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

1.1 Product identifier

Trade name 1,6-Diaminohexane

Stock number: L07227
CAS Number: 124-09-4
EC number: 204-679-6
Index number: 612-104-00-9

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

Identified use: SU24  Scientific research and development

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier: Alfa Aesar
Avocado Research Chemicals, Ltd.
Shore Road
Port of Heysham Industrial Park
Heysham Lancashire LA3 2XY
United Kingdom
Office Tel: +44 (0) 1524 850506
Office Fax: +44 (0) 1524 850606
Email: uktech@alfa.com
www.alfa.com
Informing department: Product safety department.

1.4 Emergency telephone number: Call Carechem 24 at +44 (0) 1865 407333 (English only); +44 (0) 1235 239670 (Multi-language)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

GHS05 corrosion
Skin Corr. 1B H314 Causes severe skin burns and eye damage.

GHS07
Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H312 Harmful in contact with skin.
STOT SE 3 H335 May cause respiratory irritation.

Other hazards that do not result in classification No information known.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 The substance is classified and labelled according to the CLP regulation.

Hazard pictograms

GHS05 GHS07

Signal word Danger

Hazard statements
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.

Precautionary statements
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P330 Wear protective gloves/protective clothing/eye protection/face protection.
P330+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P309 IF exposed or if you feel unwell:
P310 Immediately call a POISON CENTER or doctor/physician.

2.3 Other hazards

Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

3.1 Substances

CAS# Designation: 124-09-4 1,6-Diaminohexane
Identification number(s):
EC number: 204-679-6
Index number: 612-104-00-9

SECTION 4: First aid measures

4.1 Description of first aid measures

General information Instantly remove any clothing soiled by the product.
After inhalation Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
Seek immediate medical advice.
After skin contact Instantly wash with water and soap and rinse thoroughly. Seek immediate medical advice.
After eye contact Rinse opened eye for several minutes under running water. Then consult doctor.
After swallowing Seek medical treatment.

4.2 Most important symptoms and effects, both acute and delayed

Causes severe skin burns.
Harmful if swallowed.
Harmful in contact with skin.
May cause respiratory irritation.

(Contd. on page 2)
### SECTION 5: Firefighting measures

**5.1 Extinguishing media**
Suitable extinguishing agents: CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

**5.2 Special hazards arising from the substance or mixture**
If this product is involved in a fire, the following can be released:
- Carbon monoxide and carbon dioxide
- Nitrogen oxides (NOx)

**5.3 Advice for firefighters**
- Protective equipment: Wear self-contained breathing apparatus. Wear full protective suit.
- Suitable extinguishing agents: CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
- If the product is involved in a fire, the following can be released:
  - Carbon monoxide and carbon dioxide
  - Nitrogen oxides (NOx)
- Prevent formation of dust.

### SECTION 6: Accidental release measures

**6.1 Personal precautions, protective equipment and emergency procedures**
- Ensure adequate ventilation.

**6.2 Environmental precautions**
- Do not allow product to reach sewage system or water bodies.
- Ensure adequate ventilation.

**6.3 Methods and material for containment and cleaning up**
- Use neutralizing agent.
- Dispose of contaminated material as waste according to section 13.
- Ensure adequate ventilation.

**Prevention of secondary hazards**
- Keep away from ignition sources.

**6.4 Reference to other sections**
- See Section 7 for information on safe handling.
- See section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

### SECTION 7: Handling and storage

**7.1 Precautions for safe handling**
- Handle under dry protective gas.
- Keep containers tightly sealed.
- Store in cool, dry place in tightly closed containers.
- Ensure good ventilation/exhaustion at the workplace.
- Prevent formation of dust.

**7.2 Conditions for safe storage, including any incompatibilities**
- Storage requirements to be met by storerooms and containers: No special requirements.
- Information about storage in one common storage facility:
  - Store away from air.
  - Store away from water.
  - Store away from oxidising agents.
- Further information about storage conditions:
  - Store under dry inert gas.
  - This product is hygroscopic.
  - This product is air sensitive.
  - Keep container tightly sealed.
  - Store in cool, dry conditions in well-sealed containers.
  - Protect from humidity and keep away from water.
- Prevent formation of dust.

**7.3 Specific end use(s)**
- No further relevant information available.

### SECTION 8: Physical and chemical properties

**9.1 Information on basic physical and chemical properties**

**Appearance:** Crystalline

**Smell:** Amine-like

**Odour threshold:** Not determined.

**pH-value (100 g/l) at 25 °C:** 12.4
### Safety Data Sheet

**Trade name** 1,6-Diaminohexane

#### SECTION 10: Stability and reactivity

<table>
<thead>
<tr>
<th>10.1 Reactivity</th>
<th>No information known.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.2 Chemical stability</td>
<td>Stable under recommended storage conditions.</td>
</tr>
<tr>
<td><strong>Thermal decomposition / conditions to be avoided</strong></td>
<td>No decomposition if used and stored according to specifications.</td>
</tr>
<tr>
<td>10.3 Possibility of hazardous reactions</td>
<td>Reacts with strong oxidising agents</td>
</tr>
<tr>
<td>10.4 Conditions to avoid</td>
<td>No further relevant information available.</td>
</tr>
<tr>
<td><strong>10.5 Incompatible materials</strong></td>
<td>Air, Water/moisture, Oxidising agents</td>
</tr>
<tr>
<td><strong>10.6 Hazardous decomposition products</strong></td>
<td>Carbon monoxide and carbon dioxide, Nitrogen oxides (NOx)</td>
</tr>
</tbody>
</table>

