Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the REACH Regulation (1907/2006) as amended by Regulation (EU) 2020/878

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

1.1. Product identifier
3M™ All Purpose Sealant Primer P591

Product Identification Numbers
UU-0092-7316-8

7100158521

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

Identified uses
Industrial use.

1.3. Details of the supplier of the safety data sheet
Address: 3M Ireland Limited, 70 SIR JOHN ROGERSON'S QUAY, D02R296 DUBLIN 2
Telephone: +353 1 280 3555
E Mail: ner-productstewardship@mmm.com
Website: www.3M.com

1.4. Emergency telephone number
Emergency medical information: 8am-10pm (seven days) contact National Poisons Information Centre, Beaumont Hospital, Dublin 9 DOV2NO, Ireland. Telephone Number: +353 (0)1 809 2166

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
CLP REGULATION (EC) No 1272/2008

The health and environmental classifications of this material have been derived using the calculation method, except in cases where test data are available or the physical form impacts classification. Classification(s) based on test data or physical form are noted below, if applicable.

CLASSIFICATION:
Flammable Liquid, Category 2 - Flam. Liq. 2; H225

Skin Corrosion/Irritation, Category 2 - Skin Irrit. 2; H315
Serious Eye Damage/Eye Irritation, Category 2 - Eye Irrit. 2; H319
Respiratory Sensitization, Category 1 - Resp. Sens. 1; H334
Skin Sensitization, Category 1 - Skin Sens. 1; H317
Carcinogenicity, Category 2 - Carc. 2; H351
Specific Target Organ Toxicity-Single Exposure, Category 3 - STOT SE 3; H336
Specific Target Organ Toxicity-Single Exposure, Category 3 - STOT SE 3; H335

For full text of H phrases, see Section 16.

2.2. Label elements
CLP REGULATION (EC) No 1272/2008

SIGNAL WORD
DANGER.

Symbols
GHS02 (Flame) |GHS07 (Exclamation mark) |GHS08 (Health Hazard) |

Pictograms



Ingredients:

Ingredient	Identifier(s)	EC No.	% by Wt
butanone	78-93-3	201-159-0	40 - 60
BENZENE, 2,4-DIISOCYANATO-1-METHYL-, POLYMER WITH 1,6-DIISOCYANATOHEXANE	26426-91-5		5 - 10
4,4'-methylenediphenyl diisocyanate	101-68-8	202-966-0	< 10
Polymethylene polyphenylene isocyanate	9016-87-9		< 10
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate		905-806-4	< 10
Hexamethylene diisocyanate polymer	28182-81-2	500-060-2	1 - 5
hexamethylene-di-isocyanate	822-06-0	212-485-8	< 0.1
Tosyl chloride	98-59-9	202-684-8	< 0.1
4-methyl-m-phenylene diisocyanate	584-84-9	209-544-5	< 0.1

HAZARD STATEMENTS:

H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H336	May cause drowsiness or dizziness.
H335	May cause respiratory irritation.

PRECAUTIONARY STATEMENTS

Prevention:

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261A	Avoid breathing vapours.
P280I	Wear protective gloves, eye protection, face protection, and respiratory protection.

Response:

P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician.

For containers not exceeding 125 ml the following Hazard and Precautionary statements may be used:

<=125 ml Hazard statements

H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.

<=125 ml Precautionary statements

Prevention:

P261A	Avoid breathing vapours.
P280I	Wear protective gloves, eye protection, face protection, and respiratory protection.

Response:

P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician.

3% of the mixture consists of components of unknown acute oral toxicity.

9% of the mixture consists of components of unknown acute inhalation toxicity.
Contains 12% of components with unknown hazards to the aquatic environment.

Information required per Regulation (EU) 2020/1149 as regards diisocyanates:
As from 24 August 2023 adequate training is required before industrial or professional use. Further information can be found at feica.eu/Puinfo

2.3. Other hazards

Persons previously sensitised to isocyanates may develop a cross-sensitisation reaction to other isocyanates.
This material does not contain any substances that are assessed to be a PBT or vPvB

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Ingredient	Identifier(s)	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
butanone	(CAS-No.) 78-93-3 (EC-No.) 201-159-0 (REACH-No.) 01-	40 - 60	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336

