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

1.1 Product identifier
   Trade name
   Armaflex Ultima SF990

1.2 Relevant identified uses of the substance or mixture and uses advised against
   Relevant identified uses of the substance or mixture
   Adhesive for processing Armaflex Ultima and all other synthetic rubber based Armaprene materials
   Uses advised against
   No data available.

1.3 Details of the supplier of the safety data sheet
   Address
   Armacell GmbH
   Robert-Bosch-Straße 10
   48153 Münster
   Telephone no. +49 (0) 251 - 7603-200
   Fax no. +49 (0) 251 - 7603-561
   e-mail info.de@armacell.com
   Information provided by / telephone
   Dr. Heribert Quante, Tel.: +49 (0) 251 - 7603-227
   Advice on Safety Data Sheet
   heribert.quante@armacell.com

1.4 Emergency telephone number
   For medical advice (in German and English):
   +49 (0)551 192 40 (Giftinformationszentrum Nord)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Classification in accordance with Regulation (EC) No 1272/2008 (CLP)
   Aquatic Chronic 3; H412
   Classification information
   This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:
   Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP
   Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3, 4 and 5 of Annex I to CLP.

2.2 Label elements
   Labelling according to Regulation (EC) No 1272/2008 (CLP Regulation)
   Hazard pictograms
   -
   Signal word
   -
   Hazard statement(s)
   H412 Harmful to aquatic life with long lasting effects.
   Hazard statements (EU)
   EUH208 Contains reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC no. 220-239-6] (3:1). May produce an allergic reaction.
   Precautionary statement(s)
   P273 Avoid release to the environment.
   P501 Dispose of contents/container to a facility in accordance with local and national regulations.

2.3 Other hazards
   PBT assessment
   No data available.
   vPvB assessment
   No data available.
SECTION 3: Composition/information on ingredients

3.1 Substances
Not applicable. The product is not a substance.

3.2 Mixtures
Hazardous ingredients

<table>
<thead>
<tr>
<th>No</th>
<th>Substance name</th>
<th>CAS / EC / Index / REACH no</th>
<th>Classification (EC) 1272/2008 (CLP)</th>
<th>Concentration</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>zinc oxide</td>
<td>1314-13-2 215-222-5 030-013-00-7 01-2119463881-32</td>
<td>Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt; 1.00 - &lt; 2.50</td>
<td>%-b.w.</td>
</tr>
<tr>
<td>2</td>
<td>reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)</td>
<td>55965-84-9 - 613-167-00-5 -</td>
<td>Acute Tox. 3; H301 Acute Tox. 3; H311 Acute Tox. 3; H331 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 Eye Dam. 1; H318 Skin Corr. 1B; H314 Skin Sens. 1; H317</td>
<td>&lt; 0.0015</td>
<td>% -b.w.</td>
</tr>
</tbody>
</table>

Full Text for all H-phrases and EUH-phrases: pls. see section 16
(1) Aberrant from/in addition to the classification set out in Annex VI, this substance is classified according to European Regulation (EC) No 1272/2008 (CLP), Article 4 (3), paragraph 2.

<table>
<thead>
<tr>
<th>No</th>
<th>Note</th>
<th>Specific concentration limits</th>
<th>M-factor (acute)</th>
<th>M-factor (chronic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-</td>
<td>-</td>
<td>M = 1</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>-</td>
<td>Skin Sens. 1; H317: C &gt;= 0.0015% Eye Irrit. 2; H319: C &gt;= 0.06% Skin Irrit. 2; H315: C &gt;= 0.06% Skin Corr. 1B; H314: C &gt;= 0.6%</td>
<td>M = 10</td>
<td>M = 10</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1 Description of first aid measures
General information
In case of persistent adverse effects, consult a physician. Change contaminated, saturated clothing.

After inhalation
When inhaled remove to fresh air and seek medical aid.

After skin contact
When in contact with the skin, clean with soap and water.

After eye contact
Remove contact lenses, irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart and seek medical advice.

After ingestion
Do not induce vomiting. Call a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed
No data available.

4.3 Indication of any immediate medical attention and special treatment needed
No data available.

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media
Water spray jet; Carbon dioxide; Dry chemical extinguisher; Foam

Unsuitable extinguishing media
High power water jet
5.2 **Special hazards arising from the substance or mixture**

In the event of fire, the following can be released: Zinc oxides

5.3 **Advice for firefighters**

Use self-contained breathing apparatus. Wear protective clothing. Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

### SECTION 6: Accidental release measures

6.1 **Personal precautions, protective equipment and emergency procedures**

For non-emergency personnel

Avoid contact with skin, eyes and clothing. Refer to protective measures listed in sections 7 and 8.

For emergency responders

No data available. Personal protective equipment (PPE) - see Section 8.

6.2 **Environmental precautions**

Do not discharge into the drains/surface waters/groundwater. Do not discharge into the subsoil/soil. In case of entry into waterways, soil or drains, inform the responsible authorities.

