| SEALS+DIRECT | DESCRIPTION<br>2 PART WATERPROOF CONTACT ADHESIVE |  | DOCUMENT NO.<br>**A 262 MSDS** |
|---|---|---|---|

bsi ISO 9001 Quality Management Systems CERTIFIED
Certificate Number: FS 807117

# MATERIAL SAFETY DATA SHEET

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830

## ADHESIVE PART A

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product identifier

| | |
|---|---|
| Product Name | A262 Waterproof Contact Adhesive Part A |
| CAS No. | Not applicable. |
| EC No. | Not applicable. |
| REACH Registration No. | Not known. |

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

| | |
|---|---|
| Identified Use(s) | Industrial use only. Adhesive Applications. Uses Advised Against<br>Not known. |

### 1.3 Details of the supplier of the safety data sheet

Manufacturer

| | |
|---|---|
| Company Identification<br>Address of Manufacturer | Seals + Direct Ltd.<br>Unit 6 Milton Business Centre<br>Wick Drive, New Milton<br>Hampshire, BH25 6RH, UK |
| Telephone | +44 (0) 1425 627722 |
| E-mail | sales@sealsplusdirect.co.uk |
| Office hours | 8:30am to 5:00pm Monday – Thursday, 8:30am to 4:30pm Friday |

### 1.4 Emergency telephone number

| | |
|---|---|
| Emergency Phone Number.<br>Contact | +44 (0) 1425 627722<br>Office Hours |
| National Response Centre<br>Address | National Poisons Information Service (Birmingham Centre)<br>City Hospital, Dudley Road, Birmingham, UK |
| Emergency Phone No. | +00 448 706 006 266 or NHS 111 |

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

| | |
|---|---|
| Regulation (EC) No. 1272/2008 (CLP) | Aquatic Chronic 1: Very toxic to aquatic life with long lasting effects.<br>Eye Irritant 2: Causes serious eye irritation.<br>Flammable Liquid 2: Highly flammable liquid and vapour.<br>Reproduction 2: Suspected of damaging fertility or the unborn child.<br>Skin Irritant 2: Causes skin irritation.<br>STOT RE 2: May cause damage to organs through prolonged or repeated exposure.<br>STOT SE 3: May cause drowsiness or dizziness. |

# MATERIAL SAFETY DATA SHEET

## 2.2 Label elements

According to Regulation (EC) No. 1272/2008 (CLP)

Product Name: Anglo 4418

Hazard Pictogram(s)

GHS02 GHS08 GHS07 GHS09

Signal Word(s): Danger

Hazard Statement(s):
H225: Highly flammable liquid and vapour.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H336: May cause drowsiness or dizziness.
H361: Suspected of damaging fertility or the unborn child.
H373: May cause damage to organs through prolonged or repeated exposure.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statement(s):
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233: Keep container tightly closed.
P242: Use non-sparking tools.
P243: Take action to prevent static discharges.
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
P264: Wash hands and exposed skin thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing 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.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P332+P313: If skin irritation occurs: Get medical advice/attention.
P362+P364: Take off contaminated clothing and wash it before reuse.
P370+P378: In case of fire: Use to extinguish.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P501: Dispose of contents in accordance with local, state or national legislation.

## 2.3 Other hazards

None known.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

## 3.1 Substances

Not applicable.

### 3.2 Mixtures

| HAZARDOUS INGREDIENT(S) | CAS No. | EC No. / REACH Registration No. | %W/W | Hazard Statement(s) | Hazard Pictogram(s) |
|---|---|---|---|---|---|
| Naphtha (petroleum), hydrotreated light Low boiling point hydrogen treated naphtha [A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C4 through C11 and boiling in the range of approximately minus 20°C to 190°C (-4°F to 374°F).] | 64742-49-0 | 265-151-9 | 15-40 | Asp. Tox. 1 H304 Muta. 1B H340 Carc. 1B H350 | GHS08 |
| butanone ethyl methyl ketone | 78-93-3 | 201-159-0 | 20-45 | Flam. Liq. 2 H225 Eye Irrit. 2 H319 STOT SE 3 H336 | GHS02 GHS07 |
| toluene | 108-88-3 | 203-625-9 | 10-30 | Flam. Liq. 2 H225 Asp. Tox. 1 H304 Skin Irrit. 2 H315 STOT SE 3 H336 Repr. 2 H361d STOT RE 2 H373 | GHS02 GHS08 GHS07 |
| acetone propan-2-one propanone | 67-64-1 | 200-662-2 | 1-15 | Flam. Liq. 2 H225 Eye Irrit. 2 H319 STOT SE 3 H336 | GHS02 GHS07 |
| zinc oxide | 1314-13-2 | 215-222-5 | <1 | Aquatic Acute 1 H400 Aquatic Chronic 1 H410 | GHS09 |

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of first aid measures

| | |
|---|---|
| Inhalation | Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. |
| Skin Contact | Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. Specific treatment (see Medical Advice on this label). Take off immediately all contaminated clothing. Rinse skin with water. IF exposed or concerned: |
| Eye Contact | Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. If eye irritation persists: |
| Ingestion | IF exposed or concerned: Get medical advice/attention. |

### 4.2 Most important symptoms and effects, both cure and delayed

Causes burns.

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

Specific treatment (see Medical Advice on this label). Call a POISON CENTER / Doctor if you feel unwell. Treat symptomatically.

## SECTION 5: FIREFIGHTING MEASURES

### 5.1 Extinguishing media

| | |
|---|---|
| Suitable extinguishing media | Use to extinguish. |
| Unsuitable extinguishing media | Water jet spray. |

### 5.2 Special hazards arising from the substance or mixture

Highly flammable liquid and vapour. May decompose in a fire, giving off toxic and irritant vapours.

### 5.3 Advice for firefighters

Fire fighters should wear complete protective clothing including self-contained breathing apparatus. If it is safe to do so, containers should be removed from fire area because they are likely to rupture under fire conditions.

## SECTION 6: ACCIDENTAL RLEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems. Ensure full personal protection (including respiratory protection) during removal of spillages.

### 6.2 Environmental precautions

Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

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

Adsorb spillages onto sand, earth or any suitable adsorbent material. Contain spillages with sand, earth or any suitable adsorbent material. Earth may be shovelled to contain spillage and to avoid contamination of sewers and watercourses.

## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Use explosion-proof [electrical/ventilating/lighting/…] equipment. Use non-sparking tools. Take action to prevent static discharges. Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. Wash hands and exposed skin thoroughly after handling. Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

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

Store in a well-ventilated place. Keep cool. Keep container tightly closed.
Store locked up.

Storage temperature: Ambient.
Storage life: Stable under normal conditions.
Incompatible materials: None Known.

