SAFETY DATA SHEET
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part A

1. Identification

Product identifier
Product name  Optically Clear Flame Retardant Polyurethane Resin UR5641, Part A
Product number  UR5641A, EUR5641RP250G, EUR5641K5K, ZE

Recommended use of the chemical and restrictions on use
Application  Resin.
Uses advised against  No specific uses advised against are identified.

Details of the supplier of the safety data sheet
Supplier
ELECTROLUBE. A division of HK WENTWORTH LTD
HK WENTWORTH-AMERICA
PO Box 126257
Benbrook, Texas 76126
USA
info@hkw.us.com
+1 888-501-9203

Emergency telephone number
Emergency telephone  +1 202 464 2554 (USA only)
                      +44 1235 239670

2. Hazard(s) identification

Classification of the substance or mixture
Physical hazards  Not Classified
Health hazards  Eye Irrit. 2A - H319
Environmental hazards  Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410

Label elements
Pictogram

Signal word  Warning
Hazard statements  H319 Causes serious eye irritation.
                   H410 Very toxic to aquatic life with long lasting effects.
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part A

Precautionary statements
P264 Wash contaminated skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/ attention.
P391 Collect spillage.
P501 Dispose of contents/ container in accordance with national regulations.

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

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Mixtures</th>
<th>4-tert-butylphenyl diphenyl phosphate bis(4-tert-butylphenyl) phenyl phosphate triphenyl phosphate</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number:</td>
<td>—</td>
</tr>
<tr>
<td>M factor (Acute)</td>
<td>1</td>
</tr>
<tr>
<td>M factor (Chronic)</td>
<td>1</td>
</tr>
<tr>
<td>Classification</td>
<td>Aquatic Acute 1 - H400</td>
</tr>
<tr>
<td></td>
<td>Aquatic Chronic 1 - H410</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>trimethoxyvinylsilane</th>
<th>1-5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number:</td>
<td>2768-02-7</td>
</tr>
<tr>
<td>Classification</td>
<td>Eye Dam. 1 - H318</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1-Methoxy-2-propanol</th>
<th>&lt;1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number:</td>
<td>107-98-2</td>
</tr>
<tr>
<td>Classification</td>
<td>Flam. Liq. 3 - H226</td>
</tr>
<tr>
<td></td>
<td>STOT SE 3 - H336</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tetramethyl orthosilicate</th>
<th>&lt;1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number:</td>
<td>681-84-5</td>
</tr>
<tr>
<td>Classification</td>
<td>Flam. Liq. 3 - H226</td>
</tr>
<tr>
<td></td>
<td>Acute Tox. 1 - H330</td>
</tr>
<tr>
<td></td>
<td>Skin Irrit. 2 - H315</td>
</tr>
<tr>
<td></td>
<td>Eye Dam. 1 - H318</td>
</tr>
</tbody>
</table>

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

4. First-aid measures

Description of first aid measures
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part A

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
Rinse with water.

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.

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
Prolonged inhalation of high concentrations may damage respiratory system.

Ingestion
Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.

Skin contact
Prolonged contact may cause dryness of the skin.

Eye contact
Irritating to eyes.

Indication of immediate medical attention and special treatment needed

Notes for the doctor
Treat symptomatically.

5. Fire-fighting measures

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.

Special hazards arising from the substance or mixture

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

Hazardous combustion products
Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.

Advice for firefighters
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part A

**Protective actions during firefighting**
Avoid breathing fire gases or vapors. 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 vapors 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. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

### 6. Accidental release measures

#### 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.

**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).

#### 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. 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 labeled, 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.

**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.

### 7. Handling and storage

#### 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 minimize 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.
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part A

Advice on general occupational hygiene
Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. 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.

Conditions for safe storage, including any incompatibilities

Storage precautions
Store away from incompatible materials (see Section 10). 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. Utilize retaining walls 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
Miscellaneous hazardous material storage.

Specific end uses(s)
The identified uses for this product are detailed in Section 1.

8. Exposure Controls/personal protection

Control parameters

Occupational exposure limits
1-Methoxy-2-propanol
Long-term exposure limit (8-hour TWA): ACGIH 50 ppm 184 mg/m³
Short-term exposure limit (15-minute): ACGIH 100 ppm 369 mg/m³
A4

Tetramethyl orthosilicate
Long-term exposure limit (8-hour TWA): ACGIH 1 ppm 6 mg/m³
ACGIH = American Conference of Governmental Industrial Hygienists.
A4 = Not Classifiable as a Human Carcinogen.

