SAFETY DATA SHEET
Polyurethane Resin UR5638, Part A

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

1.1. Product identifier
Product name Polyurethane Resin UR5638, Part A
Product number UR5638A, EUR5638RP250G, EUR5638K5K, ZE

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses Resin.
Uses advised against No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet
Supplier ELECTROLUBE. A division of HK WENTWORTH LTD
ASHBY PARK, COALFIELD WAY,
ASHBY DE LA ZOUCH, LEICESTERSHIRE LE65 1JR
UNITED KINGDOM
+44 (0)1530 419600
+44 (0)1530 416640
info@hkw.co.uk

1.4. Emergency telephone number
Emergency telephone +44 1865 407333

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification (EC 1272/2008)
Physical hazards Not Classified
Health hazards Acute Tox. 4 - H302 Skin Sens. 1 - H317
Environmental hazards Aquatic Chronic 3 - H412

2.2. Label elements
Pictogram
Signal word Warning
Hazard statements H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.
Polyurethane Resin UR5638, Part A

Precautionary statements

P261 Avoid breathing vapour/ spray.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301+P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.
P501 Dispose of contents/ container in accordance with national regulations.

Contains

Propane-1,2-diol, propoxylated, Reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate

Supplementary precautionary statements

P264 Wash contaminated skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P302+P352 IF ON SKIN: Wash with plenty of water.
P362+P364 Take off contaminated clothing and wash it before reuse.

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

<table>
<thead>
<tr>
<th>Propane-1,2-diol, propoxylated</th>
<th>30-60%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 25322-69-4</td>
<td>EC number: 500-039-8</td>
</tr>
<tr>
<td>Classification</td>
<td>Acute Tox. 4 - H302</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate</th>
<th>&lt;1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: ---</td>
<td>EC number: 915-687-0</td>
</tr>
<tr>
<td>REACH registration number: 01-2119491304-40-XXXX</td>
<td></td>
</tr>
<tr>
<td>M factor (Acute) = 1</td>
<td>M factor (Chronic) = 1</td>
</tr>
<tr>
<td>Classification</td>
<td></td>
</tr>
<tr>
<td>Skin Sens. 1A - H317</td>
<td></td>
</tr>
<tr>
<td>Aquatic Acute 1 - H400</td>
<td></td>
</tr>
<tr>
<td>Aquatic Chronic 1 - H410</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1-Methoxy-2-propanol</th>
<th>&lt;1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 107-98-2</td>
<td>EC number: 203-539-1</td>
</tr>
<tr>
<td>REACH registration number: 01-2119457435-35-XXXX</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flam. Liq. 3 - H226</td>
</tr>
<tr>
<td>STOT SE 3 - H336</td>
</tr>
</tbody>
</table>
Polyurethane Resin UR5638, Part A

**ethyl formate**

| CAS number: 109-94-4 | EC number: 203-721-0 |

**Classification**

- Flam. Liq. 2 - H225
- Acute Tox. 4 - H302
- Acute Tox. 4 - H332
- Eye Irrit. 2 - H319
- STOT SE 3 - H335

**Ethanol**

| CAS number: 64-17-5 | EC number: 200-578-6 |

**Classification**

- Flam. Liq. 2 - H225

The full text for all hazard statements is displayed in Section 16.

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**General information**

Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.

**Inhalation**

Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.

**Ingestion**

Rinse mouth thoroughly with water. Remove any dentures. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.

**Skin contact**

It is important to remove the substance from the skin immediately. In the event of any sensitisation symptoms developing, ensure further exposure is avoided. Remove contamination with soap and water or recognised skin cleansing agent. Get medical attention if symptoms are severe or persist after washing.

**Eye contact**

Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.

**Protection of first aiders**

First aid personnel should wear appropriate protective equipment during any rescue. If it is suspected that volatile contaminants are still present around the affected person, first aid personnel should wear an appropriate respirator or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

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

**General information**

See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Polyurethane Resin UR5638, Part A

Inhalation
Prolonged inhalation of high concentrations may damage respiratory system.

Ingestion
May cause sensitisation or allergic reactions in sensitive individuals. May cause discomfort if swallowed. Stomach pain. Nausea, vomiting.

Skin contact
May cause skin sensitisation or allergic reactions in sensitive individuals. Prolonged contact may cause dryness of the skin.

