



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 Not known.
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1.3 Details of the supplier of the safety data sheet

Company Identification	Seals + Direct Ltd.
Address	Unit 6 Milton Business Centre Wick Drive, New Milton 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.	+44 (0) 1425 627722
Contact	Office Hours

National Response Centre Address	National Poisons Information Service (Birmingham Centre) City Hospital, Dudley Road, Birmingham, UK
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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. Eye Irritant 2: Causes serious eye irritation. Flammable Liquid 2: Highly flammable liquid and vapour. Reproduction 2: Suspected of damaging fertility or the unborn child. Skin Irritant 2: Causes skin irritation. STOT RE 2: May cause damage to organs through prolonged or repeated exposure. STOT SE 3: May cause drowsiness or dizziness.
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2.2 Label elements

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

Product Name

Anglo 4418

Hazard Pictogram(s)



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.

Precautionary Statement(s)

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



MATERIAL SAFETY DATA SHEET

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



MATERIAL SAFETY DATA SHEET

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 RELEASE 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.



MATERIAL SAFETY DATA SHEET

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/m ³)	STEL (ppm)	STEL (mg/m ³)	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).





MATERIAL SAFETY DATA SHEET

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 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



MATERIAL SAFETY DATA SHEET

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.



MATERIAL SAFETY DATA SHEET

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
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

MATERIAL SAFETY DATA SHEET

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

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 Max net Qty	60L
Cargo Aircraft Packing Instructions	366
Cargo Aircraft Max net Qty	220L
Special Provisions	A3
Emergency Response	3L
Guidebook (ERG) Code	



MATERIAL SAFETY DATA SHEET

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

Not listed.



MATERIAL SAFETY DATA SHEET

chemicals

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



MATERIAL SAFETY DATA SHEET

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



MATERIAL SAFETY DATA SHEET

UN: United Nations

vPvB: very Persistent and very Bioaccumulative

Disclaimers

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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

1.5 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



MATERIAL SAFETY DATA SHEET

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.
 H315 - Causes skin irritation.
 H317 - May cause an allergic skin reaction.
 H319 - Causes serious eye irritation.
 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 (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.
 P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P342+P311 - If experiencing respiratory symptoms: Call doctor.
 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.
 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



MATERIAL SAFETY DATA SHEET

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 (EC No.) 205-500-4 (EC index No.) 607-022-00-5 (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 (EC index No.) 615-005-00-9 (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'-diisocyanate	(CAS-No.) 101-68-8 (EC No.) 202-966-0 (EC index No.) 615-005-00-9 (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 (EC No.) 227-534-9 (EC index No.) 615-005-00-9 (REACH-no) 01-2119480143-45- XXXX	< 1	Carc. 2, H351 Acute Tox. 4 (Inhalation), H332 STOT RE 2, H373 Eye Irrit. 2, H319 STOT SE 3, H335 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 (EC No.) 219-799-4 (EC index No.) 615-005-00-9 (REACH-no) 01-2119927323-43- XXXX	< 1	Carc. 2, H351 Acute Tox. 4 (Inhalation), H332 STOT RE 2, H373 Eye Irrit. 2, H319 STOT SE 3, H335 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	Remove affected clothing and wash all exposed skin area with mild soap and



MATERIAL SAFETY DATA SHEET

contact	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.
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MATERIAL SAFETY DATA SHEET

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.



MATERIAL SAFETY DATA SHEET

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/m ³)	734 mg/m ³
IOELV TWA (ppm)	200 ppm
IOELV STEL (mg/m ³)	1468 mg/m ³
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/m ³)	734 mg/m ³
OEL TWA [2]	200 ppm
OEL (15 min ref) (mg/m ³)	1468 mg/m ³
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/m ³)	734 mg/m ³
WEL TWA (ppm)	200 ppm
WEL STEL (mg/m ³)	1468 mg/m ³
Ethyl acetate (141-78-6)	
WEL STEL (ppm)	400 ppm