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 minimize 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 minimize 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 OSHA 1910.133. Wear tight-fitting, chemical splash goggles or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part A

**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 OSHA 1910.138 and be demonstrated to be impervious to the chemical and resist degradation. 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 NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with OSHA 1910.134. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134.

**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.

### 9. Physical and Chemical Properties

#### Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Clear</td>
</tr>
<tr>
<td>Odor</td>
<td>Not known</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>Vapor pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available</td>
</tr>
<tr>
<td>Bulk density</td>
<td>1.14 kg/l</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Not available</td>
</tr>
</tbody>
</table>
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part A

Partition coefficient
Not available.

Auto-ignition temperature
Not available.

Decomposition Temperature
Not available.

Viscosity
250 mPa s @ 23°C

Explosive properties
Not considered to be explosive.

Oxidizing properties
Does not meet the criteria for classification as oxidizing.

10. Stability and reactivity

Reactivity
See the other subsections of this section for further details.

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

Possibility of hazardous reactions
No potentially hazardous reactions known.

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

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

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

11. Toxicological information

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)
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
Causes serious eye irritation.

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

Skin sensitization
Skin sensitization
Based on available data the classification criteria are not met.

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.
### Optically Clear Flame Retardant Polyurethane Resin UR5641, Part A

<table>
<thead>
<tr>
<th>IARC carcinogenicity</th>
<th>None of the ingredients are listed or exempt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reproductive toxicity</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Reproductive toxicity - fertility</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Specific target organ toxicity - single exposure</td>
<td>Not classified as a specific target organ toxicant after a single exposure.</td>
</tr>
<tr>
<td>Specific target organ toxicity - repeated exposure</td>
<td>Not classified as a specific target organ toxicant after repeated exposure.</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>General information</td>
<td>The severity of the symptoms described will vary dependent on the concentration and the length of exposure.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Prolonged inhalation of high concentrations may damage respiratory system.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.</td>
</tr>
<tr>
<td>Skin Contact</td>
<td>Prolonged contact may cause dryness of the skin.</td>
</tr>
<tr>
<td>Eye contact</td>
<td>Irritating to eyes.</td>
</tr>
<tr>
<td>Route of entry</td>
<td>Ingestion Inhalation Skin and/or eye contact</td>
</tr>
<tr>
<td>Target Organs</td>
<td>No specific target organs known.</td>
</tr>
</tbody>
</table>

### 12. Ecological Information

| Toxicity | Aquatic Acute 1 - H400 Very toxic to aquatic life. Aquatic Chronic 1 - H410 Very toxic to aquatic life with long lasting effects. |
| Persistence and degradability | The degradability of the product is not known. |
| Bioaccumulative potential | No data available on bioaccumulation. |
| Partition coefficient | Not available. |
| Mobility in soil | No data available. |
| Mobility | None known. |

### 13. Disposal considerations

| Waste treatment methods | }
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part A

General information
The generation of waste should be minimized 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
Do not empty into drains. 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, labeled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

14. Transport information

General
For limited quantity packaging/limited load information, consult the relevant modal documentation using the data shown in this section.

UN Number
UN No. (TDG) 3082
UN No. (IMDG) 3082
UN No. (ICAO) 3082
UN No. (DOT) ID8000

UN proper shipping name
Proper shipping name (TDG) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS 4-tert-butylphenyl diphenyl phosphate bis(4-tert-butylphenyl) phenyl phosphate triphenyl phosphate)
Proper shipping name (IMDG) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS 4-tert-butylphenyl diphenyl phosphate bis(4-tert-butylphenyl) phenyl phosphate triphenyl phosphate)
Proper shipping name (ICAO) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS 4-tert-butylphenyl diphenyl phosphate bis(4-tert-butylphenyl) phenyl phosphate triphenyl phosphate)
Proper shipping name (DOT) CONSUMER COMMODITY

Transport hazard class(es)
DOT hazard class 9
DOT hazard label 9
TDG class 9
TDG label(s) 9
IMDG Class 9
ICAO class/division 9

Transport labels
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part A

DOT transport labels

Packing group
TDG Packing Group III
IMDG packing group III
ICAO packing group III

Environmental hazards
Environmentally Hazardous Substance

Special precautions for user
Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

EmS F-A, S-F

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

15. Regulatory information

US Federal Regulations
SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities
None of the ingredients are listed or exempt.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)
None of the ingredients are listed or exempt.