6.3 **Methods and material for containment and cleaning up**

Pick up rest with absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr). When picked up, treat material as prescribed under heading "Disposal considerations".

6.4 **Reference to other sections**

No data available.

### SECTION 7: Handling and storage

7.1 **Precautions for safe handling**

Advice on safe handling

No special measures necessary if stored and handled as prescribed.

General protective and hygiene measures

Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages. Wash hands before breaks and after work.

Advice on protection against fire and explosion

No special measures necessary.

7.2 **Conditions for safe storage, including any incompatibilities**

Technical measures and storage conditions

Keep container tightly closed in a cool, well-ventilated place. Protect from heat and direct sunlight.

Storage stability

Value | 6 months

Requirements for storage rooms and vessels

Containers which are opened must be carefully closed and kept upright to prevent leakage.

7.3 **Specific end use(s)**

No data available.

### SECTION 8: Exposure controls/personal protection

8.1 **Control parameters**

**DNEL, DMEL and PNEC values**

<table>
<thead>
<tr>
<th>No</th>
<th>Substance name</th>
<th>Route of exposure</th>
<th>Exposure time</th>
<th>Effect</th>
<th>CAS / EC no</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>zinc oxide</td>
<td>dermal</td>
<td>Long term (chronic)</td>
<td>systemic</td>
<td>1314-13-2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>215-222-5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalative</td>
<td>Long term (chronic)</td>
<td>systemic</td>
<td>5</td>
</tr>
</tbody>
</table>

with reference to: Zn

Comments: insoluble
8.2 Exposure controls

Appropriate engineering controls

No data available.

Personal protective equipment

Respiratory protection

If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn. In case of insufficient ventilation and during spray application respiratory protection necessary. In case of aerosol and mist formation, take appropriate measures for breathing protection in the event workplace threshold values are not specified.

Eye / face protection

Safety glasses (EN 166)

Hand protection

Sufficient protection is given wearing suitable protective gloves checked according to i.e. EN 374, in the event of risk of skin contact with the product. Before use, the protective gloves should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer’s instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves.

Appropriate Material

- chloroprene
- nitrile rubber
- butyl rubber

Other

Normal chemical work clothing.

Environmental exposure controls

No data available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form/Colour

- liquid
- blue

Odour

- characteristic
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH value</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>Value</td>
</tr>
<tr>
<td>Melting point / melting range</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition point / decomposition range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower flammability or explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper flammability or explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Value</td>
</tr>
<tr>
<td>Reference temperature</td>
<td>50 °C</td>
</tr>
<tr>
<td>Vapour density</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Density</td>
<td>Value</td>
</tr>
<tr>
<td>Reference temperature</td>
<td>20 °C</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
</tbody>
</table>

### 9.2 Other information

**Other information**

No data available.

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

Dangerous reactions are not expected if the product is handled according to its intended use.
10.2 Chemical stability
Stable under recommended storage and handling conditions (See section 7).

10.3 Possibility of hazardous reactions
None, if handled according to order.

10.4 Conditions to avoid
No data available.

10.5 Incompatible materials
No data available.

10.6 Hazardous decomposition products
None, if handled according to intended use.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

<table>
<thead>
<tr>
<th>Acute oral toxicity</th>
<th>Substance name</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>zinc oxide</td>
<td>1314-13-2</td>
<td>215-222-5</td>
</tr>
<tr>
<td>LD50</td>
<td>&gt;</td>
<td>5000 mg/kg bodyweight</td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>rat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Method</td>
<td>OECD 401</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td>ECHA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Acute dermal toxicity</th>
<th>Substance name</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>zinc oxide</td>
<td>1314-13-2</td>
<td>215-222-5</td>
</tr>
<tr>
<td>LD50</td>
<td>&gt;</td>
<td>2000 mg/kg bodyweight</td>
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</tr>
<tr>
<td>Species</td>
<td>rat</td>
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<td></td>
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<tr>
<td>Method</td>
<td>OECD 402</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td>ECHA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Acute inhalational toxicity</th>
<th>Substance name</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>zinc oxide</td>
<td>1314-13-2</td>
<td>215-222-5</td>
</tr>
<tr>
<td>LC50</td>
<td>&gt;</td>
<td>5.7 mg/l</td>
<td></td>
</tr>
<tr>
<td>Duration of exposure</td>
<td>4</td>
<td>4 h</td>
<td></td>
</tr>
<tr>
<td>State of aggregation</td>
<td>Dust/mist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>rat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Method</td>
<td>OECD 403</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td>ECHA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skin corrosion/irritation</th>
<th>Substance name</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>zinc oxide</td>
<td>1314-13-2</td>
<td>215-222-5</td>
</tr>
<tr>
<td>Species</td>
<td>rabbit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Method</td>
<td>OECD 404</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td>ECHA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation</td>
<td>non-irritant</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Serious eye damage/irritation</th>
<th>Substance name</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>zinc oxide</td>
<td>1314-13-2</td>
<td>215-222-5</td>
</tr>
<tr>
<td>Species</td>
<td>rabbit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Method</td>
<td>OECD 405</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td>ECHA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation</td>
<td>non-irritant</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Respiratory or skin sensitisation

