SAFETY DATA SHEET

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

1.1. Product identifier

| Trade name or designation of the mixture | Hyloseal 620 |
| Registration number | - |
| Synonyms | None. |
| SDS number | 38 |
| Issue date | 24-July-2013 |
| Version number | 01 |
| Revision date | - |
| Supersedes date | - |

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

| Identified uses | Semi-hardening gasketing/sealing compound. |
| Uses advised against | Use in accordance with supplier's recommendations. |

1.3. Details of the supplier of the safety data sheet

| Manufacturer: | Hylomar Ltd. |
| Address: | Hylo House, Cale Lane, New Springs, Wigan, Greater Manchester, UK, WN2 1JT |
| Telephone number: | +44(0)1942 617000 |
| E-mail address: | info@hylomar.co.uk |
| Contact person: | Technical Department |

1.4. Emergency telephone number

| Access code: | 333544 |

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

| Classification | C;R35, R52/53 |

The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended

| Health hazards | Category 1A |
| Skin corrosion/irritation | H314 - Causes severe skin burns and eye damage. |

| Environmental hazards | Category 3 |
| Hazardous to the aquatic environment, long-term aquatic hazard | H412 - Harmful to aquatic life with long lasting effects. |

Hazard summary

Physical hazards | Not classified for physical hazards. |
Health hazards | Causes severe burns. Occupational exposure to the substance or mixture may cause adverse health effects. |
Environmental hazards | Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
Specific hazards | Causes severe skin burns and eye damage. |
Main symptoms | May cause redness and pain. Causes burns. Extreme irritation of eyes and mucous membranes, including burning and tearing. |

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: 2,2’-dimethyl-4,4’methylenebis(cyclohexylamine)
SECTION 2: Danger, Hazard, and Precautionary Statements

Signal word: Danger

Hazard statements:
- H314 - Causes severe skin burns and eye damage.
- H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements:

Prevention:
- P264 - Wash thoroughly after handling.
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Response:
- 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.
- P363 - Wash contaminated clothing before reuse.
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 - Immediately call a POISON CENTRE or doctor/physician.

Storage:
- P405 - Store locked up.

Disposal:
- P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information:
- Not applicable.

2.3 Other hazards:
- Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/Information on Ingredients

3.2 Mixtures

General information:

Composition comments:
The full text for all R- and H-phrases is displayed in section 16. All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First Aid Measures

General information:
If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

4.1 Description of First Aid Measures

Inhalation:
If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.

Skin contact:
Immediately take off all contaminated clothing. Wash off immediately with soap and plenty of water. Wash contaminated clothing before reuse. Get immediate medical attention.

Eye contact:
Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids wide apart. If irritation persists: Continue flushing during transport to hospital. Take along these instructions.
Ingestion

Rinse mouth. Drink a few glasses of water or milk. Get immediate medical attention.

Causes severe skin and eye burns.

4.2. Most important symptoms and effects, both acute and delayed

Provide general supportive measures and treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards

The product is not flammable.

5.1. Extinguishing media

Suitable extinguishing media

Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

By heating and fire, toxic vapours/gases may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

Special fire fighting procedures

Use standard firefighting procedures and consider the hazards of other involved materials. Cool containers exposed to heat with water spray and remove container, if no risk is involved. Prevent runoff from fire control or dilution from entering streams, sewers or drinking water supply.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Avoid contact with skin and eyes. Wear protective clothing as described in Section 8 of this SDS. In case of spills, beware of slippery floors and surfaces.

For emergency responders

Keep unnecessary personnel away. Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Scrape up the spilled material. Transfer to a container for disposal. Following product recovery, flush area with water.

6.4. Reference to other sections

For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes. Wear protective clothing as described in Section 8 of this safety data sheet. Wash thoroughly after handling. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from heat, spark, open flames and other sources of ignition. Keep container tightly closed in a cool, well-ventilated place. Store away from incompatible materials.

7.3. Specific end use(s)

Semi-hardening gasketing/sealing compound.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

UK. EH40 Workplace Exposure Limits (WELs)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caprolactam (CAS 105-60-2)</td>
<td>STEL</td>
<td>3 mg/m3</td>
<td>Inhalable dust.</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>20 mg/m3</td>
<td>Vapor and dust.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mg/m3</td>
<td>Vapor and dust.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 mg/m3</td>
<td>Inhalable dust.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caprolactam (CAS 105-60-2)</td>
<td>STEL</td>
<td>40 mg/m3</td>
<td>Vapor and dust.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological limit values</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>Vapor and dust</td>
</tr>
<tr>
<td>Recommended monitoring procedures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Derived no-effect level (DNEL)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Predicted no effect concentrations (PNECs)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.2. Exposure controls

Provide adequate ventilation. Observe occupational exposure limits and minimise the risk of exposure.

