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

1.1. Product identifier
Product form : Mixture
Product name : RLH17-US - UP0828
Product group : 2K Hardener

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

1.3. Details of the supplier of the safety data sheet

U-POL US Inc
108 Commerce Way
Stockertown
PA 18083- USA
T 1-800-340-7824 - F 1-800-787-5150
technical.department@u-pol.com - www.u-pol.com

1.4. Emergency telephone number
Emergency number : CHEMTREC - 1-800-424-9300 ( UK +44 (0) 1933 230310 (07:30 - 17:00hrs UK time )

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification
Flam. Liq. 2  H225
Eye Irrit. 2A H319
Skin Sens. 1 H317
STOT SE 3 H336
STOT SE 3 H335
Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling
Hazard pictograms (GHS-US) :

Signal word (GHS-US) : Danger
Hazard statements (GHS-US) : H225 - Highly flammable liquid and vapor
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness

Precautionary statements (GHS-US) :
P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking
P261 - Avoid breathing fume, spray, vapors
P280 - Wear face protection, protective clothing, protective gloves
P302+P352 - If on skin: Wash with plenty of water
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a POISON CENTER if you feel unwell

2.3. Other hazards
No additional information available

2.4. Unknown acute toxicity (GHS-US)
Not applicable
SECTION 3: Composition/information on ingredients

3.1. Substance
Not applicable

3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>methyl acetate</td>
<td>(CAS No) 79-20-9</td>
<td>43 - 63</td>
<td>Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336</td>
</tr>
<tr>
<td>HEXAMETHYLENE DIISOCYANATE OLIGOMERS</td>
<td>(CAS No) 28182-81-2</td>
<td>&lt; 63</td>
<td>Acute Tox. 4 (Inhalation), H332 Skin Sens. 1, H317 STOT SE 3, H335</td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), light arom.,</td>
<td></td>
<td>&lt; 5</td>
<td>Flam. Liq. 3, H226 STOT SE 3, H336 STOT SE 3, H335 Asp. Tox. 1, H304 Aquatic Chronic 2, H411</td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures general: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

First-aid measures after skin contact: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Get medical advice/attention. Wash contaminated clothing before reuse. Repeated exposure may cause skin dryness or cracking.

First-aid measures after eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Get medical advice/attention.

First-aid measures after ingestion: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/injuries after inhalation: May cause an allergic skin reaction. May cause respiratory irritation. May cause drowsiness or dizziness.

Symptoms/injuries after eye contact: Causes serious eye irritation.

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

Unsuitable extinguishing media: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture
Fire hazard: Highly flammable liquid and vapor.

Explosion hazard: May form flammable/explosive vapor-air mixture.

5.3. Advice for firefighters
Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
General measures: Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.

6.1.1. For non-emergency personnel

Emergency procedures: Evacuate unnecessary personnel.
### 6.1.2. For emergency responders

**Protective equipment**: Equip cleanup crew with proper protection. Avoid breathing spray, vapors.

**Emergency procedures**: Ventilate area.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

**For containment**: Contain released substance, pump into suitable containers. Collect spillage.

**Methods for cleaning up**: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

**Additional hazards when processed**: Handle empty containers with care because residual vapors are flammable.

**Precautions for safe handling**: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Use only non-sparking tools. Avoid breathing spray, vapors. Use only outdoors or in a well-ventilated area.

**Hygiene measures**: Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

#### 7.2. Conditions for safe storage, including any incompatibilities

**Technical measures**: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical, lighting equipment equipment.

**Storage conditions**: Keep only in the original container in a cool, well ventilated place away from : Ignition sources, Heat sources, Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep in fireproof place. Keep container tightly closed.

**Incompatible products**: Strong bases. Strong acids.

**Incompatible materials**: Sources of ignition. Direct sunlight. Heat sources.

**Storage temperature**: < 25 °C

**Storage area**: Store in a well-ventilated place.

**Special rules on packaging**: Keep only in original container.

#### 7.3. Specific end use(s)

No additional information available

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

**RLH17-US - UP0828**

<table>
<thead>
<tr>
<th>Source</th>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td>Not applicable</td>
<td></td>
</tr>
</tbody>
</table>

**methyl acetate (79-20-9)**

<table>
<thead>
<tr>
<th>Source</th>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>ACGIH TWA (ppm)</td>
<td>200 ppm</td>
</tr>
<tr>
<td>ACGIH</td>
<td>ACGIH STEL (ppm)</td>
<td>250 ppm</td>
</tr>
<tr>
<td>ACGIH</td>
<td>Remark (ACGIH)</td>
<td>eye &amp; URT irr</td>
</tr>
<tr>
<td>OSHA</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td>610 mg/m³</td>
</tr>
<tr>
<td>OSHA</td>
<td>OSHA PEL (TWA) (ppm)</td>
<td>200 ppm</td>
</tr>
</tbody>
</table>

**Solvent naphtha (petroleum), light arom.**

<table>
<thead>
<tr>
<th>Source</th>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td>Not applicable</td>
<td></td>
</tr>
</tbody>
</table>

**HEXAMETHYLENE DIISOCYANATE OLIGOMERS (28182-81-2)**

<table>
<thead>
<tr>
<th>Source</th>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>Not applicable</td>
<td></td>
</tr>
</tbody>
</table>

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8.2. Exposure controls


Materials for protective clothing: Impermeable clothing.
Hand protection: Wear protective gloves.
Eye protection: Chemical goggles or safety glasses.
Skin and body protection: Wear suitable protective clothing.
Respiratory protection: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Air-fed respiratory protective equipment should be worn when this product is sprayed.