SARA Extremely Hazardous Substances EPCRA Reportable Quantities
None of the ingredients are listed or exempt.

SARA 313 Emission Reporting
None of the ingredients are listed or exempt.

CAA Accidental Release Prevention
None of the ingredients are listed or exempt.

FDA - Essential Chemical
None of the ingredients are listed or exempt.

FDA - Precursor Chemical
None of the ingredients are listed or exempt.

SARA (311/312) Hazard Categories
None of the ingredients are listed or exempt.
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part A

OSHA  Highly Hazardous Chemicals
None of the ingredients are listed or exempt.

US State Regulations
California Proposition 65 Carcinogens and Reproductive Toxins
None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-I)
The following ingredients are listed or exempt:
1-Methoxy-2-propanol

California Air Toxics "Hot Spots" (A-II)
None of the ingredients are listed or exempt.

California Directors List of Hazardous Substances
The following ingredients are listed or exempt:
1-Methoxy-2-propanol
Tetramethyl orthosilicate

Massachusetts "Right To Know" List
The following ingredients are listed or exempt:
1-Methoxy-2-propanol
Tetramethyl orthosilicate

Rhode Island "Right To Know" List
The following ingredients are listed or exempt:
1-Methoxy-2-propanol
Tetramethyl orthosilicate

Minnesota "Right To Know" List
The following ingredients are listed or exempt:
1-Methoxy-2-propanol
Tetramethyl orthosilicate

New Jersey "Right To Know" List
The following ingredients are listed or exempt:
1-Methoxy-2-propanol
Tetramethyl orthosilicate

Pennsylvania "Right To Know" List
The following ingredients are listed or exempt:
1-Methoxy-2-propanol
Tetramethyl orthosilicate

Inventories
US - TSCA
The following ingredients are listed or exempt:
[(dodecyloxy)methyl]oxirane
1-Methoxy-2-propanol
Tetramethyl orthosilicate
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part A

trimethoxyvinylsilane
Hexan-6-olide
Butane-1,4-diol
2-Oxepanone, polymer with 1,4-butanediol

US - TSCA 12(b) Export Notification
None of the ingredients are listed or exempt.

16. Other information

<table>
<thead>
<tr>
<th>Classification abbreviations and acronyms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Irrit. = Eye irritation</td>
</tr>
<tr>
<td>Aquatic Acute = Hazardous to the aquatic environment (acute)</td>
</tr>
<tr>
<td>Aquatic Chronic = Hazardous to the aquatic environment (chronic)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Training advice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read and follow manufacturer's recommendations. Only trained personnel should use this material.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Issued by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emily Kirk</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Revision date</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/26/2017</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SDS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2149</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazard statements in full</th>
</tr>
</thead>
<tbody>
<tr>
<td>H226 Flammable liquid and vapor.</td>
</tr>
<tr>
<td>H315 Causes skin irritation.</td>
</tr>
<tr>
<td>H318 Causes serious eye damage.</td>
</tr>
<tr>
<td>H319 Causes serious eye irritation.</td>
</tr>
<tr>
<td>H330 Fatal if inhaled.</td>
</tr>
<tr>
<td>H336 May cause drowsiness or dizziness.</td>
</tr>
<tr>
<td>H400 Very toxic to aquatic life.</td>
</tr>
<tr>
<td>H410 Very toxic to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>

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
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part B

1. Identification

Product identifier

Product name: Optically Clear Flame Retardant Polyurethane Resin UR5641, Part B

Product number: UR5641B, EUR5641RP250G, EUR5641K5K, ZE

Recommended use of the chemical and restrictions on use

Application: Resin.
Uses advised against: No specific uses advised against are identified.

Details of the supplier of the safety data sheet

Supplier: ELECTROLUBE. A division of HK WENTWORTH LTD
HK WENTWORTH-AMERICA
PO Box 126257
Benbrook, Texas 76126
USA
info@hkw.us.com
+1 888-501-9203

Emergency telephone number

Emergency telephone: +1 202 464 2554 (USA only)
+44 1235 239670

2. Hazard(s) identification

Classification of the substance or mixture

Physical hazards: Not Classified
Health hazards: Acute Tox. 4 - H332 Skin Sens. 1 - H317 Repr. 2 - H361 STOT SE 3 - H335
Environmental hazards: Not Classified

Label elements

Pictogram

Signal word: Warning

Hazard statements: H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H361 Suspected of damaging fertility or the unborn child.
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part B

Precautionary statements
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing vapor/spray.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
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.
P308+P313 If exposed or concerned: Get medical advice/attention.
P312 Call a poison center/doctor if you feel unwell.
P321 Specific treatment (see medical advice on this label).
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.
P405 Store locked up.
P501 Dispose of contents/container in accordance with national regulations.