Eye contact
May cause temporary eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor
Treat symptomatically. May cause sensitisation or allergic reactions in sensitive individuals.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

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

Specific hazards
Containers can burst violently or explode when heated, due to excessive pressure build-up. This product is toxic.

Hazardous combustion products
Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours.

5.3. Advice for firefighters

Protective actions during firefighting
Avoid breathing fire gases or vapours. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

Special protective equipment for firefighters
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions
No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material. Avoid contact with skin and eyes.

6.2. Environmental precautions

Environmental precautions
Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

6.3. Methods and material for containment and cleaning up
Polyurethane Resin UR5638, Part A

Methods for cleaning up  Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Provide adequate ventilation. Approach the spillage from upwind. Small Spillages: If the product is soluble in water, dilute the spillage with water and mop it up. Alternatively, or if it is not water-soluble, absorb the spillage with an inert, dry material and place it in a suitable waste disposal container. Large Spillages: If leakage cannot be stopped, evacuate area. Flush spilled material into an effluent treatment plant, or proceed as follows. Contain and absorb spillage with sand, earth or other non-combustible material. Place waste in labelled, sealed containers. Clean contaminated objects and areas thoroughly, observing environmental regulations. The contaminated absorbent may pose the same hazard as the spilled material. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dangerous for the environment. Do not empty into drains. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

6.4. Reference to other sections  For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions  Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimise spills. Keep container tightly sealed when not in use. Avoid the formation of mists. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Advice on general occupational hygiene  Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions  Store in accordance with local regulations. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Bund storage facilities to prevent soil and water pollution in the event of spillage. The storage area floor should be leak-tight, jointless and not absorbent.

Storage class  Toxic storage.

7.3. Specific end use(s)

Specific end use(s)  The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

1-Methoxy-2-propanol
Long-term exposure limit (8-hour TWA): WEL 100 ppm 375 mg/m³
Short-term exposure limit (15-minute):  WEL 150 ppm 560 mg/m³
Sk
ethyl formate

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Polyurethane Resin UR5638, Part A

Long-term exposure limit (8-hour TWA): WEL 100 ppm  308 mg/m³
Short-term exposure limit (15-minute):  WEL 150 ppm  462 mg/m³

Ethanol
Long-term exposure limit (8-hour TWA): WEL 1000 ppm  1920 mg/m³
WEL = Workplace Exposure Limit
Sk = Can be absorbed through the skin.

8.2. Exposure controls

Protective equipment

Appropriate engineering controls
Provide adequate ventilation. Personal, workplace environment or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimise exposure.

Eye/face protection
Eye/face protection complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.

Hand protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

Other skin and body protection
Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.

Hygiene measures
Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Preventive industrial medical examinations should be carried out. Warn cleaning personnel of any hazardous properties of the product.

Respiratory protection
Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is ‘CE’-marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with European Standard EN14387. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

Environmental exposure controls
Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
Polyurethane Resin UR5638, Part A

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid.</td>
</tr>
<tr>
<td>Colour</td>
<td>Colourless.</td>
</tr>
<tr>
<td>Odour</td>
<td>Characteristic.</td>
</tr>
<tr>
<td>pH</td>
<td>Not available.</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Initial boiling point and range</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Bulk density</td>
<td>0.99 kg/l</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>775 mPa s @ 23°C/73.4°F</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not considered to be explosive.</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Does not meet the criteria for classification as oxidising.</td>
</tr>
</tbody>
</table>

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability

Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions

No potentially hazardous reactions known.

10.4. Conditions to avoid

Conditions to avoid

There are no known conditions that are likely to result in a hazardous situation.

10.5. Incompatible materials

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Polyurethane Resin UR5638, Part A

Materials to avoid
No specific material or group of materials is likely to react with the product to produce a hazardous situation.

10.6. Hazardous decomposition products
Hazardous decomposition products
Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity - oral
Notes (oral LD₅₀)
Acute Tox. 4 - H302 Harmful if swallowed.
ATE oral (mg/kg)
1,020.41

Acute toxicity - dermal
Notes (dermal LD₅₀)
Based on available data the classification criteria are not met.

Acute toxicity - inhalation
Notes (inhalation LC₅₀)
Based on available data the classification criteria are not met.

Skin corrosion/irritation
Animal data
Based on available data the classification criteria are not met.

Serious eye damage/irritation
Serious eye damage/irritation
Based on available data the classification criteria are not met.