Other information: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid
Appearance: Liquid.
Color: Colorless
Odor: aromatic
Odor threshold: No data available
pH: No data available
Relative evaporation rate (butyl acetate=1): No data available
Melting point: No data available
Freezing point: No data available
Boiling point: > 35 °C
Flash point: < 0 °C
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): No data available
Vapor pressure: No data available
Relative vapor density at 20 °C: No data available
Relative density: No data available
Specific gravity / density: 1.01 - 1.03
Solubility: insoluble in water. soluble in most organic solvents.
Log Pow: No data available
Log Kow: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidizing properties: No data available
Explosion limits: No data available

9.2. Other information

VOC content - Actual: 32 g/l
VOC content: 598 g/l
VOC content - Regulatory: 67 g/l

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available
10.2. **Chemical stability**
Highly flammable liquid and vapor. May form flammable/explosive vapor-air mixture.

10.3. **Possibility of hazardous reactions**
Not established.

10.4. **Conditions to avoid**
Direct sunlight. Extremely high or low temperatures. Open flame.

10.5. **Incompatible materials**
Strong acids. Strong bases.

10.6. **Hazardous decomposition products**

**SECTION 11: Toxicological information**

11.1. **Information on toxicological effects**

<table>
<thead>
<tr>
<th>Acute toxicity</th>
<th>: Not classified</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HEXAMETHYLENE DIISOCYANATE OLIGOMERS (28182-81-2)</strong></td>
<td></td>
</tr>
<tr>
<td>ATE US (gases)</td>
<td>4500.000 ppmV/4h</td>
</tr>
<tr>
<td>ATE US (vapors)</td>
<td>11.000 mg/l/4h</td>
</tr>
<tr>
<td>ATE US (dust, mist)</td>
<td>1.500 mg/l/4h</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>: Not classified</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>: Causes serious eye irritation.</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>: May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>: Not classified</td>
</tr>
<tr>
<td>Based on available data, the classification criteria are not met</td>
<td></td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>: Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>: Not classified</td>
</tr>
<tr>
<td>Based on available data, the classification criteria are not met</td>
<td></td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>: May cause drowsiness or dizziness. May cause respiratory irritation.</td>
</tr>
<tr>
<td>Specific target organ toxicity (repeated exposure)</td>
<td>: Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>: Not classified</td>
</tr>
<tr>
<td>Potential Adverse human health effects and symptoms</td>
<td>: Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Symptoms/injuries after inhalation</td>
<td>: May cause an allergic skin reaction. May cause respiratory irritation. May cause drowsiness or dizziness.</td>
</tr>
<tr>
<td>Symptoms/injuries after eye contact</td>
<td>: Causes serious eye irritation.</td>
</tr>
</tbody>
</table>

**SECTION 12: Ecological information**

12.1. **Toxicity**
No additional information available

12.2. **Persistence and degradability**

| RLH17-US - UP0828 | |
| Persistence and degradability | Not established. |
| **Solvent naphtha (petroleum), light arom.** | |
| Persistence and degradability | May cause long-term adverse effects in the environment. |

12.3. **Bioaccumulative potential**

| RLH17-US - UP0828 | |
| Bioaccumulative potential | Not established. |
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Solvent naphtha (petroleum), light arom.,

| Bioaccumulative potential | Not established. |

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects

Effect on ozone layer : Not established.
Effect on the global warming : No known ecological damage caused by this product.
Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to Dispose in a safe manner in accordance with local/national regulations.
Additional information : Handle empty containers with care because residual vapors are flammable.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1263 Paint related material (including paint thinning, drying, removing, or reducing compound), 3, II
UN-No.(DOT) : UN1263
Proper Shipping Name (DOT) : Paint related material including paint thinning, drying, removing, or reducing compound
Transport hazard class(es) (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Hazard labels (DOT) : 3 - Flammable liquid

Packing group (DOT) : II - Medium Danger

DOT Special Provisions (49 CFR 172.102) :
149 - When transported as a limited quantity or a consumer commodity, the maximum net capacity specified in 173.150(b)(2) of this subchapter for inner packaging may be increased to 5 L (1.3 gallons).
B52 - Notwithstanding the provisions of 173.24b of this subchapter, non-reclosing pressure relief devices are authorized on DOT 57 portable tanks.
IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.
T4 - 2.65 178.274(d)(2) Normal............. 178.275(d)(3)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / 1 + a (tr - tf) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
TP8 - A portable tank having a minimum test pressure of 1.5 bar (150 kPa) may be used when the flash point of the hazardous material transported is greater than 0 C (32 F).
TP28 - A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

DOT Packaging Exceptions (49 CFR 173.xxx) : 150
DOT Packaging Non Bulk (49 CFR 173.xxx) : 173
DOT Packaging Bulk (49 CFR 173.xxx) : 242
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75): 60 L

DOT Vessel Stowage Location:
- B: (i) The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) “On deck only” on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

Additional information
Other information: No supplementary information available.