Contains
2-Oxepanone, polymer with 1,6-diisocyanatohexane and 1,6-hexanediol, Hexamethylene disiocyanate, oligomers, Dimethylbis[(1-oxoneodecyl)oxy]stannane

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

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>2-Oxepanone, polymer with 1,6-diisocyanatohexane and 1,6-hexanediol</th>
<th>60-100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 164250-92-4</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hexamethylene diisocyanate, oligomers</th>
<th>10-30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 28182-81-2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimethylbis[(1-oxoneodecyl)oxy]stannane</th>
<th>&lt;1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 68928-76-7</td>
<td></td>
</tr>
</tbody>
</table>

Classification

<table>
<thead>
<tr>
<th>2-Oxepanone, polymer with 1,6-diisocyanatohexane and 1,6-hexanediol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 4 - H332</td>
</tr>
<tr>
<td>Skin Sens. 1 - H317</td>
</tr>
<tr>
<td>STOT SE 3 - H335</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hexamethylene diisocyanate, oligomers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 4 - H332</td>
</tr>
<tr>
<td>Skin Sens. 1 - H317</td>
</tr>
<tr>
<td>STOT SE 3 - H335</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimethylbis[(1-oxoneodecyl)oxy]stannane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 4 - H302</td>
</tr>
<tr>
<td>Repr. 2 - H361</td>
</tr>
<tr>
<td>STOT RE 1 - H372</td>
</tr>
<tr>
<td>Aquatic Chronic 4 - H413</td>
</tr>
</tbody>
</table>
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part B

### hexamethylene-di-isocyanate

**CAS number:** 822-06-0

**<1%**

### Classification

- **Acute Tox. 3 - H331**
- **Skin Irrit. 2 - H315**
- **Eye Irrit. 2A - H319**
- **Resp. Sens. 1 - H334**
- **Skin Sens. 1 - H317**
- **STOT SE 3 - H335**

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

### 4. First-aid measures

#### 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 sensitization symptoms developing, ensure further exposure is avoided. Remove contamination with soap and water or recognized 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.

**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.
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part B

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

Eye contact
May cause temporary eye irritation.

Indication of immediate medical attention and special treatment needed
Notes for the doctor
Treat symptomatically. May cause sensitization or allergic reactions in sensitive individuals.

5. Fire-fighting measures

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.

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 vapors.

Advice for firefighters
Protective actions during firefighting
Avoid breathing fire gases or vapors. Evacuate area. Keep upwind to avoid inhalation of gases, vapors, 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 vapors 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. Standard Firefighter’s clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

6. Accidental release measures

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 vapors and spray/mists. Use suitable respiratory protection if ventilation is inadequate. Avoid contact with skin and eyes.

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).

Methods and material for containment and cleaning up
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part B

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 labeled, 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.

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.

7. Handling and storage
Precautions for safe handling
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 minimize 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 and wash before reuse. 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.

Conditions for safe storage, including any incompatibilities
Store away from incompatible materials (see Section 10). 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. Utilize retaining walls 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
Chemical storage.

Specific end uses(s)
The identified uses for this product are detailed in Section 1.

8. Exposure Controls/personal protection
Control parameters
Occupational exposure limits
hexamethylene-di-isocyanate
Long-term exposure limit (8-hour TWA): ACGIH 0.005 ppm 0.034 mg/m²
ACGIH = American Conference of Governmental Industrial Hygienists.

Exposure controls
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part B

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 minimize 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 minimize 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 OSHA 1910.133. 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 OSHA 1910.138 and be demonstrated to be impervious to the chemical and resist degradation. 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 NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with OSHA 1910.134. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134.

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.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Clear</td>
</tr>
<tr>
<td>Odor</td>
<td>Not known</td>
</tr>
</tbody>
</table>
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part B

pH: Not available.
Melting point: Not available.
Initial boiling point and range: Not available.
Flash point: Not available.
Evaporation rate: Not available.
Flammability (solid, gas): Not available.
Upper/lower flammability or explosive limits: Not available.
Vapor pressure: Not available.
Vapor density: Not available.
Bulk density: 1.13 kg/l
Solubility(ies): Not available.
Partition coefficient: Not available.
Auto-ignition temperature: Not available.
Decomposition Temperature: Not available.
Viscosity: 4500 mPa s @ 23°C
Explosive properties: Not considered to be explosive.
Oxidizing properties: Does not meet the criteria for classification as oxidizing.