Respiratory sensitisation
Respiratory sensitisation
Based on available data the classification criteria are not met.

Skin sensitisation
Skin sensitisation
May cause skin sensitisation or allergic reactions in sensitive individuals.

Germ cell mutagenicity
Genotoxicity - in vitro
Based on available data the classification criteria are not met.

Carcinogenicity
Carcinogenicity
Based on available data the classification criteria are not met.

IARC carcinogenicity
Contains a substance/a group of substances which may cause cancer. IARC Group 1 Carcinogenic to humans.

Reproductive toxicity
Reproductive toxicity - fertility
Based on available data the classification criteria are not met.

Reproductive toxicity - development
Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure
STOT - single exposure
Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure
STOT - repeated exposure
Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard
Aspiration hazard
Based on available data the classification criteria are not met.
Polyurethane Resin UR5638, Part A

General information
The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation
Prolonged inhalation of high concentrations may damage respiratory system.

Ingestion
May cause sensitisation or allergic reactions in sensitive individuals. May cause discomfort if swallowed. Stomach pain. Nausea, vomiting.

Skin contact
May cause skin sensitisation or allergic reactions in sensitive individuals. Prolonged contact may cause dryness of the skin.

Eye contact
May cause temporary eye irritation.

Route of entry
Ingestion Inhalation Skin and/or eye contact

Target organs
No specific target organs known.

Medical considerations
Skin disorders and allergies.

Toxicological information on ingredients.

Propane-1,2-diol, propoxylated

<table>
<thead>
<tr>
<th>Acute toxicity - oral</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE oral (mg/kg)</td>
</tr>
<tr>
<td>500.0</td>
</tr>
</tbody>
</table>

Reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate

<table>
<thead>
<tr>
<th>Acute toxicity - oral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity oral (LD₅₀ mg/kg)</td>
</tr>
<tr>
<td>3,230.0</td>
</tr>
</tbody>
</table>

Species
Rat

ATE oral (mg/kg)
3,230.0

1-Methoxy-2-propanol

<table>
<thead>
<tr>
<th>Acute toxicity - oral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity oral (LD₅₀ mg/kg)</td>
</tr>
<tr>
<td>3,739.0</td>
</tr>
</tbody>
</table>

Species
Rat

Notes (oral LD₅₀)
LD₅₀ 3739 mg/kg, Oral, Rat REACH dossier information. Based on available data the classification criteria are not met.

ATE oral (mg/kg)
3,739.0

<table>
<thead>
<tr>
<th>Acute toxicity - dermal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notes (dermal LD₅₀)</td>
</tr>
<tr>
<td>LD₅₀ &gt;2000 mg/kg, Dermal, Rat REACH dossier information. Based on available data the classification criteria are not met.</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation

Animal data
Dose: 0.5 mL, 4 hours, Rabbit Erythema/eschar score: No erythema (0). Oedema score: No oedema (0). REACH dossier information. Based on available data the classification criteria are not met.

Skin sensitisation
Polyurethane Resin UR5638, Part A

Skin sensitisation
Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising. REACH dossier information. Based on available data the classification criteria are not met.

Germ cell mutagenicity
Gene mutation: Negative. REACH dossier information. Based on available data the classification criteria are not met.

Genotoxicity - in vitro
Chromosome aberration: Negative. REACH dossier information. Based on available data the classification criteria are not met.

Genotoxicity - in vivo
Gene mutation: Negative. REACH dossier information. Based on available data the classification criteria are not met.

Carcinogenicity
NOEL 3000 ppm, Inhalation, Mouse REACH dossier information. Based on available data the classification criteria are not met.

Reproductive toxicity
Two-generation study - NOAEL 1000 ppm, Inhalation, Rat F1 REACH dossier information. Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure
STOT SE 3 - H336 May cause drowsiness or dizziness. REACH dossier information.

Target organs
Central nervous system Brain

Specific target organ toxicity - repeated exposure
NOAEL 919 mg/kg/day, Oral, Rat REACH dossier information. Based on available data the classification criteria are not met.

Acute toxicity - oral
ATE oral (mg/kg) 500.0

Acute toxicity - Inhalation
ATE inhalation (gases ppm) 4,500.0
ATE inhalation (vapours mg/l) 11.0
ATE inhalation (dusts/mists mg/l) 1.5

Ethanol
Toxicological effects
Not regarded as a health hazard under current legislation.