### 7.3 Specific end use(s)

Industrial use only. Adhesive applications.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

8.1.1 Occupational exposure limits

| Occupational Exposure Limits | | | | | | |
|---|---|---|---|---|---|---|
| **SUBSTANCE** | **CAS No** | **LTEL (8 hr TWA ppm)** | **LTEL (8 hr TWA mg/m³)** | **STEL (ppm)** | **STEL (mg/m³)** | **Note** |
| Butan-2-one (methyl ethyl ketone) | 78-93-3 | 200 | 600 | 300 | 899 | Sk, BMGV |
| Toluene | 108-88-3 | 50 | 191 | 100 | 384 | Sk |
| Acetone | 67-64-1 | 500 | 1210 | 1500 | 3620 | |

| Region | Source |
|---|---|
| Europe | EU Occupational Exposure Limits |
| United Kingdom | Workplace Exposure Limits (WEL) |
| | |
| **Remark** | **Notes** |
| Sk | Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity. |
| BMGV | Biological monitoring guidance values are listed in Table 2. |

| Biological Exposure Indices | | | | | | |
|---|---|---|---|---|---|---|
| **Substances** | **CAS Number** | **Sampling** | **Tissues** | **Control parameters** | **Biological monitoring guidance value** | **Comments** |
| Butan-2-one | 78-93-3 | Post shift | urine | butan-2-one | 70 µmol /L | |

### 8.2 Exposure controls

8.2.1 Appropriate engineering controls

Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems. Use with ventilation, local exhaust ventilation or breathing protection. A washing facility/water for eye and skin cleaning purposes should be present.

8.2.2 Personal protection equipment

Eye Protection — Wear eye protection with side protection (EN166).

Skin Protection — Wear protective clothing and gloves: Impervious gloves (EN 374).

Respiratory Protection — A suitable mask with filter type A (EN14387 or EN405) may be appropriate.

Thermal Hazards — None known.

8.2.3 Environmental exposure

Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Appearance | Liquid. |
| Colour | Brownish. |
| Odour | Characteristic. |
| Odour threshold | Not known. |
| pH | Not known. |
| Melting point/freezing point | Not known. |
| Initial boiling point and boiling range | Not known. |
| Flash Point | -18°C |
| Evaporation rate | Not known. |
| Flammability (solid, gas) | Not known. |
| Upper/lower flammability or explosive limits | Not known. |
| Vapour pressure | Not known. |
| Vapour density | Not known. |
| Density (g/ml) | Not known. |
| Relative density | 0.9 @ 20°C |
| Solubility(ies) | Solubility (Water): Slightly miscible in water<br>Solubility (Other): Not known |
| Partition coefficient: n-octanol/ water | Not known. |
| Auto-ignition temperature | Not known. |
| Decomposition Temperature (°C) | Not known. |
| Viscosity | Not known. |
| Explosive properties | Not known. |

| | |
|---|---|
| Oxidising properties | Not known. |

**9.2 Other information**

None.

## SECTION 10: STABILITY AND REACTIVITY

**10.1 Reactivity**

None anticipated.

**10.2 Chemical stability** Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

No hazardous reactions known if used for its intended purpose.

**10.4 Conditions to avoid**

Avoid friction, sparks, or other means of ignition.

**10.5 Incompatible materials**

Not known.

**10.6 Hazardous decomposition products**

No hazardous decomposition products known.

## SECTION 11: TOXICOLOGICAL INFORMATION

**11.1 Information on toxicological effects**

| | |
|---|---|
| Acute toxicity - Ingestion | Low acute toxicity |
| Acute toxicity - Skin Contact | Low acute toxicity |
| Acute toxicity - Inhalation | Low acute toxicity |
| Skin corrosion/irritation | Self classification: Causes skin irritation. |
| Serious eye damage/irritation | Self classification: Causes serious eye irritation. |
| Skin sensitization data | Not classified |
| Respiratory sensitization data | Not classified |
| Germ cell mutagenicity | There is no evidence of mutagenic |
| potential. Carcinogenicity | No evidence of carcinogenicity. |
| Reproductive toxicity | Self classification: Suspected of damaging fertility or the unborn |
| child. Lactation | Not classified |
| STOT - single exposure | Self classification: May cause drowsiness or dizziness. |
| STOT - repeated exposure | Self classification: May cause damage to organs through prolonged or repeated exposure. |
| Aspiration hazard | Not classified |

**11.2 Other information**

Not known.

## SECTION 12: ECOLOGICAL INFORMATION

**12.1 Toxicity**

Very toxic to aquatic life with long lasting effects

| | |
|---|---|
| Toxicity - Aquatic invertebrates | Not known. |
| Toxicity - Fish | Not known. |
| Toxicity - Algae | Not known. |
| Toxicity - Sediment Compartment | Not classified. |
| Toxicity - Terrestrial Compartment | Not classified. |

**12.2 Persistence and degradation**

Not known.

**12.3 Bioaccumulative potential**

Not known.

**12.4 Mobility in soil**

Not known.

**12.5 Results of PBT and vPvB assessment**

Not known.

**12.6 Other adverse effects**

Not known.

## SECTION 13: DISPOSAL CONSIDERATIONS

**13.1 Waste treatment methods**

Dispose of contents in accordance with local, state or national legislation. Recycle only completely emptied packaging. Containers must not be punctured or destroyed by burning, even when empty. Do not allow to enter drains, sewers or watercourses. Do NOT landfill. Normal disposal is via incineration operated by an accredited disposal contractor. Send to a licensed recycler, reclaimer or incinerator. Dispose of this material and its container to hazardous or special waste collection point.

**13.2 Additional information**

Disposal should be in accordance with local, state or national legislation.

## SECTION 14: TRANSPORT INFORMATION

**14.1 UN number**

1133

**14.2 UN proper shipping name**

ADHESIVES containing flammable liquid

**14.3 Transport hazard class(es)**

**ADR/RID**

| | |
|---|---|
| Class | 3 |

# MATERIAL SAFETY DATA SHEET

| | |
|---|---|
| ADR Classification Code | F1 |
| Special Provisions | 640E |
| Limited Quantities | 5 L |
| Excepted Quantities | E1 |
| Emergency Action Code | •3Y |
| Mixed Packing Instructions for Packages | P001 IBC03 LP01 R001 |
| Special Packing Provisions for Packages | PP1 |
| Mixed Packing Instructions for Packages | MP19 |
| Packing Instructions for Portable Tanks | T2 |
| Special Provisions for Portable Tanks | TP1 |
| Tank Code for Tanks | LGBF |
| Special Provisions for Tanks | Not applicable |
| Vehicle for Tank Carriage | FL |
| ADR Transport Category | 3 |
| Tunnel Restriction Code | D/E |
| Special Provisions for Carriage – Packages | V12 |
| Special Provisions for Carriage – Bulk | Not applicable |
| Special Provisions for Carriage – Loading, Unloading and Handling | Not applicable |
| Special Provisions for Carriage – Operation | S2 |
| ADR HIN | 30 |

**IMDG**

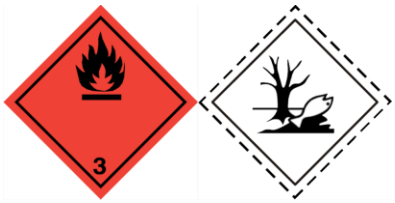
| | |
|---|---|
| Class | 3 |
| Special Provisions | 640E |
| Limited Quantities | 5 L |
| Excepted Quantities | E1 |
| Mixed Packing Instructions for Packages | P001 IBC03 LP01 R001 |
| Special Packing Provisions for Packages | PP1 |
| Packing Instructions for Portable Tanks | T2 |
| **Special Provisions for Portable Tanks** | **TP1** |
| IMDG EMS | F-E, S-D |
| Stowage and Handling | A |
| Segregation | Not determined |

**ICAO/IATA**

| | |
|---|---|
| Excepted Quantities | E1 |
| Passenger and Cargo Aircraft Limited Quantities Packing Instructions | Y344 |
| Passenger and Cargo Aircraft Limited Quantities Max net Qty | 10L |
| Passenger and Cargo Aircraft Packing Instructions | 355 |
| Passenger and Cargo Aircraft | 60L |

| | |
|---|---|
| Max net Qty | |
| Cargo Aircraft Packing Instructions | 366 |
| Cargo Aircraft Max net Qty | 220L |
| Special Provisions | A3 |
| Emergency Response Guidebook (ERG) Code | 3L |

Labels 3




**14.4 Packing group**

III

**14.5 Environmental Hazards**

Classified as a Marine Pollutant

**14.6 Special precautions for user**

Not known.

