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

· 1.1 Product identifier
· Trade name: Zeniplex 1
· Article number: 9AB68Q
· 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 Lubricant
· 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 Not applicable.
   · Information concerning particular hazards for human and environment:
     The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
   · 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.
     The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (German GefStoffV).
· 2.3 Other hazards
   · Results of PBT and vPvB assessment
   · PBT: Not applicable.

(Contd. on page 2)
SECTION 3: Composition/information on ingredients

3.2 Mixtures

· Description:

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lubricant base stock (CAS-no 64742-53-6 and 64742-52-5)</td>
<td>&gt;75%</td>
</tr>
<tr>
<td>Aluminum-soap grease complexes (CAS-no 637-12-7 and 555-32-8)</td>
<td>&lt;14%</td>
</tr>
<tr>
<td>Sulphur-phosphorous EP additive</td>
<td>&lt;5%</td>
</tr>
<tr>
<td>9003-29-6 Polybutene substance with a Community workplace exposure limit</td>
<td>&lt;5%</td>
</tr>
<tr>
<td>Styrene-ester copolymer additive</td>
<td>&gt;1%</td>
</tr>
</tbody>
</table>

· Dangerous components: Void
· 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.
  In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
· 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:
  Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
  Remove contact lenses, if present and easy to do. Continue rinsing.
· After swallowing:
  Rinse out mouth and then drink plenty of water.
  Do NOT induce vomiting.
  Contact a doctor/physician.

4.2 Most important symptoms and effects, both acute and delayed

Rough skin. May cause skin dryness and irritation.

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:
  - Water haze
  - Foam
  - Fire-extinguishing powder
  - Carbon dioxide

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
  - During heating or in case of fire poisonous gases are produced.
  - Carbon monoxide and carbon dioxide
  - Hydrocarbons
  - Irritating organic vapors

- 5.3 Advice for firefighters
- Protective equipment:
  - Wear self-contained respiratory protective device.
  - Wear fully protective suit.

- Additional information Cool endangered receptacles with water spray.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures
  - Do not breathe vapour.
  - Avoid skin and eye contact
  - Particular danger of slipping on leaked/spilled product.
  - Wear protective equipment. Keep unprotected persons away.

- 6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.

- 6.3 Methods and material for containment and cleaning up:
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Pick up mechanically.
  - Send for recovery or disposal in suitable receptacles.

- 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 disposal information.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling
  - When using do not eat, drink or smoke.
  - Do not breathe vapour.
  - Avoid contact with skin and eyes.
  - Avoid release to the environment.
  - Keep receptacles tightly sealed.
 trade name: Zeniplex 1

See Section 8 for information on personal protection equipment.

- **Information about fire - and explosion protection:**
  Keep ignition sources away - Do not smoke.
  Protect against electrostatic charges.

- **7.2 Conditions for safe storage, including any incompatibilities**
  - **Storage:**
    - **Requirements to be met by storerooms and receptacles:**
      Store in cool, dry conditions in well sealed receptacles.
    - **Information about storage in one common storage facility:** Store away from oxidizing agents.
    - **Further information about storage conditions:**
      - Protect from heat and direct sunlight.
      - Store receptacle in a well ventilated area.

- **7.3 Specific end use(s)**
  - Lubricant
  - Restricted to professional users.

**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:**
  - 9003-29-6 Polybutene
    - **CONTROL PARAMETERS**
      - Short-term value: 3 mg/m³
      - Long-term value: 1 mg/m³
      - Oil mist, mineral working fluids

- **Additional information:** The lists valid during the making were used as basis.

- **8.2 Exposure controls**
  - **Personal protective equipment:**
    - **General protective and hygienic measures:**
      - Use only in well-ventilated areas.
      - Avoid contact with the eyes and skin.
      - Wash hands before breaks and at the end of work.
      - Ensure that washing facilities are available at the work place.
      - Keep away from foodstuffs, beverages and feed.
      - Do not carry product impregnated cleaning cloths in trouser pockets.
      - Take off contaminated clothing and wash before reuse.
    - **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.
    - **Protection of hands:**
      - 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. of page 3)

(Contd. on page 5)
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.