Acute toxicity - oral
Notes (oral LD₅₀) LD₅₀ 10470 mg/kg, Oral, Rat REACH dossier information. Based on available data the classification criteria are not met.

Acute toxicity - Inhalation
Notes (inhalation LC₅₀) LD₅₀ 124.7 mg/l, Inhalation, Rat REACH dossier information. Based on available data the classification criteria are not met.
Polyurethane Resin UR5638, Part A

**Skin corrosion/irritation**  
**Animal data**  
Dose: 0.2 mL, 24 hours, Rabbit Primary dermal irritation index: 0  
REACH dossier information. Based on available data the classification criteria are not met.

**Skin sensitisation**  
Local Lymph Node Assay (LLNA) - Mouse: Not sensitising. REACH dossier information. Based on available data the classification criteria are not met.

**Germ cell mutagenicity**  
**Genotoxicity - in vitro**  
Gene mutation: Negative. REACH dossier information. Based on available data the classification criteria are not met.

**Genotoxicity - in vivo**  
Chromosome aberration: Negative. REACH dossier information. Based on available data the classification criteria are not met.

**Carcinogenicity**  
**IARC carcinogenicity**  
IARC Group 1  
Carcinogenic to humans.

**Reproductive toxicity**  
**Reproductive toxicity - fertility**  
Two-generation study - NOAEL 15% , Oral, Mouse REACH dossier information. Based on available data the classification criteria are not met.

**Reproductive toxicity - development**  
Maternal toxicity: - NOAEL: 16000 ppm, Inhalation, Rat REACH dossier information. Based on available data the classification criteria are not met.

**Specific target organ toxicity - repeated exposure**  
**STOT - repeated exposure**  
LOAEL ~4000 mg/kg, Oral, Rat REACH dossier information. Based on available data the classification criteria are not met.

### SECTION 12: Ecological Information

#### 12.1. Toxicity

**Aquatic Chronic 3** - H412  
Harmful to aquatic life with long lasting effects.

**Ecological information on ingredients.**

**Reaction mass of bis(1,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,6,6-pentamethyl-4-piperidyl sebacate**

**Acute aquatic toxicity**  
**LE(C)ₜ**  
0.1 < L(E)C₅₀ ≤ 1

**M factor (Acute)**  
1

**Chronic aquatic toxicity**  
**M factor (Chronic)**  
1

**1-Methoxy-2-propanol**

**Acute toxicity - fish**  
LC₅₀, 96 hours: 20800 mg/l, Pimephales promelas (Fat-head Minnow)  
REACH dossier information.

**Acute toxicity - aquatic invertebrates**  
LC₅₀, 48 hours: 21100 mg/l, Daphnia magna  
REACH dossier information.

**Acute toxicity - aquatic plants**  
EC₅₀, 7 days: >1000 mg/l, Selenastrum capricornutum  
REACH dossier information.
Polyurethane Resin UR5638, Part A

Ethanol

Toxicity

Based on available data the classification criteria are not met.

Acute toxicity - fish

$LC_{50}$, 96 hours: 14200 mg/l, Pimephales promelas (Fat-head Minnow)

Acute toxicity - aquatic invertebrates

$LC_{50}$, 48 hours: 5012 mg/l, Ceriodaphnia dubia

Acute toxicity - aquatic plants

$EC_{50}$, 72 hours: 11.5 mg/l, Chlorella vulgaris

Chronic toxicity - aquatic invertebrates

$NOEC$, 9 days: 9.6 mg/l, Daphnia magna

12.2. Persistence and degradability

Persistence and degradability

The degradability of the product is not known.

Ecological information on ingredients.

1-Methoxy-2-propanol

Persistence and degradability

The substance is readily biodegradable.

Phototransformation

Water - $DT_{50}$: 3.1 hours
REACH dossier information.

Biodegradation

Water - Degradation 96%: 28 days
REACH dossier information.

Ethanol

Persistence and degradability

The substance is readily biodegradable.

Biodegradation

Water - Degradation 74%: 10 days

Chemical oxygen demand

1.99 g O$_2$/g substance

12.3. Bioaccumulative potential

Bioaccumulative potential

No data available on bioaccumulation.

Partition coefficient

Not available.

Ecological information on ingredients.

