



DRIVING SURFACE PERFECTION

PLAST X B - HARDENER

Safety Data Sheet

according to the Work Health and Safety (WHS) Regulations

Issue date: 21/02/2017 Revision date: 10/02/2020 Supersedes: 3/05/2019 Version: 3.0

SECTION 1: Product identifier

1.1. GHS Product identifier

Product form : Mixture
 Trade name : PLAST X B - HARDENER
 Product code : PLAS/B

1.2. Other means of identification

No additional information available

1.3. Recommended use of the chemical and restrictions on use

Recommended use : Coating
 Restrictions on use : Consumer uses: Private households (= general public = consumers)

1.4. Details of manufacturer or importer

Supplier

U-POL Australia Pty Limited Ltd
 55 Leland Street
 Penrith NSW 2750
 Australia
 T 02 4731 2655 - F 02 4731 2611
info@u-pol.com.au - www.u-pol.com

Supplier

U-POL New Zealand Limited Ltd
 c/o Lindsay & Associates Unit H, 12 Amera Place, East Tamaki
 Manukau City Auckland 2013
 New Zealand
 T + 612 4731 2655 / 027 630 3691 - F + 612 4731 2611
info@u-pol.co.nz - www.u-pol.com

1.5. Emergency phone number

Emergency number : Australia (CHEMTREC): + (61) - 290372994 ; New Zealand (National Poisons Centre): 0800 764 766

SECTION 2: Hazard identification

2.1. Classification of the hazardous chemical

Classification according to the model Work Health and Safety Regulations (WHS Regulations)

Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2A	H319
Respiratory sensitisation, Category 1	H334
Skin sensitisation, Category 1	H317
Carcinogenicity, Category 2	H351
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	H335
Specific target organ toxicity – Repeated exposure, Category 2	H373

2.2. GHS Label elements, including precautionary statements

Hazard pictograms (GHS AU)

:



Exclamation mark Health hazard

Signal word (GHS AU)

: Danger

Contains

: formaldehyde, homopolymer with aniline and carbonyl dichloride (63-83% %); aromatic polyisocyanate (5-23% %); polymethylene polyphenyl isocyanate (10 – 30 %); 4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (5-23% %); o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (<5% %); 2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (<5% %)

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Hazard statements (GHS AU)	: 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 H351 - Suspected of causing cancer H373 - May cause damage to organs (hearing organs) through prolonged or repeated exposure (inhalation)
Precautionary statements (GHS AU)	: P260 - Do not breathe fume, vapours. P264 - Wash hands thoroughly after handling. P280 - Wear eye protection, protective clothing, protective gloves. P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P337+P313 - If eye irritation persists: Get medical attention. P308+P313 - IF exposed or concerned: Get medical attention. P501 - Dispose of contents and container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards which do not result in classification

No additional information available

SECTION 3: Composition and information on ingredients

Name	CAS-No.	%	Classification according to the model Work Health and Safety Regulations (WHS Regulations)
formaldehyde, homopolymer with aniline and carbonyl dichloride	32055-14-4	63-83%	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
aromatic polyisocyanate	67815-87-6	5-23%	Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335 STOT RE 2, H373
polymethylene polyphenyl isocyanate	9016-87-9	10 – 30	Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate	101-68-8	5-23%	Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373

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Name	CAS-No.	%	Classification according to the model Work Health and Safety Regulations (WHS Regulations)
o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate	5873-54-1	<5%	Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate	2536-05-2	<5%	Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373

SECTION 4: First aid measures

4.1. Description of necessary first-aid measures

First-aid measures general	: IF exposed or concerned: Get medical advice/attention. Call a poison center or a doctor if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.
First-aid measures after skin contact	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.

4.2. Symptoms caused by exposure

Symptoms/effects after inhalation	: May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Symptoms/effects after skin contact	: Irritation. May cause an allergic skin reaction.

4.3. Medical attention and special treatment

Other medical advice or treatment	: Treat symptomatically.
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SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam. Carbon dioxide.
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5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire	: Toxic fumes may be released.
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5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Safety glasses. Protective clothing. Gloves.
Emergency procedures : Ventilate spillage area. Do not breathe vapours, fume. Avoid contact with skin and eyes.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and materials for containment and cleaning up

- For containment : Collect spillage. Contain released product, collect/pump into suitable containers.
Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Do not breathe vapours, fume. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes.
Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.
Storage temperature : < 25 °C
Storage area : Store in a well-ventilated place.
Special rules on packaging : Keep only in original container.

