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

· 1.1 Product identifier
· Trade name: Bondmaster E32A
· Article number: SA13334012A
· 1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.
· Application of the substance / the preparation: Epoxy resin adhesive
· 1.3 Details of the supplier of the safety data sheet
· Manufacturer/Supplier:
  Alfa Laval Tumba AB
  Hans Stahles väg 7
  S-147 80 Tumba
  Sweden
  +46 8 530 650 00
  info.se@alfalaval.com

Contact details for all countries are continually updated on our website. Please visit www.alfalaval.com to access the information. The latest version of Alfa Laval's SDS is available on our website.

· Further information obtainable from: sds.question@alfalaval.com
· 1.4 Emergency telephone number:
  For immediate, life-threatening emergencies, call 999
  For health advice and information (24h) dial 111 (NHS direct)

SECTION 2: Hazards identification

· 2.1 Classification of the substance or mixture
· Classification according to Directive 67/548/EEC or Directive 1999/45/EC
  Xn; Harmful
    R68: Possible risk of irreversible effects.
  Xi; Irritant
    R36/38: Irritating to eyes and skin.
  Xi; Sensitising
    R43: May cause sensitisation by skin contact.
  N; Dangerous for the environment
    R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· Information concerning particular hazards for human and environment:
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
Safety data sheet
according to 1907/2006/EC, Article 31

Trade name: Bondmaster E32A

· Classification system:
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

· 2.2 Label elements

· Labelling according to EU guidelines:
The product has been marked in accordance with EU Directives / respective national laws.

· Code letter and hazard designation of product:

\[\text{Xn Harmful} \]
\[\text{N Dangerous for the environment} \]

· Hazard-determining components of labelling:
reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight \(\leq 700\))
2,3-Epoxypropyl-neodecanoate

· Risk phrases:
36/38 Irritating to eyes and skin.
43 May cause sensitisation by skin contact.
68 Possible risk of irreversible effects.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· Safety phrases:
24 Avoid contact with skin.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
28 After contact with skin, wash immediately with plenty of soap and water.
37/39 Wear suitable gloves and eye/face protection.

· Special labelling of certain preparations:
Contains epoxy constituents. See information supplied by the manufacturer.

· 2.3 Other hazards
· Results of PBT and vPvB assessment
· PBT: Not applicable.
· vPvB: Not applicable.

*SECTION 3: Composition/information on ingredients*

· 3.2 Mixtures
· Description: Mixture of substances listed below with nonhazardous additions.

· Dangerous components:
Trade name: Bondmaster E32A

| CAS: 25068-38-6 | reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) |
| NLP: 500-033-5 | Xi R36/38; Xi R43; N R51/53 |
| | Aquatic Chronic 2; H411; Skin Irrit. 2; H315; Eye Irrit. 2; H319; Skin Sens. 1, H317 |
| CAS: 26761-45-5 | 2,3-Epoxypropyl-neodecanoate |
| EINECS: 247-979-2 | Xn R68; Xi R43; N R51/53 |
| | Acute Tox. 3; H331; Mut. 2; H341; Aquatic Chronic 2; H411; Skin Sens. 1, H317 |

50-100%

2.5-<10%

· Additional information: For the wording of the listed risk phrases refer to section 16.

SECTION 4: First aid measures

· 4.1 Description of first aid measures
  · General information:
    Immediately remove any clothing soiled by the product. Call a POISON CENTER or doctor/physician if you feel unwell.
  · After inhalation: Supply fresh air; consult doctor in case of complaints.
  · After skin contact: Immediately wash with water and soap and rinse thoroughly. If skin irritation continues, consult a doctor.
  · After eye contact: Flush the eye (hold eyelids apart) for 10 minutes with water. Remove any contact lenses. Continue rinsing. Get medical advice/attention.
  · After swallowing: Rinse out mouth and then drink plenty of water. If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

· 4.2 Most important symptoms and effects, both acute and delayed
  No further relevant information available.

· 4.3 Indication of any immediate medical attention and special treatment needed
  No further relevant information available.