1-Methoxy-2-propanol

Bioaccumulative potential

No data available on bioaccumulation.

Partition coefficient

$\log$ Pow: <1 REACH dossier information.

Ethanol

Bioaccumulative potential

Bioaccumulation is unlikely.

Partition coefficient

$\log$ Pow: -0.35

12.4. Mobility in soil
Polyurethane Resin UR5638, Part A

Mobility
No data available.

Ecological information on ingredients.

1-Methoxy-2-propanol

Mobility
Mobile.
Surface tension
70.7 mN/m @ 20°C

Ethanol

Mobility
The product is soluble in water.
Surface tension
24.5 mN/m @ 20°C/68°F

12.5. Results of PBT and vPvB assessment

Ecological information on ingredients.

1-Methoxy-2-propanol

Results of PBT and vPvB assessment
This substance is not classified as PBT or vPvB according to current EU criteria.

Ethanol

Results of PBT and vPvB assessment
This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects
None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information
The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal methods
Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

SECTION 14: Transport information

General
The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number
Not applicable.

14.2. UN proper shipping name
Polyurethane Resin UR5638, Part A

Not applicable.

14.3. Transport hazard class(es)
No transport warning sign required.

14.4. Packing group
Not applicable.

14.5. Environmental hazards
Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user
Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable.

SECTION 15: Regulatory information

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

National regulations
Health and Safety at Work etc. Act 1974 (as amended).
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].
EH40/2005 Workplace exposure limits.

EU legislation
Dangerous Preparations Directive 1999/45/EC.
Dangerous Substances Directive 67/548/EEC.

15.2. Chemical safety assessment
No chemical safety assessment has been carried out.

SECTION 16: Other information

Classification procedures according to Regulation (EC) 1272/2008

Training advice
Read and follow manufacturer's recommendations. Only trained personnel should use this material.

Issued by
Bethan Massey

Revision date
26/09/2016

Revision
0
Polyurethane Resin UR5638, Part A

SDS number 428

Hazard statements in full
H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.
SAFETY DATA SHEET
Polyurethane Resin UR5638, Part B

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

1.1. Product identifier

Product name  Polyurethane Resin UR5638, Part B

Product number  UR5638B, EUR5638RP250G, EUR5638K5K, ZE

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

Identified uses  Resin.

Uses advised against  No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Supplier  ELECTROLUBE. A division of HK WENTWORTH LTD
ASHBY PARK, COALFIELD WAY,
ASHBY DE LA ZOUCH, LEICESTERSHIRE LE65 1JR
UNITED KINGDOM
+44 (0)1530 419600
+44 (0)1530 416640
info@hkw.co.uk

1.4. Emergency telephone number

Emergency telephone  IN CASE OF EMERGENCY CALL:
+44 1865 407333 (24hr, Provided by Carechem 24)
+353 (0)1 809 2166 (Beaumont Hospital, Republic of Ireland only, 8am-10pm, 7 days a week)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)  Not Classified

Physical hazards

Health hazards  Acute Tox. 4 - H332 Skin Sens. 1 - H317 STOT SE 3 - H335

Environmental hazards  Not Classified

2.2. Label elements

Pictogram

Signal word  Warning

Hazard statements  H317 May cause an allergic skin reaction.
                 H332 Harmful if inhaled.
                 H335 May cause respiratory irritation.
Polyurethane Resin UR5638, Part B

Precautionary statements

P261 Avoid breathing vapour/spray.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTRE/doctor if you feel unwell.
P501 Dispose of contents/ container in accordance with national regulations.

Contains

Hexamethylene diisocyanate, oligomers

Supplementary precautionary statements

P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

<table>
<thead>
<tr>
<th>Hexamethylene diisocyanate, oligomers</th>
<th>60-100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 28182-81-2</td>
<td>EC number: 500-060-2</td>
</tr>
</tbody>
</table>

Classification

Acute Tox. 4 - H332
Skin Sens. 1 - H317
STOT SE 3 - H335

The full text for all hazard statements is displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information
Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.

Inhalation
Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.

Ingestion
Rinse mouth thoroughly with water. Remove any dentures. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.

Skin contact
It is important to remove the substance from the skin immediately. In the event of any sensitisation symptoms developing, ensure further exposure is avoided. Remove contamination with soap and water or recognised skin cleansing agent. Get medical attention if symptoms are severe or persist after washing.
Polyurethane Resin UR5638, Part B

Eye contact
Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.