SECTION 8: Exposure controls and personal protection

8.1. Control parameters - exposure standards

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)

Australia - Occupational Exposure Limits

Local name	Methylene bisphenyl isocyanate (MDI; Diphenylmethane diisocyanate)
OES TWA [1]	0.02 mg/m ³
OES STEL	0.07 mg/m ³
Remark (AU)	Carcinogenicity Category 2 – Suspected human carcinogen. The classification of a chemical into this category is on the basis of evidence from human and animal studies, where the evidence is not sufficiently convincing to place the chemical into Category 1 or from limited evidence of carcinogenicity in human or animal studies; Sen - Respiratory and/or Skin Sensitiser.
Regulatory reference	Workplace exposure standards for airborne contaminants (2019)

New Zealand - Occupational Exposure Limits

Local name	Diphenylmethane diisocyanate (MDI, Methylene bisphenyl isocyanate) (Isocyanates)
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4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
WES-TWA (OEL TWA) [1]	0.02 mg/m ³
WES-STEL (OEL STEL)	0.07 mg/m ³
Regulatory reference	Workplace Exposure Standards and Biological Exposure Indices, 12th Edition
New Zealand - Biological Exposure Indices	
Local name	4,4-Methylene diphenyl diisocyanate (MDI, 4,4-Methylene bisphenyl isocyanate)
BEI	10 µg/g creatinine Parameter: 4,4-Diaminodiphenyl (following hydrolysis) - Medium: Urine - Sampling time: End of shift or end of exposure
Regulatory reference	Workplace Exposure Standards and Biological Exposure Indices, 12th Edition

8.2. Biological Monitoring

No additional information available

8.3. Engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

8.4. Individual protection measures, such as personal protective equipment (PPE)

Materials for protective clothing : Impermeable clothing

Hand protection : Protective gloves

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Protective gloves	Chloroprene rubber (CR)	6 (> 480 minutes)	0.5		EN ISO 374
Protective gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0.35		EN ISO 374
Protective gloves	Butyl rubber	6 (> 480 minutes)	0.35		EN ISO 374
Protective gloves	Fluorinated rubber	6 (> 480 minutes)	0.4		EN ISO 374

Eye protection : Safety glasses

Type	Field of application	Characteristics	Standard
Safety glasses		With side shields	EN 166

Skin and body protection : Wear suitable protective clothing

Respiratory protection : [In case of inadequate ventilation] wear respiratory protection.

Device	Filter type	Condition	Standard
Supplied-Air Respirator (SAR)			
Breathing apparatus	Particle filter, Type P2, Type AX - Low-boiling (<65 °C) organic compounds		

Personal protective equipment symbol(s)



Environmental exposure controls : Avoid release to the environment.

SECTION 9: Physical and chemical properties

Physical state : Liquid

Appearance : Liquid.

Colour : Yellow brown

Odour : aromatic

Odour threshold : No data available

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pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point / Freezing point	: No data available
Boiling point	: No data available
Flash point	: > 100 °C
Auto-ignition temperature	: No data available
Flammability	: No data available
Vapour pressure	: No data available
Relative density	: No data available
Density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Explosive properties	: No data available
Explosive limits	: No data available
Minimum ignition energy	: No data available
VOC content	: 0 g/l
VOC content - Regulatory	: No data available
Percent Solids	: 0 wt%

SECTION 10: Stability and reactivity

Reactivity	: The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reactions known under normal conditions of use.
Conditions to avoid	: None under recommended storage and handling conditions (see section 7).
Incompatible materials	: No additional information available
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

polymethylene polyphenyl isocyanate (9016-87-9)

LD50 oral rat	> 10000 mg/kg (Rat, Literature study, Oral)
LD50 dermal rabbit	> 5000 mg/kg (Rabbit, Literature study, Dermal)
LC50 Inhalation - Rat (Dust/Mist)	1.5 mg/l/4h
ATE AU (dust,mist)	1.5 mg/l/4h

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)

LD50 oral rat	> 2000 mg/kg bodyweight (Rat, Male / female, Read-across, Oral, 14 day(s))
LD50 dermal rabbit	> 9400 mg/kg bodyweight (Equivalent or similar to OECD 402, 24 h, Rabbit, Male / female, Read-across, Dermal, 14 day(s))
LC50 Inhalation - Rat (Dust/Mist)	1.5 mg/l/4h
ATE AU (gases)	4500 ppmv/4h
ATE AU (vapours)	11 mg/l/4h
ATE AU (dust,mist)	1.5 mg/l/4h

aromatic polyisocyanate (67815-87-6)

ATE AU (gases)	4500 ppmv/4h
ATE AU (vapours)	11 mg/l/4h
ATE AU (dust,mist)	1.5 mg/l/4h

