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

1.1. Product identifier
Product name R-Flex Resin

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses Two-component, isocyanate-based sealant.

1.3. Details of the supplier of the safety data sheet
Supplier ITW Performance Polymers
Bay 150
Shannon Industrial Estate
Co. Clare
Ireland
V14 DF82
353(61)771500
353(61)471285
mail@itwpp.com

1.4. Emergency telephone number
Emergency telephone +44(0)1235 239 670 (24h)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification (EC 1272/2008)
Physical hazards Not Classified
Environmental hazards Not Classified

2.2. Label elements
Pictogram

Signal word Danger
Hazard statements H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
R-Flex Resin

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.
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/doctor if you feel unwell.

Supplemental label information

EUH204 Contains isocyanates. May produce an allergic reaction.

Contains

4,4’-METHYLENEDI(CYCLOHEXYL ISOXYLANATE), Polyurethane Prepolymer, DIPHENYLMETHANE-4,4’-DI-ISOCYANATE

Supplementary precautionary statements

P264 Wash contaminated skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P284 [In case of inadequate ventilation] wear respiratory protection.
P321 Specific treatment (see medical advice on this label).
P332+P313 If skin irritation occurs: Get medical advice/attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
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.

2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.2. Mixtures

4,4’-METHYLENEDI(CYCLOHEXYL ISOXYLANATE) 10-30%
CAS number: 5124-30-1  EC number: 225-863-2

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

ALPHA-HYDRO-OMEGA-HYDROXYPOLY(OXY-1,4-BUTANEDIYL) 10-30%
CAS number: 25190-06-1

Classification
Aquatic Chronic 3 - H412
# R-Flex Resin

<table>
<thead>
<tr>
<th>Polyurethane Prepolymer</th>
<th>10-30%</th>
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<tbody>
<tr>
<td>CAS number: 103837-45-2</td>
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</table>

**Classification**

Skin Sens. 1 - H317

<table>
<thead>
<tr>
<th>BUTANONE</th>
<th>5-10%</th>
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</thead>
<tbody>
<tr>
<td>CAS number: 78-93-3</td>
<td>EC number: 201-159-0</td>
</tr>
</tbody>
</table>

**Classification**

Flam. Liq. 2 - H225
Eye Irrit. 2 - H319
STOT SE 3 - H336

<table>
<thead>
<tr>
<th>DIPHENYL METHANE-4,4'-DI-ISOCYANATE</th>
<th>&lt;1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 101-68-8</td>
<td>EC number: 202-966-0</td>
</tr>
</tbody>
</table>

**Classification**

Acute Tox. 4 - H332
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319
Resp. Sens. 1 - H334
Skin Sens. 1 - H317
Carc. 2 - H351
STOT SE 3 - H335
STOT RE 2 - H373

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

Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Persons with impaired lung function should not handle this product. Persons susceptible to allergic reactions should not handle this product.

**Inhalation**

Move affected person to fresh air at once. Get medical attention if any discomfort continues.

**Ingestion**

Rinse mouth thoroughly with water. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention.

**Skin contact**

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation persists after washing.

**Eye contact**

Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes and get medical attention.

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

#### General information

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

### 4.3. Indication of any immediate medical attention and special treatment needed
R-Flex Resin

Notes for the doctor
No specific recommendations. If in doubt, get medical attention promptly. May cause sensitisation by inhalation.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media: Extinguish with foam, carbon dioxide or dry powder.

5.2. Special hazards arising from the substance or mixture
Specific hazards: Avoid breathing fire gases or vapours.

5.3. Advice for firefighters
Protective actions during firefighting: Cool containers exposed to flames with water until well after the fire is out. Keep up-wind to avoid fumes. Control run-off water by containing and keeping it out of sewers and watercourses.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Personal precautions: Provide adequate ventilation. Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions
Environmental precautions: Do not discharge into drains or watercourses or onto the ground. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely. Containers with collected spillage must be properly labelled with correct contents and hazard symbol.

6.4. Reference to other sections
Reference to other sections: Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Usage precautions: Handle and open container with care. Provide adequate ventilation. Avoid inhalation of vapours. Use approved respirator if air contamination is above an acceptable level. Do not eat, drink or smoke when using the product. Good personal hygiene procedures should be implemented.

7.2. Conditions for safe storage, including any incompatibilities
Storage precautions: Store in tightly-closed, original container in a dry, cool and well-ventilated place. Store away from incompatible materials (see Section 10).

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
R-Flex Resin

4,4’-METHYLENEDI(CYCLOHEXYL ISOCYANATE)
Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m³ (Sen)
Short-term exposure limit (15-minute): WEL 0.07 mg/m³ (Sen)

BUTANONE
Long-term exposure limit (8-hour TWA): WEL 200 ppm (Sk) 600 mg/m³ (Sk)
Short-term exposure limit (15-minute): WEL 300 ppm (Sk) 899 mg/m³ (Sk)

DIPHENYLMETHANE-4,4’-DI-ISOCYANATE
Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m³ (Sen)
Short-term exposure limit (15-minute): WEL 0.07 mg/m³ (Sen)

WEL = Workplace Exposure Limit

Ingredient comments

4,4’-METHYLENEDI(CYCLOHEXYL ISOCYANATE) (CAS: 5124-30-1)
DNEL
Workers - Inhalation; Short term local effects: 0.6 mg/m³
Workers - Inhalation; Long term local effects: 0.3 mg/m³

DIPHENYLMETHANE-4,4’-DI-ISOCYANATE (CAS: 101-68-8)
DNEL
Workers - Inhalation; Long term local effects: 0.05 mg/m³
Workers - Inhalation; Short term local effects: 0.1 mg/m³

8.2. Exposure controls

Protective equipment
Appropriate engineering controls
Provide adequate general and local exhaust ventilation. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection
Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Chemical splash goggles or face shield. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection
Wear protective gloves made of the following material: Rubber (natural, latex). Neoprene. Polyanil chloride (PVC). To protect hands from chemicals, gloves should comply with European Standard EN374. The selected gloves should have a breakthrough time of at least 8 hours.