**14.7 Transport in bulk according to Annex II of Marpol and the IBC code**

No information available.

## SECTION 15: REGULATORY INFORMATION

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

European Regulations – Authorisations and / or restrictions on use

| | |
|---|---|
| Candidate List of Substances of Very High Concern for Authorisation | Not Listed. |
| REACH: ANNEX XIV list of substances subject to authorisation | Not Listed. |
| REACH: Annex XVII Restrictions on the manufacture, placing on market and use of certain dangerous substances, mixtures and articles | Toluene (108-88-3), acetone propan-2-one propanone (67-64-1), butanone ethyl methyl ketone (78-93-3), Naphtha (petroleum), hydrotreated light Low the boiling point hydrogen treated naphtha [A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C4 through C11 and boiling in the range of approximately minus 20°C to 190°C (-4°F to 374°F).] (64742-49-0) |
| Community Rolling Action Plan (CoRAP) | Toluene (108-88-3), Zinc oxide (1314-13-2) |
| Regulation (EC) No 850/2004 of the European Parliament and of the Council on persistent organic pollutants | Not listed. |

| | |
|---|---|
| Regulation (EC) N° 2037/2000 on substances that deplete the ozone layer | Not listed. |
| Regulation (EU) N° 649/2012 of the European Parliament and of the Council concerning the export and import of hazardous chemicals | Not listed. |
| National Regulations | |
| Other | Not known. |

**15.2 Chemical Safety Assessment**

A REACH chemical safety assessment has not been carried out.

## SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements:

Legend

Hazard Pictogram(s)

GHS02 GHS08 GHS07 GHS09

Hazard classification

Aquatic Acute 1: Hazardous to the aquatic environment, Acute, Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment, Chronic, Category 1 Asp. Tox. 1: Aspiration hazard, Category 1
Carc. 1B: Carcinogenicity, Category 1B
Eye Irrit. 2: Serious eye damage/irritation, Category 2
Flam. Liq. 2: Flammable liquid, Category 2
Muta. 1B: Germ cell mutagenicity, Category
1B Repr. 2: Reproductive toxicity, Category 2
STOT RE 2: Specific target organ toxicity — repeated exposure, Category 2
STOT SE 3_H336: Specific target organ toxicity — single exposure, Category 3
Skin Irrit. 2: Skin corrosion/irritation, Category 2

Hazard Statement(s)

H225: Highly flammable liquid and vapour.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H336: May cause drowsiness or dizziness.
H340: May cause genetic defects.
H350: May cause cancer.
H361: Suspected of damaging fertility or the unborn child.
H361d: Suspected of damaging the unborn child.
H373: May cause damage to organs through prolonged or repeated exposure.

H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statement(s)

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233: Keep container tightly closed.
P240: Ground and bond container and receiving equipment.
P241: Use explosion-proof [electrical/ventilating/lighting/…] equipment.
P242: Use non-sparking tools.
P243: Take action to prevent static discharges.
P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
P264: Wash hands and exposed skin thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection / hearing protection.
P302+P352: IF ON SKIN: Wash with plenty of water.
P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with 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.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P312: Call a POISON CENTER/doctor if you feel unwell.
P314: Get medical advice/attention if you feel unwell.
P321: Specific treatment (see Medical Advice on this label).
P332+P313: If skin irritation occurs: Get medical advice/attention.
P337+P313: If eye irritation persists: Get medical advice/attention.
P362+P364: Take off contaminated clothing and wash it before reuse.
P370+P378: In case of fire: Use to extinguish.
P391: Collect spillage.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P403+P235: Store in a well-ventilated place. Keep cool.
P405: Store locked up.
P501: Dispose of contents in accordance with local, state or national legislation.

Acronyms

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS: Chemical Abstracts Service
CLP: Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DNEL: Derived No Effect Level
EC: European Community
EINECS: European Inventory of Existing Commercial Chemical Substances
IATA: International Air Transport Association
IBC: Intermediate Bulk Container
ICAO: International Civil Aviation Organization
IMDG: International Maritime Dangerous Goods
LTEL: Long term exposure limit
PBT: Persistent, Bioaccumulative and Toxic

PNEC: Predicted No Effect Concentration
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail
STEL: Short term exposure limit
STOT: Specific Target Organ Toxicity
UN: United Nations
vPvB: very Persistent and very Bioaccumulative

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## CURING AGENT PART B

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

| | |
|---|---|
| Product form | Mixture |
| Product name | A262 Curing Agent Part B |
| Product code UFI | 3695 2H00-C0TV-P00Y-15CM |

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

1.2.1 Relevant identified uses

Use of the substance/mixture Adhesive

1.2.2 Uses advised against

No additional information available

### 1.3 Details of the supplier of the safety data sheet

Seals + Direct Ltd.
Unit 6 Milton Business Centre
Wick Drive, New Milton
Hampshire, BH25 6RH, UK
Telephone: +44 (0)1425 617722
E-mail: sales@sealsplusdirect.co.uk

### 1.4 Emergency telephone number

Emergency number: +44 (0)1425 617722 (Office hours only, English language only) or NHS 111

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

| | |
|---|---|
| Flam. Liq. 2 | H225 |
| Skin Irrit. 2 | H315 |
| Eye Irrit. 2 | H319 |
| Resp. Sens. 1 | H334 |
| Skin Sens. 1 | H317 |
| Carc. 2 | H351 |
| STOT SE 3 | H336 |
| STOT SE 3 | H335 |
| STOT RE 2 | H373 |

Full text of hazard classes and H-statements: see section 16
Adverse physicochemical, human health and environmental effects
No additional information available

**2.2. Label elements**

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)

| | |
|---|---|
| Signal word (CLP) | Danger |
| Contains | Ethyl acetate; Diphenylmethane Diisocyanate, isomers and homologues |
| Hazard statements (CLP) | H225 - Highly flammable liquid and vapour.<br>H315 - Causes skin irritation.<br>H317 - May cause an allergic skin reaction.<br>H319 - Causes serious eye irritation.<br>H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.<br>H335 - May cause respiratory irritation.<br>H336 - May cause drowsiness or dizziness.<br>H351 - Suspected of causing cancer.<br>H373 - May cause damage to organs (respiratory system) through prolonged or repeated exposure (if inhaled). |
| Precautionary statements (CLP) ignition | P210 - Keep away from heat, hot surfaces, sparks, open flames and other sources. No smoking.<br>P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.<br>P342+P311 - If experiencing respiratory symptoms: Call doctor.<br>P403+P235 - Store in a well-ventilated place. Keep cool. |
| EUH-statements | EUH204 - Contains isocyanates. May produce an allergic reaction. |
| Extra phrases | Persons already sensitised to diisocyanates may develop allergic reactions when using this product.<br>Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. |

This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387) is used.