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2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: other:84/449/EEC (Gazette of the European Community, No. L 251, of 19 Sept, 1984, page 96)
LD50 dermal rabbit	> 9400 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 Inhalation - Rat (Dust/Mist)	1.5 mg/l/4h
ATE AU (gases)	4500 ppmv/4h
ATE AU (vapours)	11 mg/l/4h
ATE AU (dust,mist)	1.5 mg/l/4h
o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: other:84/449/EEC (Gazette of the European Community, No. L 251, of 19 Sept, 1984, page 96)
LD50 dermal rabbit	> 9400 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 Inhalation - Rat (Dust/Mist)	1.5 mg/l/4h
ATE AU (gases)	4500 ppmv/4h
ATE AU (vapours)	11 mg/l/4h
ATE AU (dust,mist)	1.5 mg/l/4h
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
Carcinogenicity	: Suspected of causing cancer.
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause respiratory irritation.
polymethylene polyphenyl isocyanate (9016-87-9)	
STOT-single exposure	May cause respiratory irritation.
4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
STOT-single exposure	May cause respiratory irritation.
aromatic polyisocyanate (67815-87-6)	
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.
o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)	
STOT-single exposure	May cause respiratory irritation.
formaldehyde, homopolymer with aniline and carbonyl dichloride (32055-14-4)	
STOT-single exposure	May cause respiratory irritation.
STOT-repeated exposure	: May cause damage to organs (hearing organs) through prolonged or repeated exposure (inhalation).
polymethylene polyphenyl isocyanate (9016-87-9)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

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aromatic polyisocyanate (67815-87-6)	
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.
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.
formaldehyde, homopolymer with aniline and carbonyl dichloride (32055-14-4)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified

SECTION 12: Ecological information

According to the National Code of Practice for the Preparation of Material Safety Data Sheets, Environmental classification information is not mandatory. Information relevant for GHS classification is available on request

12.1. Ecotoxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

polymethylene polyphenyl isocyanate (9016-87-9)	
LC50 - Other aquatic organisms [1]	> 1000 mg/l (96 h, Literature study)
BCF - Fish [1]	268.1 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	10.46 (Calculated, KOWWIN)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	9.078 – 10.597 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
LC50 - Fish [1]	> 1000 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Static system, Fresh water, Read-across, Nominal concentration)
EC50 - Crustacea [1]	129.7 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 24 h, Daphnia magna, Static system, Fresh water, Read-across, Locomotor effect)
ErC50 algae	> 1640 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Read-across, GLP)
BCF - Fish [1]	92 – 200 (OECD 305: Bioconcentration: Flow-Through Fish Test, 4 week(s), Cyprinus carpio, Flow-through system, Fresh water, Experimental value, GLP)
Partition coefficient n-octanol/water (Log Pow)	4.51 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 22 °C)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	4.53 – 5.455 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)	
LC50 - Fish [1]	> 1000 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	> 1000 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 24 h, Daphnia magna, Static system, Fresh water, Read-across, GLP)
ErC50 algae	> 1640 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Read-across, GLP)

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2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)	
NOEC (chronic)	≥ 10 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
BCF - Fish [1]	92 – 200 (OECD 305: Bioconcentration: Flow-Through Fish Test, 28 day(s), Cyprinus carpio, Flow-through system, Fresh water, Read-across, GLP)
Partition coefficient n-octanol/water (Log Pow)	5.22 (QSAR, KOWWIN)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	4.53 – 5.472 (log Koc, SRC PCKOCWIN v2.0, Calculated value)

o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)	
LC50 - Fish [1]	> 1000 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	> 1000 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 24 h, Daphnia magna, Static system, Fresh water, Read-across, Locomotor effect)
ErC50 algae	> 1640 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Read-across, GLP)
NOEC (chronic)	≥ 10 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
BCF - Fish [1]	92 – 200 (OECD 305: Bioconcentration: Flow-Through Fish Test, 28 day(s), Cyprinus carpio, Flow-through system, Fresh water, Read-across, GLP)
Partition coefficient n-octanol/water (Log Pow)	4.51 (Read-across, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 22 °C)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	4.53 – 5.464 (log Koc, SRC PCKOCWIN v2.0, Calculated value)

12.2. Persistence and degradability

polymethylene polyphenyl isocyanate (9016-87-9)	
Persistence and degradability	Not readily biodegradable in water.

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
Persistence and degradability	Not readily biodegradable in water.

2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)	
Persistence and degradability	Not readily biodegradable in water.

o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)	
Persistence and degradability	Not readily biodegradable in water.