Individual protection measures, such as personal protective equipment

**General information**

Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye/face protection**

Wear approved safety glasses or goggles.

**Skin protection**

- **Hand protection**
  Wear protective gloves. Nitrile or neoprene gloves are recommended. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

- **Other**
  Normal work clothing (long sleeved shirts and long pants) is recommended.

**Respiratory protection**

Under normal conditions, respirator is not normally required. In case of inadequate ventilation: It is recommended to use respiratory equipment with combination filter, type A2/P2.

**Thermal hazards**

Wear appropriate thermal protective clothing, when necessary.

**Hygiene measures**

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**Environmental exposure controls**

Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

**Appearance**

Viscous liquid.

**Physical state**

Liquid.

**Form**

Liquid.

**Colour**

Light blue.

**Odour**

Mild.

**Odour threshold**

Not available.

**pH**

Not available.

**Melting point/freezing point**

Not available.

**Initial boiling point and boiling range**

Not available.

**Flash point**

Not available.

**Evaporation rate**

Not available.

**Flammability (solid, gas)**

Not applicable.

**Upper/lower flammability or explosive limits**

- **Flammability limit - lower (%)**
  Not available.

- **Flammability limit - upper (%)**
  Not available.

**Vapour pressure**

Not available.

**Vapour density**

Not available.

**Relative density**

1.05 (20 °C)

**Solubility(ies)**

Insoluble in water.
Partition coefficient (n-octanol/water) Not available.
Auto-ignition temperature Not available.
Decomposition temperature Not available.
Viscosity 20000 mPa·s (20 °C)
Explosive properties Not available.
Oxidizing properties Not available.
9.2. Other information No relevant additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity The product is stable and non reactive under normal conditions of use, storage and transport.
10.2. Chemical stability Material is stable under normal conditions.
10.3. Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid Contact with incompatible materials.

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Ingestion Ingestion may cause irritation and malaise.
Inhalation In high concentrations, vapours may irritate throat and respiratory system and cause coughing.
Skin contact Causes severe skin burns and eye damage.
Eye contact Causes serious eye damage.

Symptoms Causes severe skin burns and eye damage.

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caprolactam (CAS 105-60-2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>Rat</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td>Inhalation LC50</td>
<td>Rat</td>
<td>8.16 mg/l, 4 hours</td>
</tr>
<tr>
<td>Oral LD50</td>
<td>Rat</td>
<td>1475 mg/kg</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Causes severe skin burns and eye damage.</td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Causes serious eye damage.</td>
<td></td>
</tr>
<tr>
<td>Respiratory sensitisation</td>
<td>Not classified.</td>
<td></td>
</tr>
<tr>
<td>Skin sensitisation</td>
<td>Not classified.</td>
<td></td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified.</td>
<td></td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified.</td>
<td></td>
</tr>
<tr>
<td>[\text{IARC Monographs. Overall Evaluation of Carcinogenicity}]</td>
<td>Caprolactam (CAS 105-60-2) 4 Probably not carcinogenic to humans.</td>
<td></td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified.</td>
<td></td>
</tr>
<tr>
<td>Specific target organ toxicity - single exposure</td>
<td>Not classified.</td>
<td></td>
</tr>
<tr>
<td>Specific target organ toxicity - repeated exposure</td>
<td>Not classified.</td>
<td></td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified.</td>
<td></td>
</tr>
<tr>
<td>Mixture versus substance information</td>
<td>Not applicable.</td>
<td></td>
</tr>
<tr>
<td>Other information</td>
<td>No other specific acute or chronic health impact noted.</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 12: Ecological information

12.1. Toxicity
Harmful to aquatic life with long lasting effects.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caprolactam (CAS 105-60-2)</td>
<td>Algae</td>
<td>EC50 Green algae (Selenastrum capricornutum)</td>
</tr>
<tr>
<td></td>
<td>Crustacea</td>
<td>EC50 Daphnia magna</td>
</tr>
<tr>
<td></td>
<td>Fish</td>
<td>LC50 Salmo gardineri</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No data is available on the degradability of this product.