### 2.3 Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Not Applicable

### 3.2 Mixtures

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|---|---|---|---|
| Ethyl acetate | (CAS-No.) 141-78-6<br>(EC No.) 205-500-4<br>(EC index No.) 607-022-00-5<br>(REACH-no) 01-2119475103-46- XXXX | 60 - 100 | Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336 |
| Diphenylmethane Diisocyanate, isomers and homologues | (CAS-No.) 9016-87-9<br>(EC index No.) 615-005-00-9<br>(REACH-no) 01-2119457024-46- XXXX | 10 - 30 | Acute Tox. 4 (Inhalation), 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 |
| Diphenylmethane-4,4'-di-isocyanate | (CAS-No.) 101-68-8<br>(EC No.) 202-966-0<br>(EC index No.) 615-005-00-9<br>(REACH-no) 01-2119457014-47- XXXX | 5 - 10 | Acute Tox. 4 (Inhalation), 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 |
| o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate | (CAS-No.) 5873-54-1<br>(EC No.) 227-534-9<br>(EC index No.) 615-005-00-9<br>(REACH-no) 01-2119480143-45- XXXX | < 1 | Carc. 2, H351<br>Acute Tox. 4 (Inhalation), H332 STOT RE 2, H373<br>Eye Irrit. 2, H319<br>STOT SE 3, H335<br>Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317 |
| 2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate | (CAS-No.) 2536-05-2<br>(EC No.) 219-799-4<br>(EC index No.) 615-005-00-9<br>(REACH-no) 01-2119927323-43- XXXX | < 1 | Carc. 2, H351<br>Acute Tox. 4 (Inhalation), H332 STOT RE 2, H373<br>Eye Irrit. 2, H319<br>STOT SE 3, H335<br>Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317 |

## 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 to fresh air, keep the patient warm and at rest. If symptoms develop, obtain medical attention. |
| First-aid measures after skin contact | Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation or rash occurs: Get medical advice/attention. |
| First-aid measures after eye contact | Rinse cautiously with water for several minutes. Ensure that folded skin of eyelids are thoroughly washed with water. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. |
| First-aid measures after ingestion | Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth. Give 100 - 200 ml of water to drink. Obtain medical attention. |

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

| | |
|---|---|
| Symptoms/effects after inhalation | May cause drowsiness or dizziness. Nausea. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Even minimal concentrations of isocyanate can lead to a reaction in sensitised people. Symptoms that may occur include the following: irritation of the eyes, nose, throat and lungs, possibly together with a dry throat, a feeling of chest tightness and breathing difficulties. The symptoms may only arise several hours after exposure. |
| Symptoms/effects after skin contact | Causes skin irritation. May cause an allergic skin reaction. Animal research has shown that skin contact with substances known to have a sensitising effect on airways, such as diisocyanate, can cause airways to be sensitised. |
| Symptoms/effects after eye Contact | Causes serious eye irritation. |
| Symptoms/effects after ingestion | Ingestion may cause discomfort. May cause stomach pain or vomiting if ingested. |
| Chronic symptoms | Suspected of causing cancer. May cause damage to organs (respiratory system) through prolonged or repeated exposure (if inhaled). |

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

In instances of existing sensitisation towards isocyanates, a doctor should be consulted with regards to work-related contact with other sensitising substances, or substances which irritate the airway. Treatment for exposure should be geared towards monitoring symptoms and the patient's clinical condition. It must be ensured that the patient has sufficient ventilation and oxygen supply. Isocyanates can cause sensitisation of the airways, or asthma-like symptoms (bronchospasms). Delayed breathing symptoms, including lung oedema, may occur. People who have shown signs of breathlessness after considerable exposure should remain under observation for 24-48 hours.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

| | |
|---|---|
| Suitable extinguishing media | Alcohol-resistant foam. Carbon dioxide. Dry chemical. For large fire: Water spray. |
| Unsuitable extinguishing media | Do not use water jet |

### 5.2 Advice for firefighters

| | |
|---|---|
| Firefighting instructions | Move containers from fire area if you can do it without risk. Cool closed containers exposed to fire with water spray. Exercise caution when fighting any chemical fire. Avoid fire-fighting water entering the environment. |
| Protection during firefighting | As in any fire, wear self-contained breathing apparatus and full protective gear. |

## SECTION 6: Accidental release

### 6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

| | |
|---|---|
| Emergency procedure | Remove ignition sources. Ventilate area. Do not breath vapours. Avoid contact with eyes, skin and clothing. Evacuate unnecessary personnel. |

6.1.2 For emergency responders

| | |
|---|---|
| Protective equipment | Use personal protective equipment as required. In case of inadequate ventilation wear respiratory protection. See Section 8. |
| Emergency procedures | Remove ignition sources. Use only non-sparking tools. Ventilate area. Do not breathe vapours. Avoid contact with eyes, skin and clothing. |

### 6.2 Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if large amounts of the product enters sewers or public waters.

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

| | |
|---|---|
| For containment | Stop leak, if possible, without risk. Dam up the liquid spill. |
| Methods for cleaning up | Liquid: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Cured product: Pick up mechanically. Dispose in a safe manner in accordance with local/national regulations. |

### 6.4 Reference to other sections

Section 8: Exposure controls/personal protection.
Section 13: Disposal considerations.

## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for safe handling

| | |
|---|---|
| Additional hazards when | Handle empty containers with care because residual vapours are processed flammable. |
| Precautions for safe handling | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Use only non-sparking tools. Take precautionary measures against static discharge. Use explosion-proof equipment. Do not handle until all safety precautions have been read and understood. Avoid contact with skin, eyes and clothing. Do not breathe |

vapours. Provide good ventilation in process area to prevent formation of vapour. Use only outdoors or in a well-ventilated area.

Hygiene measures — Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace.

**7.2 Conditions for safe storage, including any incompatibilities**

Storage conditions — Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep only in original container. Store tightly closed in a dry, cool and well- ventilated place.

Incompatible materials — Strong oxidising agents. Strong acids. Strong alkalis.

Storage temperature — +5°C to +25°C

**7.3 Specific end uses**

Adhesive.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1 Control parameters**

8.1.1 National occupational exposure and biological limit values

| **Ethyl acetate (141-78-6)** | |
|---|---|
| **EU - Indicative Occupational Exposure Limit (IOEL)** | |
| Local name | Ethyl acetate |
| IOELV TWA (mg/m³) | 734 mg/m³ |
| IOELV TWA (ppm) | 200 ppm |
| IOELV STEL (mg/m³) | 1468 mg/m³ |
| IOELV STEL (ppm) | 400 ppm |
| Regulatory reference | COMMISSION DIRECTIVE (EU) 2017/164 |
| **Ireland - Occupational Exposure Limits** | |
| Local name | Ethyl acetate |
| OEL (8 hours ref) (mg/m³) | 734 mg/m³ |
| OEL TWA [2] | 200 ppm |
| OEL (15 min ref) (mg/m3) | 1468 mg/m³ |
| OEL STEL [ppm] | 400 ppm |
| Notes (IE) | IOELV (Indicative Occupational Exposure Limit Values) |
| Regulatory reference | Chemical Agents Code of Practice 2020 |
| **United Kingdom - Occupational Exposure Limits** | |
| Local name | Ethyl acetate |
| WEL TWA (mg/m³) | 734 mg/m³ |

| | |
|---|---|
| WEL TWA (ppm) | 200 ppm |
| WEL STEL (mg/m³) | 1468 mg/m³ |

| **Ethyl acetate (141-78-6)** | |
|---|---|
| WEL STEL (ppm) | 400 ppm |
| Regulatory reference | EH40/2005 (Fourth edition, 2020). HSE |