	2119457290-43		EUH066
n-butyl acetate	(CAS-No.) 123-86-4 (EC-No.) 204-658-1 (REACH-No.) 01-2119485493-29	< 20	Flam. Liq. 3, H226 STOT SE 3, H336 EUH066
4,4'-methylenediphenyl diisocyanate	(CAS-No.) 101-68-8 (EC-No.) 202-966-0 (REACH-No.) 01-2119457014-47	< 10	Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373 Nota 2,C
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	(EC-No.) 905-806-4 (REACH-No.) 01-2119457015-45	< 10	Carc. 2, H351 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335 STOT RE 2, H373
BENZENE, 2,4-DIISOCYANATO-1-METHYL-, POLYMER WITH 1,6-DIISOCYANATOHEXANE	(CAS-No.) 26426-91-5	5 - 10	Eye Irrit. 2, H319 Skin Sens. 1, H317
Polymethylene polyphenylene isocyanate	(CAS-No.) 9016-87-9	< 10	Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
Hexamethylene diisocyanate polymer	(CAS-No.) 28182-81-2 (EC-No.) 500-060-2	1 - 5	Acute Tox. 4, H332 Skin Sens. 1, H317 STOT SE 3, H335
Alkyl Isocyanate Silane	Trade Secret	1 - 5	Substance not classified as hazardous
Carbon black	(CAS-No.) 1333-86-4 (EC-No.) 215-609-9 (REACH-No.) 01-2119384822-32	1 - 5	Substance with a national occupational exposure limit
Polyurethane resin	Trade Secret	< 5	Substance not classified as hazardous
2-methoxy-1-methylethyl acetate	(CAS-No.) 108-65-6 (EC-No.) 203-603-9 (REACH-No.) 01-2119475791-29	1 - 5	Flam. Liq. 3, H226 STOT SE 3, H336
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	(CAS-No.) 2530-83-8 (EC-No.) 219-784-2 (REACH-No.) 01-2119513212-58	< 3	Eye Dam. 1, H318 Aquatic Chronic 3, H412
Toluene-4-sulphonamide	(CAS-No.) 70-55-3 (EC-No.) 200-741-1	< 1.3	Substance not classified as hazardous

Stannane, dioctylbis[(1-oxoneodecyl)oxy]-	(CAS-No.) 68299-15-0 (EC-No.) 269-595-4	< 1	Repr. 2, H361d STOT RE 1, H372 Aquatic Chronic 2, H411
4-methyl-m-phenylene diisocyanate	(CAS-No.) 584-84-9 (EC-No.) 209-544-5 (REACH-No.) 01-2119486974-18	< 0.1	Acute Tox. 1, H330 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1A, H334 Skin Sens. 1A, H317 Carc. 2, H351 STOT SE 3, H335 Aquatic Chronic 3, H412 Nota C
hexamethylene-di-isocyanate	(CAS-No.) 822-06-0 (EC-No.) 212-485-8 (REACH-No.) 01-2119457571-37	< 0.1	Resp. Sens. 1A, H334 Skin Sens. 1A, H317 STOT SE 3, H335 Nota 2 Acute Tox. 1, H330 Acute Tox. 4, H302 Skin Corr. 1C, H314 Eye Dam. 1, H318
Tosyl chloride	(CAS-No.) 98-59-9 (EC-No.) 202-684-8	< 0.1	Met. Corr. 1, H290 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1A, H317

Any entry in the Identifier(s) column that begins with the numbers 6, 7, 8, or 9 are a Provisional List Number provided by ECHA pending publication of the official EC Inventory Number for the substance.
Please see section 16 for the full text of any H statements referred to in this section

Specific Concentration Limits

Ingredient	Identifier(s)	Specific Concentration Limits
hexamethylene-di-isocyanate	(CAS-No.) 822-06-0 (EC-No.) 212-485-8 (REACH-No.) 01-2119457571-37	(C >= 0.5%) Resp. Sens. 1A, H334 (C >= 0.5%) Skin Sens. 1A, H317
4,4'-methylenediphenyl diisocyanate	(CAS-No.) 101-68-8 (EC-No.) 202-966-0 (REACH-No.) 01-2119457014-47	(C >= 5%) Skin Irrit. 2, H315 (C >= 5%) Eye Irrit. 2, H319 (C >= 0.1%) Resp. Sens. 1, H334 (C >= 5%) STOT SE 3, H335
Polymethylene polyphenylene isocyanate	(CAS-No.) 9016-87-9	(C >= 5%) Skin Irrit. 2, H315 (C >= 5%) Eye Irrit. 2, H319 (C >= 0.1%) Resp. Sens. 1, H334 (C >= 5%) STOT SE 3, H335
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	(EC-No.) 905-806-4	(C >= 5%) Skin Irrit. 2, H315 (C >= 5%) Eye Irrit. 2, H319 (C >= 0.1%) Resp. Sens. 1, H334 (C >= 5%) STOT SE 3, H335
4-methyl-m-phenylene diisocyanate	(CAS-No.) 584-84-9 (EC-No.) 209-544-5 (REACH-No.) 01-2119486974-18	(C >= 0.1%) Resp. Sens. 1A, H334

For information on ingredient occupational exposure limits or PBT or vPvB status, see sections 8 and 12 of this SDS

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Remove person to fresh air. If you feel unwell, get medical attention.

