



**SAFETY DATA SHEET**  
**R-Flex Resin**

**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)**

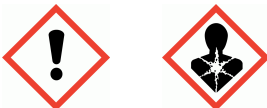
**Physical hazards** Not Classified

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

**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

<b>Precautionary statements</b>	<p>P261 Avoid breathing vapour/ spray.</p> <p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P302+P352 IF ON SKIN: Wash with plenty of water.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P312 Call a POISON CENTER/ doctor if you feel unwell.</p>
<b>Supplemental label information</b>	EUH204 Contains isocyanates. May produce an allergic reaction.
<b>Contains</b>	4,4'-METHYLENEDI(CYCLOHEXYL ISOCYANATE), Polyurethane Prepolymer, DIPHENYLMETHANE-4,4'-DI-ISOCYANATE
<b>Supplementary precautionary statements</b>	<p>P264 Wash contaminated skin thoroughly after handling.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P272 Contaminated work clothing should not be allowed out of the workplace.</p> <p>P273 Avoid release to the environment.</p> <p>P284 [In case of inadequate ventilation] wear respiratory protection.</p> <p>P321 Specific treatment (see medical advice on this label).</p> <p>P332+P313 If skin irritation occurs: Get medical advice/ attention.</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.</p> <p>P337+P313 If eye irritation persists: Get medical advice/ attention.</p> <p>P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P405 Store locked up.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p>

### 2.3. Other hazards

#### SECTION 3: Composition/information on ingredients

##### 3.2. Mixtures

<b>4,4'-METHYLENEDI(CYCLOHEXYL ISOCYANATE)</b>	<b>10-30%</b>
CAS number: 5124-30-1	EC number: 225-863-2
<b>Classification</b>	
Acute Tox. 3 - H331	
Skin Irrit. 2 - H315	
Eye Irrit. 2 - H319	
Resp. Sens. 1 - H334	
Skin Sens. 1 - H317	
STOT SE 3 - H335	
<b>ALPHA-HYDRO-OMEGA-HYDROXYPOLY(OXY-1,4-BUTANEDIYL)</b>	<b>10-30%</b>
CAS number: 25190-06-1	
<b>Classification</b>	
Aquatic Chronic 3 - H412	

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<b>Polyurethane Prepolymer</b>	<b>10-30%</b>
CAS number: 103837-45-2	
<b>Classification</b> Skin Sens. 1 - H317	
<b>BUTANONE</b>	<b>5-10%</b>
CAS number: 78-93-3                      EC number: 201-159-0	
<b>Classification</b> Flam. Liq. 2 - H225 Eye Irrit. 2 - H319 STOT SE 3 - H336	
<b>DIPHENYLMETHANE-4,4'-DI-ISOCYANATE</b>	<b>&lt;1%</b>
CAS number: 101-68-8                      EC number: 202-966-0	
<b>Classification</b> 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

<b>General information</b>	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.
<b>Inhalation</b>	Move affected person to fresh air at once. Get medical attention if any discomfort continues.
<b>Ingestion</b>	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.
<b>Skin contact</b>	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation persists after washing.
<b>Eye contact</b>	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

<b>General information</b>	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
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#### 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/m<sup>3</sup>(Sen)

Short-term exposure limit (15-minute): WEL 0.07 mg/m<sup>3</sup>(Sen)

### BUTANONE

Long-term exposure limit (8-hour TWA): WEL 200 ppm(Sk) 600 mg/m<sup>3</sup>(Sk)

Short-term exposure limit (15-minute): WEL 300 ppm(Sk) 899 mg/m<sup>3</sup>(Sk)

### DIPHENYLMETHANE-4,4'-DI-ISOCYANATE

Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m<sup>3</sup>(Sen)

Short-term exposure limit (15-minute): WEL 0.07 mg/m<sup>3</sup>(Sen)

WEL = Workplace Exposure Limit

**Ingredient comments** WEL = Workplace Exposure Limits

### 4,4'-METHYLENEDI(CYCLOHEXYL ISOCYANATE) (CAS: 5124-30-1)

**DNEL**

Workers - Inhalation; Short term local effects: 0.6 mg/m<sup>3</sup>

Workers - Inhalation; Long term local effects: 0.3 mg/m<sup>3</sup>

### DIPHENYLMETHANE-4,4'-DI-ISOCYANATE (CAS: 101-68-8)

**DNEL**

Workers - Inhalation; Long term local effects: 0.05 mg/m<sup>3</sup>

Workers - Inhalation; Short term local effects: 0.1 mg/m<sup>3</sup>

## 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. Polyvinyl 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.

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**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

<b>Appearance</b>	Liquid.
<b>Colour</b>	Clear liquid.
<b>pH</b>	pH (concentrated solution): 7 @ 25 °C
<b>Melting point</b>	n/d°C
<b>Initial boiling point and range</b>	>149.°C @
<b>Flash point</b>	>204.4°C TCC (Tag closed cup).
<b>Vapour pressure</b>	Not determined.
<b>Relative density</b>	1.03 @ 25 °C°C
<b>Viscosity</b>	3.2-8.5 Pa s @ °C

#### 9.2. Other information

**Other information** Not available.

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

**Reactivity** Alcohols, glycols. Amines. Alkalis.

#### 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 (NO<sub>x</sub>). Oxides of the following substances: Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). 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

<b>Inhalation</b>	Irritating to respiratory system. May cause sensitisation by inhalation.
<b>Skin contact</b>	Irritating to skin. May cause sensitisation or allergic reactions in sensitive individuals.
<b>Acute and chronic health hazards</b>	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 (LD<sub>50</sub> mg/kg) 18,200.0

Species Rat

ATE oral (mg/kg) 18,200.0

#### Acute toxicity - dermal

Acute toxicity dermal (LD<sub>50</sub> 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** LC<sub>50</sub>, 96 hours: 1.2mg/l mg/l, Algae

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: >500mg/l 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** Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).



## R-Flex Resin

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

#### SECTION 16: Other information

<b>Revision date</b>	03/04/2018
<b>Revision</b>	2
<b>Supersedes date</b>	20/11/2017
<b>SDS number</b>	20766
<b>Hazard statements in full</b>	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.