| **Diphenylmethane Diisocyanate, isomers and homologues (9016-87-9)** | |
|---|---|
| **Ireland - Occupational Exposure Limits** | |
| Local name | Isocyanates, All, (as -NCO) except Methyl isocyanate and Toluene (2,4 or 2,6 diisocyanate) |
| OEL (8 hours ref) (mg/m³) | 0.02 mg/m³ |
| OEL (15 min ref) (mg/m3) | 0.07 mg/m³ |
| Notes (IE) | Sens. (In the workplace respiratory or dermal exposures to sensitising agents may occur. Sensitizers may evoke respiratory or dermal reactions, e.g. asthma, rhinitis and allergic contact dermatitis. The notation does not distinguish between respiratory or dermal sensitisation. Chemical agents that are sensitizers present special problems in the workplace. Should an employee become sensitised, subsequent exposure may cause intense responses, even at low exposure concentrations well below the OELV. Exposure should be eliminated or significantly reduced through control measures such as engineering and process controls and use of personal protective equipment (PPE)) |
| Regulatory reference | Chemical Agents Code of Practice 2020 |
| **Ireland - Biological limit values** | |
| Local name | Isocyanates |
| BLV | 1 µmol/mol creatinine Parameter: urinary diamine - Medium: urine - Sampling time: Post task |
| Regulatory reference | Biological Monitoring Guidelines (HSA, 2011) |
| **United Kingdom - Occupational Exposure Limits** | |
| Local name | Isocyanates, all (as –NCO) |
| WEL TWA (mg/m³) | 0.02 mg/m³ |
| WEL STEL (mg/m³) | 0.07 mg/m³ |
| Remark (WEL) | Sen |
| Regulatory reference | EH40/2005 (Fourth edition, 2020). HSE |
| **United Kingdom - Biological limit values** | |
| Local name | Isocyanates (applies to HDI, IPDI, TDI and MDI) |
| BMGV | 1 µmol/mol creatinine Parameter: isocyanate-derived diamine - Medium: urine - Sampling time: At the end of the period of exposure |
| Regulatory reference | EH40/2005 (Fourth edition, 2020). HSE |

| **Diphenylmethane-4,4'-di-isocyanate (101-68-8)** | |
|---|---|
| **Ireland - Occupational Exposure Limits** | |
| Local name | 4,4'-Methylene-diphenyl diisocyanate (as —NCO) [MDI] |
| OEL TWA [2] | 0.005 ppm |

| **Diphenylmethane-4,4'-di-isocyanate (101-68-8)** | |
|---|---|
| Notes (IE) | Sens. (In the workplace respiratory or dermal exposures to sensitising agents may occur. Sensitizers may evoke respiratory or dermal reactions, e.g. asthma, rhinitis and allergic contact dermatitis. The notation does not distinguish between respiratory or dermal sensitisation. Chemical agents that are sensitizers present special problems in the workplace. Should an employee become sensitised, subsequent exposure may cause intense responses, even at low exposure concentrations well below the OELV. Exposure should be eliminated or significantly reduced through control measures such as engineering and process controls and use of personal protective equipment (PPE)) |
| Regulatory reference | Chemical Agents Code of Practice 2020 |
| **Ireland - Biological limit values** | |
| Local name | Isocyanates |
| BLV | 1 µmol/mol creatinine Parameter: urinary diamine - Medium: urine - Sampling time: Post task |
| Regulatory reference | Biological Monitoring Guidelines (HSA, 2011) |
| **United Kingdom - Occupational Exposure Limits** | |
| Local name | Isocyanates, all (as –NCO) |
| WEL TWA (mg/m³) | 0.02 mg/m³ |
| WEL STEL (mg/m³) | 0.07 mg/m³ |
| Remark (WEL) | Sen |
| Regulatory reference | EH40/2005 (Fourth edition, 2020). HSE |
| **United Kingdom - Biological limit values** | |
| Local name | Isocyanates (applies to HDI, IPDI, TDI and MDI) |
| BMGV | 1 µmol/mol creatinine Parameter: isocyanate-derived diamine - Medium: urine - Sampling time: At the end of the period of exposure |
| Regulatory reference | EH40/2005 (Fourth edition, 2020). HSE |

| **o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)** | |
|---|---|
| **Ireland - Occupational Exposure Limits** | |
| Local name | Isocyanates, All, (as -NCO) except Methyl isocyanate and Toluene (2,4 or 2,6 diisocyanate) |
| OEL (8 hours ref) (mg/m³) | 0.02 mg/m³ |
| OEL (15 min ref) (mg/m3) | 0.07 mg/m³ |

| | |
|---|---|
| Notes (IE) | Sens. (In the workplace respiratory or dermal exposures to sensitising agents may occur. Sensitizers may evoke respiratory or dermal reactions, e.g. asthma, rhinitis and allergic contact dermatitis. The notation does not distinguish between respiratory or dermal sensitisation. Chemical agents that are sensitizers present special problems in the workplace. Should an employee become sensitised, subsequent exposure may cause intense responses, even at low exposure concentrations well below the OELV. Exposure should be eliminated or significantly reduced through control measures such as engineering and process controls and use of personal protective equipment (PPE)) |
| Regulatory reference | Chemical Agents Code of Practice 2020 |
| **Ireland - Biological limit values** | |
| Local name | Isocyanates |
| BLV | 1 µmol/mol creatinine Parameter: urinary diamine - Medium: urine - Sampling time: Post task |
| Regulatory reference | Biological Monitoring Guidelines (HSA, 2011) |
| **United Kingdom - Occupational Exposure Limits** | |
| Local name | Isocyanates |
| WEL TWA (mg/m³) | 0.02 mg/m³ all (as –NCO) Except methyl isocyanate |
| WEL STEL (mg/m³) | 0.07 mg/m³ all (as –NCO) Except methyl isocyanate |
| Remark (WEL) | Sen (Capable of causing occupational asthma) |
| Regulatory reference | EH40/2005 (Fourth edition, 2020). HSE |
| **United Kingdom - Biological limit val**ues | |
| Local name | Isocyanates (applies to HDI, IPDI, TDI and MDI) |
| BMGV | 1 µmol/mol creatinine Parameter: isocyanate-derived diamine - Medium: urine - Sampling time: At the end of the period of exposure |
| Regulatory reference | EH40/2005 (Fourth edition, 2020). HSE |

| **2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)** | |
|---|---|
| **Ireland - Occupational Exposure Limits** | |
| Local name | Isocyanates, All, (as -NCO) except Methyl isocyanate and Toluene (2,4 or 2,6 diisocyanate) |
| OEL (8 hours ref) (mg/m³) | 0.02 mg/m³ |
| OEL (15 min ref) (mg/m3) | 0.07 mg/m³ |
| Notes (IE) | Sens. (In the workplace respiratory or dermal exposures to sensitising agents may occur. Sensitizers may evoke respiratory or dermal reactions, e.g. asthma, rhinitis and allergic contact dermatitis. The notation does not distinguish between respiratory or dermal sensitisation. Chemical agents that are sensitizers present special problems in the workplace. Should an employee become sensitised, subsequent exposure may cause intense responses, even at low exposure concentrations |

| | |
|---|---|
| | well below the OELV. Exposure should be eliminated or significantly reduced through control measures such as engineering and process controls and use of personal protective equipment (PPE)) |
| Regulatory reference | Chemical Agents Code of Practice 2020 |
| **Ireland - Biological limit values** | |
| Local name | Isocyanates |
| BLV | 1 µmol/mol creatinine Parameter: urinary diamine - Medium: urine - Sampling time: Post task |
| Regulatory reference | Biological Monitoring Guidelines (HSA, 2011) |
| **United Kingdom - Occupational Exposure Limits** | |
| Local name | Isocyanates |
| WEL TWA (mg/m³) | 0.02 mg/m³ all (as –NCO) Except methyl isocyanate |
| WEL STEL (mg/m³) | 0.07 mg/m³ all (as –NCO) Except methyl isocyanate |
| Remark (WEL) | Sen (Capable of causing occupational asthma) |
| Regulatory reference | EH40/2005 (Fourth edition, 2020). HSE |
| **United Kingdom - Biological limit values** | |
| Local name | Isocyanates (applies to HDI, IPDI, TDI and MDI) |
| BMGV | 1 µmol/mol creatinine Parameter: isocyanate-derived diamine - Medium: urine - Sampling time: At the end of the period of exposure |
| Regulatory reference | EH40/2005 (Fourth edition, 2020). HSE |

8.1.2 Recommended monitoring procedures

No additional information available.