- **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:**
  - Safety glasses

- **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: Yellowish
    - Odour: Mineral-oil-like
    - Odour threshold: Not determined.
    - pH-value: Not determined.
  - **Change in condition**
    - Melting point/Melting range: Undetermined.
    - Boiling point/Boiling range: Undetermined.
  - **Flash point:** Not applicable.
  - **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:** <0.1 (38 °C / 100 F)
  - **Density at 25 °C:** <1 g/cm³
  - **Relative density:** Not determined.
  - **Vapour density:** >8 (air = 1)
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according to 1907/2006/EC, Article 31

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| · Evaporation rate | <1.0 (Ethyl ether = 1) |
| · Solubility in / Miscibility with water | Insoluble. |
| · Partition coefficient (n-octanol/water): | Not determined. |
| · Viscosity: | |
| Dynamic: | Not determined. |
| Kinematic: | Not determined. |
| · Solvent content: | |
| Organic solvents: | 0.0 % |
| Solids content: | 7.0 % |
| · 9.2 Other information | No further relevant information available. |

SECTION 10: Stability and reactivity

· 10.1 Reactivity The material is stable under recommended storage and handling conditions.
· 10.2 Chemical stability
· Thermal decomposition / conditions to be avoided:
  No decomposition if used according to specifications.
· 10.3 Possibility of hazardous reactions Reacts with strong oxidizing agents.
· 10.4 Conditions to avoid
  High heat
  Keep away from sources of ignition - No smoking.
· 10.5 Incompatible materials: Store away from oxidizing agents.
· 10.6 Hazardous decomposition products: No further information, refer to section 5.

SECTION 11: Toxicological information

· 11.1 Information on toxicological effects
· Acute toxicity:
· Primary irritant effect:
  · on the skin:
    Rough skin. May cause skin dryness and irritation.
    Prolonged and / or repeated skin contact may cause irritation
  · on the eye: Contact with eyes may result in mild irritation.
· Sensitization: No sensitizing effects known.
· Other information (about experimental toxicology):
  If the product is overheated, fumes and vapors may be irritating to the upper respiratory tract and lungs.
  Health studies have shown that petroleum hydrocarbons and synthetic lubricants are potential health risks, which vary from person to person. As a precaution any exposure to the product (liquid, vapor, smoke and fog) is to be minimized.
· Additional toxicological information:
  The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.
· Acute effects (acute toxicity, irritation and corrosivity)
  Low acute toxicity, but aspiration following ingestion and vomiting may cause severe and potentially fatal chemical pneumonia.
  Ingestion of large amounts can cause nausea and diarrhea.
  · Repeated dose toxicity Repeated exposure may cause skin dryness or cracking.

SECTION 12: Ecological information

· 12.1 Toxicity
  · Aquatic toxicity: No further relevant information available.
· 12.2 Persistence and degradability No further relevant information available.
· 12.3 Bioaccumulative potential No further relevant information available.
· 12.4 Mobility in soil No further relevant information available.
· Additional ecological information:
  · General notes:
    Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
    Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
  · 12.5 Results of PBT and vPvB assessment
    · PBT: Not applicable.
    · 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.
· European waste catalogue
  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.
· 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, ADN, IMDG, IATA Void
· 14.2 UN proper shipping name
  · ADR, ADN, IMDG, IATA Void
Safety data sheet
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- 14.3 Transport hazard class(es)
  - ADR, ADN, IMDG, IATA
  - Class Void

- 14.4 Packing group
  - ADR, IMDG, IATA
  - Void

- 14.5 Environmental hazards:
  - Marine pollutant: No

- 14.6 Special precautions for user
  - Not applicable.

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

*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.

- Department issuing MSDS: MACC - Materials & Chemistry Centre
- * Data compared to the previous version altered.