SECTION 5: Firefighting measures

· 5.1 Extinguishing media
  · Suitable extinguishing agents:
    Foam
    Carbon dioxide
    Fire-extinguishing powder
    Use fire extinguishing methods suitable to surrounding conditions.
  · For safety reasons unsuitable extinguishing agents: Not applicable.

· 5.2 Special hazards arising from the substance or mixture
  Formation of toxic gases is possible during heating or in case of fire.
  Carbon monoxide and carbon dioxide
  Hydrocarbons
Safety data sheet  
according to 1907/2006/EC, Article 31

Printing date 24.10.2013  
Revision: 24.10.2013  
Version number 4

<table>
<thead>
<tr>
<th>Trade name: Bondmaster E32A</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>5.3 Advice for firefighters</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Protective equipment:</strong></td>
</tr>
<tr>
<td>Wear self-contained respiratory protective device.</td>
</tr>
<tr>
<td>Wear fully protective suit.</td>
</tr>
<tr>
<td><strong>Additional information</strong> Cool endangered receptacles with water spray.</td>
</tr>
</tbody>
</table>

**SECTION 6: Accidental release measures**

<table>
<thead>
<tr>
<th>6.1 Personal precautions, protective equipment and emergency procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use only in well-ventilated areas.</td>
</tr>
<tr>
<td>Avoid contact with spilled material.</td>
</tr>
<tr>
<td>Wear protective equipment. Keep unprotected persons away.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6.2 Environmental precautions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not allow to enter sewers/surface or ground water.</td>
</tr>
<tr>
<td>Inform respective authorities in case of seepage into water course or sewage system.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6.3 Methods and material for containment and cleaning up:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).</td>
</tr>
<tr>
<td>Send for recovery or disposal in suitable receptacles.</td>
</tr>
<tr>
<td>Pick up mechanically.</td>
</tr>
<tr>
<td>Dispose contaminated material as waste according to item 13.</td>
</tr>
<tr>
<td>Clean the affected area carefully; suitable cleaners are:</td>
</tr>
<tr>
<td>Warm water and cleansing agent</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6.4 Reference to other sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>See Section 7 for information on safe handling.</td>
</tr>
<tr>
<td>See Section 8 for information on personal protection equipment.</td>
</tr>
<tr>
<td>See Section 13 for disposal information.</td>
</tr>
</tbody>
</table>

**SECTION 7: Handling and storage**

<table>
<thead>
<tr>
<th>7.1 Precautions for safe handling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure good ventilation/exhaustion at the workplace.</td>
</tr>
<tr>
<td>Avoid contact with skin and eyes.</td>
</tr>
<tr>
<td>See Section 8 for information on personal protection equipment.</td>
</tr>
<tr>
<td><strong>Information about fire - and explosion protection:</strong> Keep ignition sources away - Do not smoke.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7.2 Conditions for safe storage, including any incompatibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Storage:</strong></td>
</tr>
<tr>
<td><strong>Requirements to be met by storerooms and receptacles:</strong></td>
</tr>
<tr>
<td>Store in cool, dry conditions in well sealed receptacles.</td>
</tr>
<tr>
<td>Provide ventilation for receptacles.</td>
</tr>
<tr>
<td><strong>Information about storage in one common storage facility:</strong></td>
</tr>
<tr>
<td>Do not store together with oxidizing and acidic materials.</td>
</tr>
<tr>
<td><strong>Further information about storage conditions:</strong> Protect from heat and direct sunlight.</td>
</tr>
<tr>
<td><strong>7.3 Specific end use(s)</strong></td>
</tr>
<tr>
<td>Adhesives</td>
</tr>
</tbody>
</table>

(Contd. on page 5)
### SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

- **8.1 Control parameters**
  - **Ingredients with limit values that require monitoring at the workplace:**
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
  - **DNELs**
    26761-45-5 2,3-epoxypropyl neodecanoate: Hazard via inhalation route: Long term exposure: 1,965 mg/m³, Most sensitive endpoint: Effect on fertility, Overall assessment factor: 150, Dose descriptor starting point: NOAEC.
  - **PNECs**
    26761-45-5 2,3-epoxypropyl neodecanoate: Aqua (freshwater): 0,0012 mg/L, Assessment factor: 1000, Extrapolation method: Assessment factor.
  - **Additional information:** The lists valid during the making were used as basis.