8.1.3 Air contaminants formed

No additional information available.

8.1.4 DNEL and PNEC

| **Ethyl acetate (141-78-6)** | |
|---|---|
| **DNEL/DMEL (Workers)** | |
| Acute - systemic effects, inhalation | 1468 mg/m³ |
| Acute - local effects, inhalation | 1468 mg/m³ |
| Long-term - systemic effects, dermal | 63 mg/kg bodyweight/day |
| Long-term - systemic effects, inhalation | 734 mg/m³ |
| Long-term - local effects, inhalation | 734 mg/m³ |
| **DNEL/DMEL (General population)** | |
| Acute - systemic effects, inhalation | 734 mg/m³ |
| Acute - local effects, inhalation | 734 mg/m³ |

| | |
|---|---|
| Long-term - systemic effects, oral | 4.5 mg/kg bodyweight/day |
| Long-term - systemic effects, inhalation | 367 mg/m³ |
| Long-term - systemic effects, dermal | 37 mg/kg bodyweight/day |
| Long-term - local effects, inhalation | 367 mg/m³ |
| **PNEC (Water)** | |
| PNEC aqua (freshwater) | 0.24 mg/l |
| PNEC aqua (marine water) | 0.024 mg/l |
| PNEC aqua (intermittent, freshwater) | 1.65 mg/l |
| **PNEC (Sediment)** | |
| PNEC sediment (freshwater) | 1.15 mg/kg dwt |
| PNEC sediment (marine water) | 0.115 mg/kg dwt |
| **PNEC (Soil)** | |
| PNEC soil | 0.148 mg/kg dwt |
| **PNEC (Oral)** | |
| PNEC oral (secondary poisoning) | 0.2 kg/kg food |
| **PNEC (STP)** | |
| PNEC sewage treatment plant | 650 mg/l |

| **Diphenylmethane Diisocyanate, isomers and homologues (9016-87-9)** | |
|---|---|
| **DNEL/DMEL (Workers)** | |
| Acute - local effects, inhalation | 0.1 mg/m³ |
| Long-term - local effects, inhalation | 0.05 mg/m³ |
| **DNEL/DMEL (General population)** | |
| Acute - local effects, inhalation | 0.05 mg/m³ |
| Long-term - local effects, inhalation | 0.025 mg/m³ |
| **PNEC (Water)** | |
| PNEC aqua (freshwater) | 1 mg/l |
| PNEC aqua (marine water) | 1 mg/l |
| PNEC aqua (intermittent, freshwater) | 10 mg/l |
| **PNEC (Soil)** | |
| PNEC soil | 1 mg/kg dwt |

| **Diphenylmethane-4,4'-di-isocyanate (101-68-8)** | |
|---|---|
| **DNEL/DMEL (Workers)** | |
| Acute - local effects, inhalation | 0.1 mg/m³ |
| Long-term - local effects, inhalation | 0.05 mg/m³ |
| **DNEL/DMEL (General population)** | |
| Acute - local effects, inhalation | 0.05 mg/m³ |

| | |
|---|---|
| Long-term - local effects, inhalation | 0.025 mg/m³ |
| **PNEC (Water)** | |
| PNEC aqua (freshwater) | 1 mg/l |
| PNEC aqua (marine water) | 0.1 mg/l |
| PNEC aqua (intermittent, freshwater) | 10 mg/l |
| **PNEC (Soil)** | |
| PNEC soil | 1 mg/kg dwt |
| **PNEC (STP)** | |
| PNEC sewage treatment plant | 1 mg/l |

8.1.5 Control banding

No additional information available

**8.2 Exposure controls**

8.2.1 Appropriate engineering controls

Provide good ventilation in process area to prevent formation of vapour. Ensure exposure is below occupational exposure limits (where available). Local exhaust ventilation (LEV) may be required to control inhalation exposure. Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure.

8.2.2 Personal protection equipment

Avoid all unnecessary exposure.

8.2.2.1 Eye and face protection

Eye protection: Safety goggles. Standard EN 166 – Personal eye-protection.

8.2.2.2 Skin protection

Skin and body protection: Long-sleeved protective clothing.

Hand protection: Wear protective gloves if skin contact is possible. Standard EN 374 - Protective gloves against chemicals. Recommended: Nitrile rubber gloves. The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed. Gloves should be removed and replaced if there are any signs of degradation or breakthrough.

8.2.2.3 Respiratory Protection

In case of insufficient ventilation, wear suitable respiratory equipment. Short term exposure/At low concentrations: Respiratory filter device. Filter type. A1. EN 14387. Long term exposure/In high concentrations: Approved supplied air respirator.

8.2.2.4 Thermal hazards

Not required for normal conditions of use.

8.2.3 Environmental exposure controls

Avoid release to the environment. Assure that emissions are compliant with all applicable air pollution control regulations. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Other information — Do not eat, drink or smoke during use. Handle in accordance with good industrial hygiene and safety procedures.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Physical state | Liquid |
| Appearance | Liquid |
| Colour | Colourless |
| Odour | No data available |
| Odour threshold | No data available |
| pH | Not applicable |
| Relative evaporation rate (butylacetate=1) | No data available |
| Melting point | No data available |
| Freezing point | No data available |
| Boiling point | 77 °C (approx.) |
| Flash point | -1 °C (approx.) |
| Auto-ignition temperature | 460 °C |
| Decomposition temperature | No data available |
| Flammability (solid, gas) | Not applicable |
| Vapour pressure | No data available |
| Relative vapour density at 20 °C | No data available |
| Relative density | 0.94 approx. (20°C), (Water = 1) |
| Solubility | In water, material is partially soluble. |
| Log Pow | No data available |
| Viscosity, kinematic | > 20.5 mm²/s |
| Viscosity, dynamic | No data available |
| Explosive properties | May form flammable/explosive vapour-air mixture |
| Oxidising properties | Not oxidising |
| Explosive limits | 1.1 – 11 vol % |

### 9.2 Other information

No additional information available.

## SECTION 10: STABILITY AND REACTIVITY

### 10.1 Reactivity

Stable under recommended handling and storage conditions (see section 7). Highly flammable liquid and vapour.

### 10.2 Chemical stability

Stable under recommended handling and storage conditions (see section 7).

### 10.3 Possibility of hazardous reactions

May form flammable/explosive vapour-air mixture.