#### SECTION 11: Toxicological information

<table>
<thead>
<tr>
<th>11.1 Information on toxicological effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute toxicity</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>LD/LC50 values that are relevant for classification:</strong></td>
</tr>
<tr>
<td>Oral LD50</td>
</tr>
<tr>
<td>Dermal LD50</td>
</tr>
<tr>
<td><strong>Skin irritation or corrosion:</strong></td>
</tr>
<tr>
<td><strong>Eye irritation or corrosion:</strong></td>
</tr>
<tr>
<td><strong>Sensitization:</strong></td>
</tr>
<tr>
<td><strong>Germ cell mutagenicity:</strong></td>
</tr>
<tr>
<td><strong>Carcinogenicity:</strong></td>
</tr>
<tr>
<td><strong>Reproductive toxicity:</strong></td>
</tr>
<tr>
<td><strong>Specific target organ system toxicity - repeated exposure:</strong></td>
</tr>
<tr>
<td><strong>Specific target organ system toxicity - single exposure:</strong></td>
</tr>
<tr>
<td><strong>Aspiration hazard:</strong></td>
</tr>
<tr>
<td><strong>Subacute to chronic toxicity:</strong></td>
</tr>
<tr>
<td><strong>Additional toxicological information:</strong></td>
</tr>
</tbody>
</table>

#### SECTION 12: Ecological information

<table>
<thead>
<tr>
<th>12.1 Toxicity</th>
<th>No further relevant information available.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aqueous toxicity:</strong></td>
<td>No further relevant information available.</td>
</tr>
<tr>
<td><strong>Bioaccumulative potential:</strong></td>
<td>No further relevant information available.</td>
</tr>
<tr>
<td><strong>Mobility in soil:</strong></td>
<td>No further relevant information available.</td>
</tr>
<tr>
<td><strong>Additional ecological information:</strong></td>
<td>General notes: Water hazard class 1 (Self-assessment): slightly hazardous for water.</td>
</tr>
<tr>
<td></td>
<td>Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.</td>
</tr>
<tr>
<td></td>
<td>Avoid transfer into the environment.</td>
</tr>
<tr>
<td></td>
<td>Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.</td>
</tr>
<tr>
<td><strong>Results of PBT and vPvB assessment</strong></td>
<td>PBT: Not applicable.</td>
</tr>
<tr>
<td></td>
<td>vPvB: Not applicable.</td>
</tr>
<tr>
<td><strong>12.6 Other adverse effects</strong></td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

#### SECTION 13: Disposal considerations

<table>
<thead>
<tr>
<th>13.1 Waste treatment methods</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recommendation:</strong> Hand over to disposers of hazardous waste.</td>
</tr>
<tr>
<td>Must be specially treated under adherence to official regulations.</td>
</tr>
<tr>
<td>Consult state, local or national regulations for proper disposal.</td>
</tr>
<tr>
<td><strong>Uncleaned packagings:</strong> Recommendation: Disposal must be made according to official regulations.</td>
</tr>
<tr>
<td><strong>Recommended cleaning agent:</strong> Water, if necessary with cleaning agent.</td>
</tr>
</tbody>
</table>
SECTION 14: Transport information

14.2 UN proper shipping name
ADR
IMDG, IATA
2280 HEXAMETHYLENEDIAMINE, SOLID
HEXAMETHYLENEDIAMINE, SOLID

14.3 Transport hazard class(es)
ADR
Class
Label
8 (C8) Corrosive substances.
8
IMDG, IATA
Class
Label
8 Corrosive substances.
8

Packging group
ADR, IMDG, IATA
III

14.5 Environmental hazards:
Not applicable.

14.6 Special precautions for user
Warning: Corrosive substances.
Kemler Number:
80
EMS Number:
F-A-S-B

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable.

Transport/Additional information:
ADR
Excepted quantities (EQ):
E1
Limited quantities (LQ):
5 kg
Transport category:
3
Tunnel restriction code:
E
UN "Model Regulation":
UN2280, HEXAMETHYLENEDIAMINE, SOLID, 8, III

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Australian Inventory of Chemical Substances: Substance is listed.
Standard for the Uniform Scheduling of Medicines and Poisons: Substance is not listed.
National regulations
Information about limitation of use:
Employment restrictions concerning young persons must be observed.
For use only by technically qualified individuals.
Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
Other regulations, limitations and prohibitive regulations
ELINCS (European List of Notified Chemical Substances): Substance is not listed.
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006: Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.
ANNEX XIV OF THE REACH REGULATIONS (REQUIRE AUTHORISATION FOR USE): Substance is not listed.

SECTION 16: Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department
Abbreviations and acronyms:
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
vPvB: very Persistent and very Bioaccumulative
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)
NTP: National Toxicology Program (USA)
IARC: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)
Acute Tox. 4: Acute toxicity, Hazard Category 4
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3