Protection of first aiders
First aid personnel should wear appropriate protective equipment during any rescue. If it is suspected that volatile contaminants are still present around the affected person, first aid personnel should wear an appropriate respirator or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

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

General information
See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation
A single exposure may cause the following adverse effects: Headache. Exhaustion and weakness.

Ingestion
May cause sensitisation or allergic reactions in sensitive individuals. Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.

Skin contact
May cause skin sensitisation or allergic reactions in sensitive individuals. Prolonged contact may cause dryness of the skin.

Eye contact
May cause temporary eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor
Treat symptomatically. May cause sensitisation or allergic reactions in sensitive individuals.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

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

Specific hazards
Containers can burst violently or explode when heated, due to excessive pressure build-up. This product is toxic.

Hazardous combustion products
Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours.

5.3. Advice for firefighters

Protective actions during firefighting
Avoid breathing fire gases or vapours. Evacuate area. Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Ventilate closed spaces before entering them. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

Special protective equipment for firefighters
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures
Polyurethane Resin UR5638, Part B

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions
No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material. Avoid inhalation of dust and vapours. Use suitable respiratory protection if ventilation is inadequate. Avoid contact with skin and eyes.

6.2. Environmental precautions

Environmental precautions
Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

6.3. Methods and material for containment and cleaning up

Methods for cleaning up
Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Provide adequate ventilation. Approach the spillage from upwind. Small Spillages: If the product is soluble in water, dilute the spillage with water and mop it up. Alternatively, or if it is not water-soluble, absorb the spillage with an inert, dry material and place it in a suitable waste disposal container. Large Spillages: If leakage cannot be stopped, evacuate area. Flush spilled material into an effluent treatment plant, or proceed as follows. Contain and absorb spillage with sand, earth or other non-combustible material. Place waste in labelled, sealed containers. Clean contaminated objects and areas thoroughly, observing environmental regulations. The contaminated absorbent may pose the same hazard as the spilled material. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

6.4. Reference to other sections

Reference to other sections
For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions
Read and follow manufacturer’s recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimise spills. Keep container tightly sealed when not in use. Avoid the formation of mists. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Advice on general occupational hygiene
Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions
Store in accordance with local regulations. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Bund storage facilities to prevent soil and water pollution in the event of spillage. The storage area floor should be leak-tight, jointless and not absorbent.

Storage class
Toxic storage.
Polyurethane Resin UR5638, Part B

7.3. Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

8.2. Exposure controls

Protective equipment

Provide adequate ventilation. Personal, workplace environment or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimise exposure.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

Other skin and body protection

Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.

Hygiene measures

Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Preventive industrial medical examinations should be carried out. Warn cleaning personnel of any hazardous properties of the product.

Respiratory protection

Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with European Standard EN14387. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

Environmental exposure controls

Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

5/10
Polyurethane Resin UR5638, Part B

9.1. Information on basic physical and chemical properties

- **Appearance**: Liquid.
- **Colour**: Colourless to pale yellow.
- **Odour**: No characteristic odour.
- **pH**: Not applicable.
- **Melting point**: <-20°C/<=-4°F
- **Initial boiling point and range**: >220°C/>428°F @ 1.33 hPa
- **Flash point**: 137°C / 278.6°F Method: Pensky-Martens closed cup.
- **Evaporation rate**: Not available.
- **Flammability (solid, gas)**: Not available.
- **Upper/lower flammability or explosive limits**: Not available.
- **Vapour pressure**: Not available.
- **Vapour density**: Not available.
- **Bulk density**: 1.16 kg/l
- **Solubility(ies)**: Soluble in the following materials: Ketones. Esters. Aromatic solvents.
- **Partition coefficient**: Not applicable.
- **Auto-ignition temperature**: 460°C/860°F
- **Decomposition Temperature**: Not available.
- **Viscosity**: 1200 mPa s @ 25°C/77°F
- **Explosive properties**: Not considered to be explosive.
- **Oxidising properties**: Does not meet the criteria for classification as oxidising.

9.2. Other information

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

**Reactivity**: There are no known reactivity hazards associated with this product.

#### 10.2. Chemical stability

**Stability**: Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.

#### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions**: No potentially hazardous reactions known.

