : C2
Hazard identification number (Kemler No.) : 80
Orange plates : 80
Tunnel restriction code (ADR) : E
EAC code : 2X

Transport by sea
Transport regulations (IMDG) : Subject
Special provisions (IMDG) : 223, 274
Limited quantities (IMDG) : 5 kg
Excepted quantities (IMDG) : E1
Packing instructions (IMDG) : P002
IBC packing instructions (IMDG) : IBC08
IBC special provisions (IMDG) : B3
Tank instructions (IMDG) : T1
Tank special provisions (IMDG) : TP33
EmS-No. (Fire) : F-A
Hydroxylamine.HCl
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

EmS-No. (Spillage): S-B
Stowage category (IMDG): B
Stowage and handling (IMDG): SW2
Properties and observations (IMDG): Causes burns to skin, eyes and mucous membranes. Toxic if swallowed, by skin contact or by inhalation.

Air transport
Transport regulations (IATA): Subject to the provisions
PCA Excepted quantities (IATA): E1
PCA limited quantities (IATA): Y845
PCA limited quantity max net quantity (IATA): 5kg
PCA packing instructions (IATA): 860
PCA max net quantity (IATA): 25kg
CAO packing instructions (IATA): 864
CAO max net quantity (IATA): 100kg
Special provisions (IATA): A3
ERG code (IATA): 8P

Inland waterway transport
Classification code (ADN): C2

Rail transport
Transport regulations (RID): Subject
Classification code (RID): C2

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
15.1.1. EU-Regulations
No REACH Annex XVII restrictions
Hydroxylamine.HCl is not on the REACH Candidate List
Hydroxylamine.HCl is not on the REACH Annex XIV List
Hydroxylamine.HCl is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

VOC content: 0 %

15.1.2. National regulations
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:
Acute Tox. 4 (Dermal) Acute toxicity (dermal), Category 4
Acute Tox. 4 (Oral) Acute toxicity (oral), Category 4
Aquatic Acute 1 Hazardous to the aquatic environment — Acute Hazard, Category 1
Carc. 2 Carcinogenicity, Category 2
Eye Irrit. 2 Serious eye damage/eye irritation, Category 2
Met. Corr. 1 Corrosive to metals, Category 1
Skin Irrit. 2 Skin corrosion/irritation, Category 2
Skin Sens. 1 Skin sensitisation, Category 1
STOT RE 2 Specific target organ toxicity — Repeated exposure, Category 2
H290 May be corrosive to metals.
<table>
<thead>
<tr>
<th>Clp Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H302</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>H312</td>
<td>Harmful in contact with skin.</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>H317</td>
<td>May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>H351</td>
<td>Suspected of causing cancer.</td>
</tr>
<tr>
<td>H373</td>
<td>May cause damage to organs through prolonged or repeated exposure.</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life.</td>
</tr>
</tbody>
</table>

Safety Data Sheet applicable for regions : GB - United Kingdom

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.