MATERIAL SAFETY DATA SHEET

Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
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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/m ³)	0.02 mg/m ³
OEL (15 min ref) (mg/m ³)	0.07 mg/m ³
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/m ³)	0.02 mg/m ³
WEL STEL (mg/m ³)	0.07 mg/m ³
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



MATERIAL SAFETY DATA SHEET

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))
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Regulatory reference	Chemical Agents Code of Practice 2020
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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/m ³)	0.02 mg/m ³
WEL STEL (mg/m ³)	0.07 mg/m ³
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/m ³)	0.02 mg/m ³
OEL (15 min ref) (mg/m ³)	0.07 mg/m ³

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)
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**MATERIAL SAFETY DATA SHEET**

	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/m ³)	0.02 mg/m ³ all (as –NCO) Except methyl isocyanate
WEL STEL (mg/m ³)	0.07 mg/m ³ 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

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/m ³)	0.02 mg/m ³
OEL (15 min ref) (mg/m ³)	0.07 mg/m ³
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	

**MATERIAL SAFETY DATA SHEET**

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)	

**MATERIAL SAFETY DATA SHEET**

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/m ³
Long-term - local effects, inhalation	0.05 mg/m ³

DNEL/DMEL (General population)

Acute - local effects, inhalation	0.05 mg/m ³
Long-term - local effects, inhalation	0.025 mg/m ³

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
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Diphenylmethane-4,4'-di-isocyanate (101-68-8)**DNEL/DMEL (Workers)**

Acute - local effects, inhalation	0.1 mg/m ³
Long-term - local effects, inhalation	0.05 mg/m ³

DNEL/DMEL (General population)

Acute - local effects, inhalation	0.05 mg/m ³
Long-term - local effects, inhalation	0.025 mg/m ³

PNEC (Water)

PNEC aqua (freshwater)	1 mg/l
PNEC aqua (marine water)	0.1 mg/l
PNEC aqua (intermittent, freshwater)	10 mg/l



MATERIAL SAFETY DATA SHEET

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.



MATERIAL SAFETY DATA SHEET

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 mm ² /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.



MATERIAL SAFETY DATA SHEET

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/m ³ - 4 Hours
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o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)

LC50 inhalation, rat (mg/l)	431 mg/m ³ - 4 Hours
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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/m ³ - 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.

Diphenylmethane Diisocyanate, isomers and homologues (9016-87-9)

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

IARC group	3 - Not classifiable.
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**MATERIAL SAFETY DATA SHEET**

Reproductive toxicity
Additional information
STOT-single exposure

Not classified.
Based on available data, the classification criteria are not met.
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 May cause drowsiness or dizziness, Nausea, may also cause respiratory



MATERIAL SAFETY DATA SHEET

effects and symptoms

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.
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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.
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12.3 Bioaccumulative potential

**MATERIAL SAFETY DATA SHEET****Curing Agent Part B**

Bioaccumulative potential	No information available.
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Ethyl acetate (141-78-6)

BCF - Fish [1]	30 <i>Leuciscus idus melanotus</i> .
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.
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Diphenylmethane-4,4'-di-isocyanate (101-68-8)

BCF - Fish [1]	200 <i>Cyprinus carpio</i> (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
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12.4 Mobility in soil**Curing Agent Part B**

Ecology - soil	No information available.
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Ethyl acetate (141-78-6)

Ecology - soil	Miscible with water.
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Diphenylmethane Diisocyanate, isomers and homologues (9016-87-9)

Ecology - soil	Not volatile.
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Diphenylmethane-4,4'-di-isocyanate (101-68-8)

Ecology - soil	Slightly soluble in: Water.
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2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)

Log Koc	5.22 (QSAR)
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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



MATERIAL SAFETY DATA SHEET

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



MATERIAL SAFETY DATA SHEET

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 homologues	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 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 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.



MATERIAL SAFETY DATA SHEET

56	Diphenylmethane Diisocyanate, isomers and homologues ; Diphenylmethane-4,4'-diisocyanate ; 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'-diisocyanate	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
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

**MATERIAL SAFETY DATA SHEET**

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
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



MATERIAL SAFETY DATA SHEET

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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