<table>
<thead>
<tr>
<th>No</th>
<th>Substance name</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>zinc oxide</td>
<td>1314-13-2</td>
<td>215-222-5</td>
</tr>
</tbody>
</table>

**Route of exposure**
- Respiratory tract

**Source**
- ECHA

**Evaluation**
- non-sensitizing

**Evaluation/classification**
- Based on available data, the classification criteria are not met.

**Route of exposure**
- Skin

**Species**
- Guinea pig

**Method**
- OECD 406

**Source**
- ECHA

**Evaluation**
- non-sensitizing

**Evaluation/classification**
- Based on available data, the classification criteria are not met.

### Germ cell mutagenicity

No data available

### Reproduction toxicity

No data available

### Carcinogenicity

No data available

### STOT - single exposure

No data available

### STOT - repeated exposure

No data available

### Aspiration hazard

No data available

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Inhalation of vapours may lead to headache, drowsiness and dizziness.

### SECTION 12: Ecological information

#### 12.1 Toxicity

**Toxicity to fish (acute)**

No data available

**Toxicity to fish (chronic)**

No data available

**Toxicity to Daphnia (acute)**

No data available

**Toxicity to Daphnia (chronic)**

<table>
<thead>
<tr>
<th>No</th>
<th>Substance name</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>zinc oxide</td>
<td>1314-13-2</td>
<td>215-222-5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NOEC</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>82 µg/l</td>
<td>7 day(s)</td>
<td></td>
</tr>
</tbody>
</table>

**Species**
- Daphnia magna

<table>
<thead>
<tr>
<th>pH</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0</td>
<td>CSR</td>
</tr>
</tbody>
</table>

**Toxicity to algae (acute)**

<table>
<thead>
<tr>
<th>No</th>
<th>Substance name</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>zinc oxide</td>
<td>1314-13-2</td>
<td>215-222-5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EC50</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.042 mg/l</td>
<td>72 h</td>
<td></td>
</tr>
</tbody>
</table>

**Species**
- Algae

**Source**
- Manufacturer
Toxicity to algae (chronic)

<table>
<thead>
<tr>
<th>No</th>
<th>Substance name</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>zinc oxide</td>
<td>1314-13-2</td>
<td>215-222-5</td>
</tr>
</tbody>
</table>

- **NOEC**: 19 µg/l
- **Duration of exposure**: 7 day(s)
- **Species** with reference to Pseudokirchneriella subcapitata
- **pH** 8.0
- **Source**: CSR

Bacteria toxicity

- No data available.

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

<table>
<thead>
<tr>
<th>Results of PBT and vPvB assessment</th>
<th>PBT assessment</th>
<th>vPvB assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available.</td>
<td>No data available.</td>
<td></td>
</tr>
</tbody>
</table>

12.6 Other adverse effects

- No data available.

12.7 Other information

- Other information
  - Do not discharge into the drains or waters and do not store on public depositories.
  - Do not discharge product unmonitored into the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

- **Product**
  - Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

- **Packaging**
  - Residuals must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.

SECTION 14: Transport information

14.1 Transport ADR/RID/ADN

- The product is not subject to ADR/RID/ADN regulations.

14.2 Transport IMDG

- The product is not subject to IMDG regulations.

14.3 Transport ICAO-TI / IATA

- The product is not subject to ICAO-TI / IATA regulations.

14.4 Other information

- No data available.

14.5 Environmental hazards

- Information on environmental hazards, if relevant, please see 14.1 - 14.3.

14.6 Special precautions for user

- No data available.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

- Not relevant
SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances considered as substances requiring authorisation as listed on Annex XIV of the REACH regulation (EC) 1907/2006.

REACH candidate list of substances of very high concern (SVHC) for authorisation

According to available data and the information provided by preliminary suppliers, the product does not contain substances that are considered substances meeting the criteria for inclusion in annex XIV (List of Substances Subject to Authorisation) as laid down in Article 57 and article 59 of REACH (EC) 1907/2006.


The product is considered being subject to REACH regulation (EC) 1907/2006 annexe XVII.

No

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances

This product is not subject to Part 1 or 2 of Annex I.

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this mixture.

SECTION 16: Other information

Further information

Authors responsible for the compilation of the material safety data sheet: UMCO GmbH - D-21107 Hamburg, Georg-Wilhelm-Strasse 187, Tel.: +49(40)555 546 300, Fax: +49(40)555 546 357, e-mail: umco@umco.de.

The information is based on our current knowledge however it does not represent a guarantee of product properties nor does it create any legal obligation.

Sources of key data used to compile the data sheet:


National Threshold Limit Values of the corresponding countries as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding chapter.

Full text of the H- and EUH- phrases drawn up in sections 2 and 3 (provided not already drawn up in these sections)

H301 Toxic if swallowed.

H311 Toxic in contact with skin.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H318 Explosive when dry.

H331 Toxic if inhaled.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

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