### 10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

### 10.5 Incompatible materials

Strong oxidising agents. Strong acids. Strong alkalis.

### 10.6 Hazardous decomposition products

Carbon monoxide. Carbon dioxide. Nitrogen oxides.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

| | |
|---|---|
| Acute toxicity (oral) | Not classified |
| Acute toxicity (dermal) | Not classified |
| Acute toxicity (inhalation) | Not classified |
| Additional information | Based on available data, the classification criteria are not met |

| **Ethyl acetate (141-78-6)** | |
|---|---|
| LD50 dermal, rabbit | > 20000 mg/kg bodyweight |
| LC50 inhalation, rat (ppm) | > 6000 ppm - 6 Hours |

| **Diphenylmethane Diisocyanate, isomers and homologues (9016-87-9)** | |
|---|---|
| LD50 oral, rat | > 2000 mg/kg bodyweight |
| LD50 dermal, rabbit | 9400 mg/kg bodyweight |
| LC50 inhalation, rat (mg/l) | 0.49 mg/l - 4 Hours |

| **Diphenylmethane-4,4'-di-isocyanate (101-68-8)** | |
|---|---|
| LC50 inhalation, rat (mg/l) | 431 mg/m³ - 4 Hours |

| **o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)** | |
|---|---|
| LC50 inhalation, rat (mg/l) | 431 mg/m³ - 4 Hours |

| **2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)** | |
|---|---|
| LD50 oral, rat | > 5000 mg/kg bodyweight |
| LC50 inhalation, rat (mg/l) | 431 mg/m³ - 4 Hours |

| | |
|---|---|
| Skin corrosion/irritation | Causes skin irritation. |
| Serious eye damage/irritation | Causes serious eye irritation. |
| Respiratory or skin sensitisation | May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. |
| Germ cell mutagenicity | Not classified. |
| Additional information | Based on available data, the classification criteria are not met. |
| Carcinogenicity | Suspected of causing cancer. |

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| **Diphenylmethane Diisocyanate, isomers and homologues (9016-87-9)** | |
|---|---|
| IARC group | 3 - Not classifiable. |

| **Diphenylmethane-4,4'-di-isocyanate (101-68-8)** | |
|---|---|
| IARC group | 3 - Not classifiable. |

| | |
|---|---|
| Reproductive toxicity | Not classified. |
| Additional information | Based on available data, the classification criteria are not met. |
| STOT-single exposure | May cause drowsiness or dizziness. May cause respiratory irritation. |

| **Ethyl acetate (141-78-6)** | |
|---|---|
| STOT-single exposure | May cause drowsiness or dizziness. |

| **Diphenylmethane Diisocyanate, isomers and homologues (9016-87-9)** | |
|---|---|
| STOT-single exposure | May cause respiratory irritation. |

| **Diphenylmethane-4,4'-di-isocyanate (101-68-8)** | |
|---|---|
| STOT-single exposure | May cause respiratory irritation. |

| **o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)** | |
|---|---|
| STOT-single exposure | May cause respiratory irritation. |

| **2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)** | |
|---|---|
| STOT-single exposure | May cause respiratory irritation. |
| STOT-repeated exposure | May cause damage to organs (respiratory system) through prolonged or repeated exposure (if inhaled). |

| **Diphenylmethane Diisocyanate, isomers and homologues (9016-87-9)** | |
|---|---|
| STOT-repeated exposure | May cause damage to organs through prolonged or repeated exposure. |

| **Diphenylmethane-4,4'-di-isocyanate (101-68-8)** | |
|---|---|
| STOT-repeated exposure | May cause damage to organs through prolonged or repeated exposure. |

| **o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)** | |
|---|---|
| STOT-repeated exposure | May cause damage to organs through prolonged or repeated exposure. |

| **2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)** | |
|---|---|
| STOT-repeated exposure | May cause damage to organs through prolonged or repeated exposure. |

| | |
|---|---|
| Aspiration hazard | Not classified |

Additional information: Based on available data, the classification criteria are not met

| Curing Agent Part B | |
|---|---|
| Viscosity, kinematic | > 20.5 mm²/s |

Potential adverse human health effects and symptoms: May cause drowsiness or dizziness, Nausea, may also cause respiratory irritation, May cause allergy or asthma symptoms or breathing difficulties if inhaled, even minimal concentrations of isocyanate can lead to a reaction in sensitised people. Symptoms that may occur include the following: irritation of the eyes, nose, throat and lungs, possibly together with a dry throat, a feeling of chest tightness and breathing difficulties. The symptoms may only arise several hours after exposure, causes serious eye irritation, may cause an allergic skin reaction, Animal research has shown that skin contact with substances known to have a sensitising effect on airways, such as diisocyanate, can cause airways to be sensitised, causes skin irritation, May cause stomach pain or vomiting if ingested, Ingestion may cause discomfort, suspected of causing cancer, May cause damage to organs (respiratory system) through prolonged or repeated exposure (if inhaled).

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1 Toxicity

Hazardous to the aquatic environment, short-term (acute): Not classified.

Hazardous to the aquatic environment, long-term (chronic): Not classified.

| Ethyl acetate (141-78-6) | |
|---|---|
| LC50 fish | 230 mg/l - 96 Hours (Pimephales promelas)(US EPA E03-05) |
| NOEC chronic fish | > 100 mg/l - 72 Hours (Desmodesmus subspicatus) |
| NOEC chronic crustacea | 2.4 mg/l - 21 days (Daphnia magna)(OECD 211 method) |
| NOEC, algae | > 100 mg/l (72 Hours, Desmodesmus subspicatus, Growth rate (OECD 201 method)) |

| Diphenylmethane Diisocyanate, isomers and homologues (9016-87-9) | |
|---|---|
| LC50 fish | > 1000 mg/l - 96 Hours (Danio rerio) |
| EC50 Daphnia | > 500 mg/l - 48 Hours (Daphnia magna) |
| ErC50 algae | ≈ 1640 mg/l - 3 days (Desmodesmus subspicatus) |
| NOEC chronic crustacea | 10 mg/l - 21 days (Daphnia magna) |

### 12.2 Persistence and degradability

| Curing Agent Part B | |
|---|---|
| Persistence and degradability | No information available. |

| Ethyl acetate (141-78-6) | |
|---|---|
| Persistence and degradability | Readily biodegradable. |

| | |
|---|---|
| Biodegradation | ≈ 62 % - 10 days (O2 consumption) |

| **Diphenylmethane Diisocyanate, isomers and homologues (9016-87-9)** | |
|---|---|
| Persistence and degradability | Not biodegradable. |

**12.3 Bioaccumulative potential**

| **Curing Agent Part B** | |
|---|---|
| Bioaccumulative potential | No information available. |

| **Ethyl acetate (141-78-6)** | |
|---|---|
| BCF - Fish [1] | 30 Leuciscus idus melanotus. |
| Log Pow | 0.68 (25 °C, pH 7) |
| Bioaccumulative potential | Low bioaccumulation potential. |

| **Diphenylmethane Diisocyanate, isomers and homologues (9016-87-9)** | |
|---|---|
| Bioaccumulative potential | Not expected to bioaccumulate. |

| **Diphenylmethane-4,4’-di-isocyanate (101-68-8)** | |
|---|---|
| BCF - Fish [1] | 200 Cyprinus carpio (OECD 305 E method) |
| Log Pow | 4.51 (22 °C, pH ≈ 7), (OECD 117 method) |
| Bioaccumulative potential | Low bioaccumulation potential. |

| **o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)** | |
|---|---|
| BCF - Fish [1] | 200 |

**12.4 Mobility in soil**

| **Curing Agent Part B** | |
|---|---|
| Ecology - soil | No information available. |

| **Ethyl acetate (141-78-6)** | |
|---|---|
| Ecology - soil | Miscible with water. |

| **Diphenylmethane Diisocyanate, isomers and homologues (9016-87-9)** | |
|---|---|
| Ecology - soil | Not volatile. |

| **Diphenylmethane-4,4’-di-isocyanate (101-68-8)** | |
|---|---|
| Ecology - soil | Slightly soluble in: Water. |

| **2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)** | |
|---|---|
| Log Koc | 5.22 (QSAR) |

### 12.5 Results of PBT and vPvB assessment

| Curing Agent Part B |
|---|
| This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII |
| This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |

### 12.6 Other adverse effects

No additional information.