12.3. Bioaccumulative potential
Not available.

Partition coefficient
n-octanol/water (log Kow)
Caprolactam (CAS 105-60-2) 0.12

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil
Not available.

Mobility in general
The product is soluble in water.

12.5. Results of PBT and vPvB assessment
Not a PBT or vPvB substance or mixture.

12.6. Other adverse effects
Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Residual waste
Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal.

EU waste code
The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Disposal methods/information
Do not discharge into drains, water courses or onto the ground. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

ADR
14.1. UN number
UN1760
14.2. UN proper shipping name
CORROSIVE LIQUID, N.O.S. (2,2'-dimethyl-4,4'-methylenebis (cyclohexylamine))
14.3. Transport hazard class(es)
8
14.4. Packing group
II
14.5. Environmental hazards
No
14.6. Special precautions for user
Read safety instructions, SDS and emergency procedures before handling.

RID
14.1. UN number
UN1760
14.2. UN proper shipping name
CORROSIVE LIQUID, N.O.S. (2,2'-dimethyl-4,4'-methylenebis (cyclohexylamine))
14.3. Transport hazard class(es)
8
14.4. Packing group
II
14.5. Environmental hazards
No
14.6. Special precautions for user
Read safety instructions, SDS and emergency procedures before handling.
ADN

14.1. UN number  UN1760
14.2. UN proper shipping name  Corrosive Liquid, N.o.s. (2,2'-dimethyl-4,4'methylenebis (cyclohexylamine))
14.3. Transport hazard class(es)  8
14.4. Packing group  II
14.5. Environmental hazards No
14.6. Special precautions for user  Read safety instructions, SDS and emergency procedures before handling.

IATA

14.1. UN number  UN1760
14.2. UN proper shipping name  Corrosive liquid, n.o.s. (2,2'-dimethyl-4,4'methylenebis (cyclohexylamine))
14.3. Transport hazard class(es)  8
14.4. Packing group  II
14.5. Environmental hazards No
14.6. Special precautions for user  Read safety instructions, SDS and emergency procedures before handling.

IMDG

14.1. UN number  UN1760
14.2. UN proper shipping name  CORROSIVE LIQUID, N.O.S. (2,2'-dimethyl-4,4'methylenebis (cyclohexylamine))
14.3. Transport hazard class(es)  8
14.4. Packing group  II
14.5. Environmental hazards No
14.6. Special precautions for user  Read safety instructions, SDS and emergency procedures before handling.
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
   This substance/mixture is not intended to be transported in bulk.

SECTION 15: Regulatory information

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

EU regulations

- Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I
  Not listed.
- Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II
  Not listed.
  Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended
  Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended
  Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended
  Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended
  Not listed.
- Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry
  Not listed.
Regulation (EC) No. 1907/2006, REACH Article 59(1) Candidate List as currently published by ECHA
Not listed.

Authorisations
Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended
Not listed.

Restrictions on use
Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended
Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work
Not regulated.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding
Not regulated.

Other EU regulations
Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances
Not regulated.

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work
2,2'-dimethyl-4,4'methylenebis(cyclohexylamine) (CAS 6864-37-5)
Caprolactam (CAS 105-60-2)

Directive 94/33/EC on the protection of young people at work
2,2'-dimethyl-4,4'methylenebis(cyclohexylamine) (CAS 6864-37-5)

Other regulations
The product is classified and labelled in accordance with EC directives or respective national laws.
This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

National regulations
Follow national regulation for work with chemical agents.

15.2. Chemical safety assessment
No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations
DNEL: Derived No-Effect Level.
PBT: Persistent, bioaccumulative and toxic.
PNEC: Predicted No-Effect Concentration.
vPvB: Very Persistent and very Bioaccumulative.

References
HSDB® - Hazardous Substances Data Bank
Registry of Toxic Effects of Chemical Substances (RTECS)
ESIS (European chemical Substances Information System)

Information on evaluation method leading to the classification of mixture
The mixture is classified based on test data for physical hazards. The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available. For details, refer to Sections 9, 11 and 12.

Full text of any statements or R-phrases and H-statements under Sections 2 to 15
R20/22 Harmful by inhalation and if swallowed.
R22 Harmful if swallowed.
R23/24 Toxic by inhalation and in contact with skin.
R35 Causes severe burns.
R36/37/38 Irritating to eyes, respiratory system and skin.
R41 Risk of serious damage to eyes.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.

Training information
Follow training instructions when handling this material.

Disclaimer
The information in the sheet was written based on the best knowledge and experience currently available.