ADR
Transport document description: UN 1263 PAINT RELATED MATERIAL, 3, II, (D/E)
Packing group (ADR): II
Class (ADR): 3 - Flammable liquid
Hazard identification number (Kemler No.): 33
Classification code (ADR): F1
Hazard labels (ADR): 3 - Flammable liquids

Orange plates:
- 33
- 1263

Tunnel restriction code (ADR): D/E
LQ: 5l
Excepted quantities (ADR): E2

Transport by sea
UN-No. (IMDG): 1263
Proper Shipping Name (IMDG): PAINT RELATED MATERIAL
Class (IMDG): 3 - Flammable liquids
Packing group (IMDG): II - substances presenting medium danger

Air transport
UN-No. (IATA): 1263
Proper Shipping Name (IATA): Paint
Class (IATA): 3 - Flammable Liquids
Packing group (IATA): II - Medium Danger

SECTION 15: Regulatory information

15.1. US Federal regulations
Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.
- hexamethylene-di-isocyanate CAS No 822-06-0 < 5
- methyl acetate (79-20-9)
  Listed on the United States TSCA (Toxic Substances Control Act) inventory
- Solvent naphtha (petroleum), light arom.
  Not listed on the United States TSCA (Toxic Substances Control Act) inventory
- HEXAMETHYLENE DIISOCYANATE OLIGOMERS (28182-81-2)
  Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations
CANADA
No additional information available

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EU-Regulations
No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Flam. Liq. 2  H225
Eye Irrit. 2  H319
Skin Sens. 1  H317
STOT SE 3  H335
STOT SE 3  H336
Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

15.2. National regulations

15.3. US State regulations
California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

SECTION 16: Other information
Other information : None.

Full text of H-phrases:

<table>
<thead>
<tr>
<th>Acute Tox. 4 (Inhalation)</th>
<th>Acute toxicity (inhalation) Category 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Chronic 2</td>
<td>Hazardous to the aquatic environment - Chronic Hazard Category 2</td>
</tr>
<tr>
<td>Asp. Tox. 1</td>
<td>Aspiration hazard Category 1</td>
</tr>
<tr>
<td>Eye Irrit. 2A</td>
<td>Serious eye damage/eye irritation Category 2A</td>
</tr>
<tr>
<td>Flam. Liq. 2</td>
<td>Flammable liquids Category 2</td>
</tr>
<tr>
<td>Flam. Liq. 3</td>
<td>Flammable liquids Category 3</td>
</tr>
<tr>
<td>Skin Sens. 1</td>
<td>Skin sensitization Category 1</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity (single exposure) Category 3</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity (single exposure) Category 3</td>
</tr>
<tr>
<td>H225</td>
<td>Highly flammable liquid and vapor</td>
</tr>
<tr>
<td>H226</td>
<td>Flammable liquid and vapor</td>
</tr>
<tr>
<td>H304</td>
<td>May be fatal if swallowed and enters airways</td>
</tr>
<tr>
<td>H317</td>
<td>May cause an allergic skin reaction</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H332</td>
<td>Harmful if inhaled</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation</td>
</tr>
<tr>
<td>H336</td>
<td>May cause drowsiness or dizziness</td>
</tr>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects</td>
</tr>
</tbody>
</table>

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 3 - Liquids and solids that can be ignited under almost all ambient conditions.

NFPA reactivity : 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.

SDS US UPOL
For professional use only.
The information contained within this Safety Data Sheet (SDS) is believed to be correct as of the date issued however it is subject to change from time to time. It does not purport to be all inclusive or exhaustive and shall only be used as a guide. U-POL makes no warranties, expressed or implied, including but not limited to, any implied warranty of fitness for a given purpose or usage. It is the buyer's responsibility to ensure the suitability of the products for their own use and to check the information is up to date. U-POL cannot be held responsible for the suitability of use for any of its products, considering the wide range of factors such as application, substrates and handling methods. Since these conditions of use are outside of our control, the company shall not be held liable for any damage resulting from handling or from contact with the product detailed. Moreover, addition of reducers, hardeners or other additives over and above U-POL's recommendations for use, may substantially alter the composition and hazards of the product. U-POL data sheets are available via the U-POL website at WWW.U-POL.COM.