12.3. Bioaccumulative potential

polymethylene polyphenyl isocyanate (9016-87-9)	
BCF - Fish [1]	268.1 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	10.46 (Calculated, KOWWIN)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	9.078 – 10.597 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
BCF - Fish [1]	92 – 200 (OECD 305: Bioconcentration: Flow-Through Fish Test, 4 week(s), Cyprinus carpio, Flow-through system, Fresh water, Experimental value, GLP)
Partition coefficient n-octanol/water (Log Pow)	4.51 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 22 °C)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	4.53 – 5.455 (log Koc, SRC PCKOCWIN v2.0, Calculated value)

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4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)	
BCF - Fish [1]	92 – 200 (OECD 305: Bioconcentration: Flow-Through Fish Test, 28 day(s), Cyprinus carpio, Flow-through system, Fresh water, Read-across, GLP)
Partition coefficient n-octanol/water (Log Pow)	5.22 (QSAR, KOWWIN)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	4.53 – 5.472 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)	
BCF - Fish [1]	92 – 200 (OECD 305: Bioconcentration: Flow-Through Fish Test, 28 day(s), Cyprinus carpio, Flow-through system, Fresh water, Read-across, GLP)
Partition coefficient n-octanol/water (Log Pow)	4.51 (Read-across, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 22 °C)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	4.53 – 5.464 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
12.4. Mobility in soil	
polymethylene polyphenyl isocyanate (9016-87-9)	
Surface tension	No data available in the literature
Partition coefficient n-octanol/water (Log Pow)	10.46 (Calculated, KOWWIN)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	See section 12.1 on ecotoxicology 9.078 – 10.597 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Adsorbs into the soil.
4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
Surface tension	No data available in the literature
Partition coefficient n-octanol/water (Log Pow)	4.51 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 22 °C)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	See section 12.1 on ecotoxicology 4.53 – 5.455 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Adsorbs into the soil.
2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)	
Partition coefficient n-octanol/water (Log Pow)	5.22 (QSAR, KOWWIN)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	See section 12.1 on ecotoxicology 4.53 – 5.472 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Adsorbs into the soil.
o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)	
Partition coefficient n-octanol/water (Log Pow)	4.51 (Read-across, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 22 °C)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	See section 12.1 on ecotoxicology 4.53 – 5.464 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Adsorbs into the soil.

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12.5. Other adverse effects

Ozone : Not classified
Other adverse effects : No additional information available

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Fluorinated greenhouse gases	False
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polymethylene polyphenyl isocyanate (9016-87-9)

Fluorinated greenhouse gases	False
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4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)

Fluorinated greenhouse gases	False
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aromatic polyisocyanate (67815-87-6)

Fluorinated greenhouse gases	False
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2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)

Fluorinated greenhouse gases	False
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o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)

Fluorinated greenhouse gases	False
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formaldehyde, homopolymer with aniline and carbonyl dichloride (32055-14-4)

Fluorinated greenhouse gases	False
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SECTION 13: Disposal considerations

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

14.1. UN number

UN-No. (ADG) : Not regulated
UN-No. (IMDG) : Not regulated
UN-No. (IATA) : Not regulated

14.2. UN Proper Shipping Name

Proper Shipping Name (ADG) : Not regulated
Proper Shipping Name (IMDG) : Not regulated
Proper Shipping Name (IATA) : Not regulated

14.3. Transport hazard class(es)

ADG
Transport hazard class(es) (ADG) : Not regulated

IMDG
Transport hazard class(es) (IMDG) : Not regulated

IATA
Transport hazard class(es) (IATA) : Not regulated

14.4. Packing group

Packing group (ADG) : Not regulated
Packing group (IMDG) : Not regulated
Packing group (IATA) : Not regulated

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14.5. Environmental hazards

Marine pollutant : No
Dangerous for the environment : No
Other information : No supplementary information available

14.6. Special precautions for user

Specific storage requirement : No data available
Shock sensitivity : No data available

14.7. Additional information

Other information : No supplementary information available

Transport by road and rail

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

14.8. Hazchem or Emergency Action Code

Hazchem Code : Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations specific for the product in question

No additional information available

Hazardous Substances and New Organisms Act

HSNO Approval Number : HSR002679
Group standard : Surface coatings and colourants

polymethylene polyphenyl isocyanate (9016-87-9)

Hazardous Substances and New Organisms Act

HSNO Approval Number	HSR003222
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4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)

Hazardous Substances and New Organisms Act

HSNO Approval Number	HSR003218
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15.2. International agreements

No additional information available

SECTION 16: Other information

Revision date : 10/02/2020

Classification

Skin Irrit. 2	H315
Eye Irrit. 2A	H319
Resp. Sens. 1	H334

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Classification	
Skin Sens. 1	H317
Carc. 2	H351
STOT SE 3	H335
STOT RE 2	H373

Full text of H-statements	
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Carc. 2	Carcinogenicity, Category 2
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
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, Respiratory tract irritation
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
H351	Suspected of causing cancer
H373	May cause damage to organs through prolonged or repeated exposure

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