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

| | |
|---|---|
| Waste disposal recommendations | Dispose in a safe manner in accordance with local/national regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal. The correct waste code must be determined by the producer of the waste, based on how the waste has been produced. |
| Additional information | Handle empty containers with care because residual vapours are flammable. |
| Ecology - waste materials | Avoid release to the environment. |

## SECTION 14: TRANSPORT INFORMATION

In accordance with ADR / IMDG / IATA

### 14.1 UN number

| | |
|---|---|
| UN-No. (ADR) | UN 1133 |
| UN-No. (IMDG) | UN 1133 |
| UN-No. (IATA) | UN 1133 |

### 14.2 UN proper shipping name

| | |
|---|---|
| Proper Shipping Name | ADHESIVES |
| Proper Shipping Name (IMDG) | ADHESIVES |
| Proper Shipping Name (IATA) | ADHESIVES |
| Transport document description (ADR) | UN 1133 ADHESIVES, 3, II, (D/E) |
| Transport document description (IMDG) | UN 1133 ADHESIVES, 3, II |
| Transport document description (IATA) | UN 1133 ADHESIVES, 3, II |

### 14.3 Transport hazard class(es)

**ADR**

Transport hazard class(es) (ADR) 3

Hazard labels 3


**IMDG**

Transport hazard class(es) (IMDG) 3

Danger labels (IMDG) 3

**IATA**
Transport hazard class(es) (IATA) 3
Danger labels (IATA) 3


**14.4 Packing group**

| | |
|---|---|
| Packing group | II |
| Packing group (IMDG) | II |
| Packing group (IATA) | II |

**14.5 Environmental hazards**

| | |
|---|---|
| Dangerous for the environment | No |
| Marine pollutant | No |
| Other information | No supplementary information available |

**14.6 Special precautions for user**

**Overland transport**
Tunnel restriction code (ADR) D/E

**Transport by sea**
No data available

**Air transport**
No data available

**14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable.

## SECTION 15: REGULATORY INFORMATION

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

15.1.1 EU-Regulations

| **Authorisations and/or restrictions on use (Annex XVII):** | | |
|---|---|---|
| **Reference code** | **Applicable on** | **Entry title or description** |
| 3 | Curing Agent Part B; Ethyl acetate; Di- phenylmethane Diisocyanate, isomers and homologues | Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008 |
| 3(a) | Curing Agent Part B; Ethyl acetate | Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F |
| 3(b) | Curing Agent Part B; Ethyl acetate; Di- phenylmethane Diisocyanate, isomers and | Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes |

| | | |
|---|---|---|
| | homologues | 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development,<br>3.8 effects other than narcotic effects, 3.9 and 3.10 |
| 40 | Curing Agent Part B; Ethyl acetate | Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not. |
| 56 | Diphenylmethane Diisocyanate, isomers and homologues ; Diphenylmethane-4,4'-di-isocyanate ; o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'- diisocyanate ; 2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate | Methylenediphenyl diisocyanate (MDI) |
| 56(a) | Diphenylmethane-4,4'-di-isocyanate | Methylenediphenyl diisocyanate (MDI) isomers: 4,4'-Methylenediphenyl diisocyanate |
| 56(b) | o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate | Methylenediphenyl diisocyanate (MDI) isomers: 2,4'-Methylenediphenyl diisocyanate |
| 56(c) | 2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate | Methylenediphenyl diisocyanate (MDI) isomers: 2,2'-Methylenediphenyl diisocyanate |

Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances
Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.
Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

15.1.2 National regulations

No additional information available.

**15.2 Chemical safety assessment**

No chemical safety assessment has been carried out.

## SECTION 16: OTHER INFORMATION

| **Abbreviations and acronyms:** | |
|---|---|
| ADR | Accord européen relatif au transport international des marchandises Dangereuses par Route |
| BCF | Bioconcentration factor |
| CAS | Chemical Abstracts Service number |
| CLP | Classification, Labelling and Packaging |

## MATERIAL SAFETY DATA SHEET

| | |
|---|---|
| DNEL | Derived No Effect Level |
| EC | European Community |
| EC50 | Effective Concentration 50% |
| EN | European Norm |
| IARC | International Agency for Research on Cancer |
| IATA | International Air Transport Association |
| IBC | Intermediate Bulk Container |
| IMDG | International Maritime Dangerous Goods Code |
| Koc | Soil adsorption coefficient |
| LC50 | Lethal Concentration 50% |
| LD50 | Lethal Dose 50% |
| OECD | Organisation for Economic Co-operation and Development |
| OEL | Occupational exposure limit |
| NOAEL | No Observed Adverse Effect Level |
| NOEC | No Observed Effect Concentration |
| PBT | Persistent, Bioaccumulative and Toxic |
| OEL | Occupational exposure limit |
| NOAEL | No Observed Adverse Effect Level |
| NOEC | No Observed Effect Concentration |
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No Effect Concentration |
| QSAR | Quantitative Structure-Activity Relationship |
| REACH | Registration, Evaluation and Authorisation of CHemicals |
| STEL | Short Term Exposure Limit |
| TWA | Time Weighted Average |
| UNxxxx | Number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods |
| UVCB | Unknown or Variable composition, Complex reaction products or Biological materials |
| vPvB | Very Persistent and very Bioaccumulative |
| WAF | Water Accommodated Fraction |

Data sources: 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, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information: Classification procedure according to Regulation (EC) No. 1272/2008 [CLP]: Physical hazards: On basis of test data. Health hazards: Calculation method. Environmental hazards: Calculation method.

| **Full text of H- and EUH-statements:** | |
|---|---|
| Acute Tox. 4 (Inhalation) | Acute toxicity (inhal.), Category 4 |
| Carc. 2 | Carcinogenicity, Category 2 |

# MATERIAL SAFETY DATA SHEET

| | |
|---|---|
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Flam. Liq. 2 | Flammable liquids, Category 2 |
| Resp. Sens. 1 | Respiratory sensitisation, Category 1 |
| Skin Irrit. 2 | Skin corrosion/irritation, Category 2 |
| Skin Sens. 1 | Skin sensitisation, Category 1 |
| STOT RE 2 | Specific target organ toxicity — Repeated exposure, Category 2 |
| STOT SE 3 | Specific target organ toxicity — Single exposure, Category 3, Narcosis |
| STOT SE 3 | Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation |
| H225 | Highly flammable liquid and vapour. |
| 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. |
| H336 | May cause drowsiness or dizziness. |
| H351 | Suspected of causing cancer. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| EUH204 | Contains isocyanates. May produce an allergic reaction. |

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