1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name: Hexylamine

Product Number: 219703
Brand: Aldrich

CAS-No.: 111-26-2

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

Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103
USA

Telephone: +1 800-325-5832
Fax: +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone #: (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 3), H226
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Dermal (Category 3), H311
Skin corrosion (Category 1A), H314
Serious eye damage (Category 1), H318
Acute aquatic toxicity (Category 2), H401
Chronic aquatic toxicity (Category 2), H411

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

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)
H226 Flammable liquid and vapour.
H301 + H311 Toxic if swallowed or in contact with skin
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240  Ground/bond container and receiving equipment.
P241  Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242  Use only non-sparking tools.
P243  Take precautionary measures against static discharge.
P264  Wash skin thoroughly after handling.
P270  Do not eat, drink or smoke when using this product.
P273  Avoid release to the environment.
P280  Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310 + P330  IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.
P301 + P330 + P331  IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353  IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310  IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P363  Wash contaminated clothing before reuse.
P370 + P378  In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P391  Collect spillage.
P403 + P235  Store in a well-ventilated place. Keep cool.
P405  Store locked up.
P501  Dispose of contents/ container to an approved waste disposal plant.

2.3  Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1  Substances
Synonyms : 1-Aminohexane

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexylamine</td>
<td>Flam. Liq. 3; Acute Tox. 3; Skin Corr. 1A; Eye Dam. 1; Aquatic Acute 2; Aquatic Chronic 2; H226, H301 + H311, H314, H318, H411</td>
</tr>
</tbody>
</table>

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

4. FIRST AID MEASURES

4.1  Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. 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

5. FIREFIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media
Water spray Alcohol-resistant foam Dry chemicalUse water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Nitrogen oxides (NOx)

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Air sensitive.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Splash contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 262 min
Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)
data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals. Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance
   Form: clear, liquid
   Colour: colourless

b) Odour
   No data available

c) Odour Threshold
   No data available

d) pH
   11.6 at 10 g/l at 20 °C (68 °F)

e) Melting point/freezing point
   Melting point/range: -23 °C (-9 °F) - lit.

f) Initial boiling point and boiling range
   131 - 132 °C (268 - 270 °F) - lit.
g) Flash point  27 °C (81 °F) - closed cup  
h) Evaporation rate  No data available  
i) Flammability (solid, gas)  No data available  
j) Upper/lower  Upper explosion limit: 9.3 % (V)  
flammability or  Lower explosion limit: 2.1 % (V)  
explosive limits  
k) Vapour pressure  54 hPa (41 mmHg) at 50 °C (122 °F)  
10.6 hPa (8.0 mmHg) at 20 °C (68 °F)  
l) Vapour density  No data available  
m) Relative density  0.766 g/cm³ at 25 °C (77 °F)  
n) Water solubility  soluble  
o) Partition coefficient: n-octanol/water  log Pow: 1.9 at 20 °C (68 °F)  
p) Auto-ignition  No data available  
temperature  
q) Decomposition  No data available  
temperature  
r) Viscosity  1.07 mm²/s at 23 °C (73 °F) -  
s) Explosive properties  No data available  
t) Oxidizing properties  No data available  

9.2 Other safety information  
No data available  

10. STABILITY AND REACTIVITY  

10.1 Reactivity  
No data available  

10.2 Chemical stability  
Stable under recommended storage conditions.  

10.3 Possibility of hazardous reactions  
Vapours may form explosive mixture with air.  

10.4 Conditions to avoid  
Heat, flames and sparks.  

10.5 Incompatible materials  
acids, Acid chlorides, Acid anhydrides, Strong oxidizing agents, Carbon dioxide (CO2)  

10.6 Hazardous decomposition products  
Other decomposition products - No data available  
In the event of fire: see section 5  

11. TOXICOLOGICAL INFORMATION  

11.1 Information on toxicological effects  

Acute toxicity  
No data available  

Inhalation: No data available  

Dermal: No data available  

No data available  

Skin corrosion/irritation  
No data available
Serious eye damage/eye irritation  
No data available

Respiratory or skin sensitisation  
No data available

Germ cell mutagenicity  
No data available

Carcinogenicity  
No data available

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity  
No data available

Specific target organ toxicity - single exposure  
No data available

Specific target organ toxicity - repeated exposure  
No data available

Aspiration hazard  
No data available

Additional Information  
RTECS: MQ4540000  
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Cough, Shortness of breath, Headache, Nausea

12. ECOLOGICAL INFORMATION

12.1 Toxicity  
Toxicity to fish  
LC50 - Pimephales promelas (fathead minnow) - 56.6 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates  
EC50 - Daphnia magna (Water flea) - 8.6 mg/l - 48 h

12.2 Persistence and degradability  
No data available

12.3 Bioaccumulative potential  
No data available

12.4 Mobility in soil  
No data 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  
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects.
13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2734 Class: 8 (3) Packing group: I
Proper shipping name: Amines, liquid, corrosive, flammable n.o.s. (Hexylamine)
Reportable Quantity (RQ):
Poison Inhalation Hazard: No

IMDG
UN number: 2734 Class: 8 (3) Packing group: I EMS-No: F-E, S-C
Proper shipping name: AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. (Hexylamine)
Marine pollutant:yes

IATA
UN number: 2734 Class: 8 (3) Packing group: I
Proper shipping name: Amines, liquid, corrosive, flammable, n.o.s. (Hexylamine)

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components
Hexylamine CAS-No. 111-26-2 Revision Date 1993-04-24

Pennsylvania Right To Know Components
Hexylamine CAS-No. 111-26-2 Revision Date 1993-04-24

New Jersey Right To Know Components
Hexylamine CAS-No. 111-26-2 Revision Date 1993-04-24

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

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

Acute Tox. Acute toxicity
Aquatic Acute Acute aquatic toxicity
Aquatic Chronic  Chronic aquatic toxicity
Eye Dam.  Serious eye damage
Flam. Liq.  Flammable liquids
H226  Flammable liquid and vapour.
H301  Toxic if swallowed.
H301 + H311  Toxic if swallowed or in contact with skin
H311  Toxic in contact with skin.
H314  Causes severe skin burns and eye damage.
H318  Causes serious eye damage.

**HMIS Rating**
Health hazard: 3
Chronic Health Hazard: 
Flammability: 3
Physical Hazard 0

**NFPA Rating**
Health hazard: 3
Fire Hazard: 3
Reactivity Hazard: 0

**Further information**
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Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

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