- **8.2 Exposure controls**
  - **Personal protective equipment:**
    - **General protective and hygienic measures:**
      Keep away from foodstuffs, beverages and feed.
      Do not eat, drink, smoke or sniff while working.
      Wash hands before breaks and at the end of work.
      Avoid contact with the eyes and skin.
      Use only in well-ventilated areas.
      In case of insufficient ventilation, wear suitable respiratory equipment.
      Ensure that washing facilities are available at the work place.
      Take off contaminated clothing and wash before reuse.
    - **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.
    - **Protection of hands:**
      - **Protective gloves**
        The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
  - **Material of gloves**

(Contd. on page 6)
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Nitrile rubber, NBR

- **Penetration time of glove material**
  The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**
  Tightly sealed goggles

- **Body protection:** Protective work clothing

### SECTION 9: Physical and chemical properties

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

  **General Information**

  - **Appearance:**
    - **Form:** Highly viscous
    - **Colour:** White
    - **Odour:** Weak, characteristic
    - **Odour threshold:** Not determined.
  
  - **pH-value:** Not determined.

- **Change in condition**
  - **Melting point/Melting range:** Undetermined.
  - **Boiling point/Boiling range:** Undetermined.

- **Flash point:** > 100 °C

- **Flammability (solid, gaseous):** Not applicable.

- **Ignition temperature:**
  - **Decomposition temperature:** Not determined.

- **Self-igniting:** Product is not self-igniting.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**
  - **Lower:** Not determined.
  - **Upper:** Not determined.

- **Vapour pressure:** Not determined.

- **Density at 20 °C:** 1.38 g/cm³

- **Relative density** Not determined.
SECTION 10: Stability and reactivity

10.1 Reactivity
10.2 Chemical stability
10.3 Possibility of hazardous reactions
Reacts with oxidizing agents.
Reacts with acids.
10.4 Conditions to avoid
High heat
10.5 Incompatible materials:
Keep away from acids.
Store away from oxidizing agents.
10.6 Hazardous decomposition products: No further information, refer to section 5.

SECTION 11: Toxicological information

25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)

<table>
<thead>
<tr>
<th>Component</th>
<th>Effect</th>
<th>Test Method</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irritation of skin</td>
<td>Skin corrosion/Irritation</td>
<td>4 h (rabbit) (OECD Guideline 404) OECD Guideline 404 (Acute Dermal Irritation / Corrosion)</td>
<td>Slightly irritating.</td>
</tr>
</tbody>
</table>
11.1 Information on toxicological effects

- Acute toxicity:

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalative LC50/4 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>26761-45-5 2,3-Epoxypropyl-neodecanoate</td>
<td>&gt;9600 mg/kg (rat)</td>
<td>&gt;3800 mg/kg (rabbit)</td>
<td>&gt;5 mg/l (rat)</td>
</tr>
</tbody>
</table>

- Primary irritant effect:
  - on the skin: Irritant to skin and mucous membranes.
  - on the eye: Irritating effect.
  - Sensitization: Sensitization possible through skin contact.

- Additional toxicological information:
  The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
  - Irritant
  - Sensitisation
  Contains epoxy constituents. May produce an allergic reaction.

- CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
  Possible risk of irreversible effects.

SECTION 12: Ecological information

- Aquatic toxicity:

<table>
<thead>
<tr>
<th>Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)</th>
<th>LC50 (96h)</th>
<th>1.75 mg/L (Fish) (OECD Guideline 203)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)</td>
<td>OECD Guideline 203 (Fish, Acute Toxicity Test), Oncorhynchus mykiss, 96 h.</td>
<td></td>
</tr>
</tbody>
</table>

- Persistence and degradability
  Based on previous experience, this product is inert and non-degradable.

- Bioaccumulative potential
  No further relevant information available.

- Mobility in soil
  No further relevant information available.