#### 10.4. Conditions to avoid

**Conditions to avoid**: There are no known conditions that are likely to result in a hazardous situation.

#### 10.5. Incompatible materials

**Materials to avoid**: No specific material or group of materials is likely to react with the product to produce a hazardous situation.

#### 10.6. Hazardous decomposition products
**Polyurethane Resin UR5638, Part B**

**Hazardous decomposition products**

Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

**Acute toxicity - oral**

Notes (oral LD₅₀) Based on available data the classification criteria are not met.

**Acute toxicity - dermal**

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

**Acute toxicity - inhalation**

Notes (inhalation LC₅₀) Acute Tox. 4 - H332 Harmful if inhaled.

- **ATE inhalation (gases ppm)** 4,504.05
- **ATE inhalation (vapours mg/l)** 11.01
- **ATE inhalation (dusts/mists mg/l)** 1.5

**Skin corrosion/irritation**

Animal data Based on available data the classification criteria are not met.

**Serious eye damage/irritation**

Based on available data the classification criteria are not met.

**Respiratory sensitisation**

Based on available data the classification criteria are not met.

**Skin sensitisation**

May cause skin sensitisation or allergic reactions in sensitive individuals.

**Germ cell mutagenicity**

Genotoxicity - in vitro Based on available data the classification criteria are not met.

**Carcinogenicity**

Based on available data the classification criteria are not met.

**IARC carcinogenicity**

None of the ingredients are listed or exempt.

**Reproductive toxicity**

Based on available data the classification criteria are not met.

**Specific target organ toxicity - single exposure**

STOT - single exposure STOT SE 3 - H335 May cause respiratory irritation.

**Target organs** Respiratory system, lungs

**Specific target organ toxicity - repeated exposure**

STOT - repeated exposure Not classified as a specific target organ toxicant after repeated exposure.

**Aspiration hazard**

Based on available data the classification criteria are not met.
Polyurethane Resin UR5638, Part B

General information
The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation
A single exposure may cause the following adverse effects: Headache. Exhaustion and weakness.

Ingestion
May cause sensitisation or allergic reactions in sensitive individuals. Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.

Skin contact
May cause skin sensitisation or allergic reactions in sensitive individuals. Prolonged contact may cause dryness of the skin.

Eye contact
May cause temporary eye irritation.

Route of exposure
Ingestion Inhalation Skin and/or eye contact

Target organs
Respiratory system, lungs

Medical considerations
Skin disorders and allergies.

Toxicological information on ingredients.

Hexamethylene diisocyanate, oligomers

<table>
<thead>
<tr>
<th>Acute toxicity - inhalation</th>
<th>Hexamethylene di-isocyanate</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE inhalation (gases ppm)</td>
<td></td>
</tr>
<tr>
<td>4,500.0</td>
<td></td>
</tr>
<tr>
<td>ATE inhalation (vapours mg/l)</td>
<td></td>
</tr>
<tr>
<td>11.0</td>
<td></td>
</tr>
<tr>
<td>ATE inhalation (dusts/mists mg/l)</td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 12: Ecological information

Ecotoxicity
Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

12.1. Toxicity
Toxicity Based on available data the classification criteria are not met.

12.2. Persistence and degradability
Persistence and degradability The degradability of the product is not known.

12.3. Bioaccumulative potential
Bioaccumulative potential No data available on bioaccumulation.
Polyurethane Resin UR5638, Part B

Partition coefficient

Not applicable.

12.4. Mobility in soil

Mobility

No data available.

12.5. Results of PBT and vPvB assessment

12.6. Other adverse effects

Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information

The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal methods

Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

SECTION 14: Transport information

General

The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

Not applicable.

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

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

SECTION 15: Regulatory information
Polyurethane Resin UR5638, Part B

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

National regulations
- Health and Safety at Work etc. Act 1974 (as amended).
- The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].
- EH40/2005 Workplace exposure limits.

EU legislation
- Dangerous Preparations Directive 1999/45/EC.
- Dangerous Substances Directive 67/548/EEC.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Classification procedures according to Regulation (EC) 1272/2008

Training advice
- Read and follow manufacturer's recommendations. Only trained personnel should use this material.

Issued by
- Bethan Massey

Revision date
- 22/08/2018

Revision
- 1

SDS number
- 446

Hazard statements in full
- H317 May cause an allergic skin reaction.
- H332 Harmful if inhaled.
- H335 May cause respiratory irritation.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.