Other skin and body protection
Wear chemical protective suit.

Hygiene measures
Keep away from food, drink and animal feeding stuffs. Good personal hygiene procedures should be implemented. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. Do not eat, drink or smoke when using the product. Promptly remove any clothing that becomes wet or contaminated.
**R-Flex Resin**

**Respiratory protection**

If ventilation is inadequate, suitable respiratory protection must be worn. Respirator selection must be based on exposure levels, the hazards of the product and the safe working limits of the selected respirator. Check that the respirator fits tightly and the filter is changed regularly. Wear a respirator fitted with the following cartridge: Gas filter, type A2. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

### SECTION 9: Physical and Chemical Properties

**9.1. 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>Colour</td>
<td>Clear liquid</td>
</tr>
<tr>
<td>pH</td>
<td>pH (concentrated solution): 7 @ 25 °C</td>
</tr>
<tr>
<td>Melting point</td>
<td>n/d°C</td>
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<tr>
<td>Initial boiling point and range</td>
<td>&gt;149.4°C @</td>
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<tr>
<td>Flash point</td>
<td>&gt;204.4°C TCC (Tag closed cup).</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.03 @ 25 °C°C</td>
</tr>
<tr>
<td>Viscosity</td>
<td>3.2-8.5 Pa s @ °C</td>
</tr>
</tbody>
</table>

**9.2. Other information**

Other information Not available.

### SECTION 10: Stability and reactivity

**10.1. Reactivity**


**10.2. Chemical stability**

Stability Stable at normal ambient temperatures and when used as recommended.

**10.3. Possibility of hazardous reactions**

Possibility of hazardous reactions Not available.

**10.4. Conditions to avoid**

Conditions to avoid Avoid heat, flames and other sources of ignition.

**10.5. Incompatible materials**

Materials to avoid Avoid contact with the following materials: Water, moisture. Alcohols, glycols. Amines. Alkalis.

**10.6. Hazardous decomposition products**

Hazardous decomposition products Fire or high temperatures create: Nitrous gases (NOx). Oxides of the following substances: Carbon monoxide (CO). Carbon dioxide (CO2). Vapours/gases/fumes of: Ammonia or amines.

### SECTION 11: Toxicological information

**11.1. Information on toxicological effects**

**Acute toxicity - inhalation**

ATE inhalation (gases ppm) 28,000.0
R-Flex Resin

ATE inhalation (vapours mg/l) 120.0
ATE inhalation (dusts/mists mg/l) 20.0

Inhalation
Irritating to respiratory system. May cause sensitisation by inhalation.

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

Acute and chronic health hazards
Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates. Persons with impaired lung function should not handle this product. Persons susceptible to allergic reactions should not handle this product. The product contains small quantities of isocyanate. May cause respiratory allergy. May cause respiratory system irritation.

4,4'-METHYLENEDI(CYCLOHEXYL ISOCYANATE)

Acute toxicity - oral
Acute toxicity oral (LD₅₀ mg/kg) 18,200.0

Species Rat
ATE oral (mg/kg) 18,200.0

Acute toxicity - dermal
Acute toxicity dermal (LD₅₀ mg/kg) 7,000.0

Species Rat
ATE dermal (mg/kg) 7,000.0

Acute toxicity - inhalation
ATE inhalation (gases ppm) 700.0
ATE inhalation (vapours mg/l) 3.0
ATE inhalation (dusts/mists mg/l) 0.5

SECTION 12: Ecological Information

Ecotoxicity
There are no data on the ecotoxicity of this product.

12.1. Toxicity
Acute toxicity - fish LC₅₀, 96 hours: 1.2 mg/l, Algae
Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: >500 mg/l, Daphnia magna

12.2. Persistence and degradability
Persistence and degradability Assessment of biological degradability (Closed-Bottle Test) 60 %.

12.3. Bioaccumulative potential
Bioaccumulative potential No data available on bioaccumulation.
R-Flex Resin

12.4. Mobility in soil

Mobility
Do not discharge into drains or watercourses or onto the ground.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment
This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects
Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information
When handling waste, the safety precautions applying to handling of the product should be considered.

Disposal methods
Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

Waste class
08 04 99

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
No information required.

14.2. UN proper shipping name
No information required.

14.3. Transport hazard class(es)
No information required.

14.4. Packing group
No information required.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user
No information required.

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
No information required.

SECTION 15: Regulatory information

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

EU legislation
R-Flex Resin

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

SECTION 16: Other information

<table>
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<th>Revision date</th>
<th>03/04/2018</th>
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<tbody>
<tr>
<td>Revision</td>
<td>2</td>
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<tr>
<td>Supersedes date</td>
<td>20/11/2017</td>
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<td>SDS number</td>
<td>20766</td>
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**Hazard statements in full**
- H225 Highly flammable liquid and vapour.
- 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.
- H336 May cause drowsiness or dizziness.
- H351 Suspected of causing cancer.
- H373 May cause damage to organs through prolonged or repeated exposure.
- 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.