- Ecotoxicological effects:
  - Remark: Toxic for fish

- Additional ecological information:
  - General notes:
    Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
    Do not allow product to reach ground water, water course or sewage system.
    Danger to drinking water if even small quantities leak into the ground.
    Also poisonous for fish and plankton in water bodies.
    Toxic for aquatic organisms

- Results of PBT and vPvB assessment
  - PBT: Not applicable.
Safety data sheet
according to 1907/2006/EC, Article 31

Trade name: Bondmaster E32A

- vPvB: Not applicable.
- 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

- 13.1 Waste treatment methods
  - Recommendation
    Must not be disposed together with household garbage. Do not allow product to reach sewage system. Must be specially treated adhering to official regulations. Hand over to hazardous waste disposers.
  - European waste catalogue
    Hazardous waste
    The European Waste Catalogue (EWC) waste codes do not refer to product but to origin. The manufacturer is therefore unable to quote a waste code for products which are used in various industries. Any codes shown should be regarded as a recommendation to the user.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>08 00 00</td>
<td>WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS</td>
</tr>
<tr>
<td>08 04 00</td>
<td>wastes from MFSU of adhesives and sealants (including waterproofing products)</td>
</tr>
<tr>
<td>08 04 09*</td>
<td>waste adhesives and sealants containing organic solvents or other dangerous substances</td>
</tr>
</tbody>
</table>

- Uncleaned packaging:
  - Recommendation:
    Disposal must be made according to official regulations. Packagings that may not be cleansed are to be disposed of in the same manner as the product.

SECTION 14: Transport information

- 14.1 UN-Number
  - ADR, IMDG, IATA | UN3082 |

- 14.2 UN proper shipping name
  - ADR | 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700), neodecansäureglycidylester) |
  - IMDG | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700), neodecansäureglycidylester), MARINE POLLUTANT |
Safety data sheet  
according to 1907/2006/EC, Article 31  

Printing date 24.10.2013  
Revision: 24.10.2013  
Version number 4  

Trade name: Bondmaster E32A

· IATA  
  ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700), neodecansäureglycidylester)

· 14.3 Transport hazard class(es)  
  · ADR, IMDG, IATA

  
  · Class  
  9 Miscellaneous dangerous substances and articles.

  · Label  
  9

· 14.4 Packing group  
  · ADR, IMDG, IATA

  · Class  
  III

· 14.5 Environmental hazards:  
  Product contains environmentally hazardous substances: reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)

  · Marine pollutant:  
  Yes

  · Special marking (ADR):  
  Symbol (fish and tree)

  · Special marking (IATA):  
  Symbol (fish and tree)

· 14.6 Special precautions for user  
  Warning: Miscellaneous dangerous substances and articles.

  · Danger code (Kemler):  
  90

  · EMS Number:  
  F-A,S-F

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

· Transport/Additional information:

  · ADR

  · Limited quantities (LQ)  
  5L

  · Transport category  
  3

  · Tunnel restriction code  
  E

· SECTION 15: Regulatory information

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

  EU Regulation (EC) no.1907/2006 (REACH)
  EU regulation (EC) no 1272/2008 (CLP)
  EC DIRECTIVE 2008/98/EC (waste)
15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

LIMITATION OF LIABILITY

This document is only intended to be used as guidance as regards the risks of which we are aware that are associated with the product. Every individual who works with the product or in close proximity of it must receive suitable training. Individuals who come into contact with the product must be capable of using their own judgement as regards conditions or methods for handling, storing and using the product. Alfa Laval is not liable for demands, losses or damage of any kind that arise from flaws or deficiencies in this document or from using, handling, storing or disposing of the product unless it can be proven that Alfa Laval has acted in a grossly negligent manner. Beyond what has been agreed upon and specified in writing with Alfa Laval in the individual case, Alfa Laval makes no promises or assumes any liability, including but not limited to implicit guarantees regarding marketability or appropriateness in terms of both the information provided in this document and the product to which the information refers.

Relevant phrases

- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H331 Toxic if inhaled.
- H341 Suspected of causing genetic defects.
- H411 Toxic to aquatic life with long lasting effects.
- R36/38 Irritating to eyes and skin.
- R43 May cause sensitisation by skin contact.
- R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R68 Possible risk of irreversible effects.

Department issuing MSDS: sds.question@alfalaval.com

* Data compared to the previous version altered.