10. Stability and reactivity

Reactivity: See the other subsections of this section for further details.
Stability: Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions: No potentially hazardous reactions known.
Conditions to avoid: There are no known conditions that are likely to result in a hazardous situation.
Materials to avoid: No specific material or group of materials is likely to react with the product to produce a hazardous situation.
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 vapors.

11. Toxicological Information

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
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part B

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

ATE Inhalation (gases ppm) 15,088.96

ATE Inhalation (vapours mg/l) 11.05

ATE inhalation (dusts/mists mg/l) 5.03

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

Animal data

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

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

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 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.

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 sensitization 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 sensitization or allergic reactions in sensitive individuals. Prolonged contact may cause dryness of the skin.

Eye contact May cause temporary eye irritation.
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part B

**Route of entry**
Ingestion, Inhalation, Skin and/or eye contact

**Target Organs**
Respiratory system, lungs

**Medical considerations**
Skin disorders and allergies.

### 12. Ecological Information

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

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

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

**Bioaccumulative potential**
No data available on bioaccumulation.

**Partition coefficient**
Not available.

**Mobility in soil**
No data available.

**Mobility**
None known.

### 13. Disposal considerations

**Waste treatment methods**

**General information**
The generation of waste should be minimized 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**
Do not empty into drains. 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, labeled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

### 14. Transport information

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

**UN Number**
Not applicable.

**UN proper shipping name**
Not applicable.

**Transport hazard class(es)**
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part B

No transport warning sign required.

Transport labels
No transport warning sign required.

DOT transport labels
No transport warning sign required.

Packing group
Not applicable.

Environmental hazards
Environmentally Hazardous Substance
No.

Special precautions for user
Not applicable.

DOT TIH Zone
Not applicable.

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

15. Regulatory Information

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities
None of the ingredients are listed or exempt.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)
The following ingredients are listed or exempt:
hexamethylene-di-isocyanate
Final CERCLA RQ: 100(45.4) pounds (Kilograms)

SARA Extremely Hazardous Substances EPCRA Reportable Quantities
None of the ingredients are listed or exempt.

SARA 313 Emission Reporting
The following ingredients are listed or exempt:
hexamethylene-di-isocyanate
1.0%

CAA Accidental Release Prevention
None of the ingredients are listed or exempt.

FDA - Essential Chemical
None of the ingredients are listed or exempt.

FDA - Precursor Chemical
None of the ingredients are listed or exempt.

SARA (311/312) Hazard Categories
None of the ingredients are listed or exempt.
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part B

OSHA Highly Hazardous Chemicals
None of the ingredients are listed or exempt.

US State Regulations
California Proposition 65 Carcinogens and Reproductive Toxins
None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-I)
The following ingredients are listed or exempt:
hexamethylene-di-isocyanate

California Air Toxics "Hot Spots" (A-II)
None of the ingredients are listed or exempt.

California Directors List of Hazardous Substances
The following ingredients are listed or exempt:
hexamethylene-di-isocyanate

Massachusetts "Right To Know" List
The following ingredients are listed or exempt:
hexamethylene-di-isocyanate

Rhode Island "Right To Know" List
None of the ingredients are listed or exempt.

Minnesota "Right To Know" List
The following ingredients are listed or exempt:
hexamethylene-di-isocyanate

New Jersey "Right To Know" List
The following ingredients are listed or exempt:
hexamethylene-di-isocyanate

Pennsylvania "Right To Know" List
None of the ingredients are listed or exempt.

Inventories
US - TSCA
The following ingredients are listed or exempt:
neodecanoic acid
Dimethylbis[(1-oxoneodecyl)oxy]stannane
hexamethylene-di-isocyanate
Hexamethylene diisocyanate, oligomers

US - TSCA 12(b) Export Notification
None of the ingredients are listed or exempt.

16. Other information

Classification abbreviations
Acute Tox. = Acute toxicity
Skin Sens. = Skin sensitisation
STOT SE = Specific target organ toxicity-single exposure
Optically Clear Flame Retardant Polyurethane Resin UR5641, Part B

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

Issued by
Emily Kirk

Revision date
9/26/2017

Revision
0

SDS No.
2144

Hazard statements in full
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H361 Suspected of damaging fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H413 May cause long lasting harmful effects to aquatic life.

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.