Skin contact
Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye contact
Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

If swallowed
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed
The most important symptoms and effects based on the CLP classification include:
Irritating to the respiratory tract (coughing, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain). Allergic respiratory reaction (difficulty breathing, wheezing, cough, and tightness of chest). Irritation to the skin (localized redness, swelling, itching, and dryness). Allergic skin reaction (redness, swelling, blistering, and itching). Dermal defatting (localized redness, itching, drying and cracking of skin). Serious irritation to the eyes (significant redness, swelling, pain, tearing, and impaired vision). Central nervous system depression (headache, dizziness, drowsiness, incoordination, nausea, slurred speech, giddiness, and unconsciousness).

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. Extinguishing media
In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

5.2. Special hazards arising from the substance or mixture
Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products

Substance	Condition
Hydrocarbons.	During combustion.
Carbon monoxide	During combustion.
Carbon dioxide.	During combustion.
Hydrogen cyanide.	During combustion.
Oxides of nitrogen.	During combustion.
Oxides of sulphur.	During combustion.

5.3. Advice for fire-fighters
Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapours, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapours in the spill area to burn or explode. Use personal protective equipment based on the results of an exposure assessment. Refer to Section 8 for PPE recommendations. If anticipated exposure resulting from an accidental release exceeds the protective capabilities of the PPE listed in Section 8, or are unknown, select PPE that offers an appropriate level of protection. Consider the physical and chemical hazards of the material when doing so. Examples of PPE ensembles for emergency response could include wearing bunker gear for a release of flammable material; wearing chemical protective clothing if the spilled material is a corrosive, a sensitizer, a significant dermal irritant, or can be absorbed through the skin; or donning a positive pressure supplied-air respirator for chemicals with inhalation hazards. For information regarding physical and health hazards, refer to sections 2 and 11 of the SDS.

6.2. Environmental precautions
Avoid release to the environment. For larger spills, cover drains and build dykes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up
Contain spill. Cover spill area with a fire-extinguishing foam. Pour isocyanate decontaminant solution (90% water, 8% concentrated ammonia, 2% detergent) on spill and allow to react for 10 minutes. Or pour water on spill and allow to react for more than 30 minutes. Cover with absorbent material. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal container approved for transportation by appropriate authorities. Cover, but do not seal for 48 hours. Clean up residue with detergent and water. Dispose of collected material as soon as possible.

6.4. Reference to other sections
Refer to Section 8 and Section 13 for more information

SECTION 7: Handling and storage

7.1. Precautions for safe handling
For industrial/occupational use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Wear low static or properly grounded shoes. Use personal protective equipment (eg. gloves, respirators…) as required. To minimize the risk of ignition, determine applicable electrical classifications for the process using this product and select specific local exhaust ventilation equipment to avoid flammable vapour accumulation. Ground/bond container and receiving equipment if there is potential for static electricity accumulation during transfer.

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Keep cool. Keep container tightly closed to prevent contamination with water or air. If contamination is suspected, do not reseal container. Store away from heat. Store away from acids. Store away from strong bases. Store away from oxidising agents. Store away from amines.

7.3. Specific end use(s)
See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	Identifier(s)	Agency	Limit type	Additional comments
Isocyanates, All, except Methyl isocyanate (CAS No. 624-83-9) and Toluene (2,4 or 2,6 diisocyanate (CAS No. 584-84-9, 91-08-7)	101-68-8	Ireland OELs	TWA(8 hours):0.02 mg/m3;STEL(15 minutes):0.07 mg/m3	as NCO, Resp/Dermal sensitizer
4,4'-methylenediphenyl diisocyanate	101-68-8	Ireland OELs	TWA(as NCO)(8 hours):0.005 ppm;TWA(8 hours):0.005 ppm	as NCO, Resp/Dermal sensitizer, Respiratory/Dermal Sensitizer
2-methoxy-1-methylethyl acetate	108-65-6	Ireland OELs	TWA(8 hours):275 mg/m3(50 ppm);STEL(15 minutes):550 mg/m3(100 ppm)	SKIN
n-butyl acetate	123-86-4	Ireland OELs	TWA(8 hours):241 mg/m3(50 ppm);STEL(15 minutes):723 mg/m3(150 ppm)	
Carbon black	1333-86-4	Ireland OELs	TWA(inhalable fraction)(8 hours):3 mg/m3	
Isocyanates, All, except Methyl isocyanate (CAS No. 624-83-9) and Toluene (2,4 or 2,6 diisocyanate (CAS No. 584-84-9, 91-08-7)	26426-91-5	Ireland OELs	TWA(8 hours):0.02 mg/m3;STEL(15 minutes):0.07 mg/m3	as NCO, Resp/Dermal sensitizer
Isocyanates, All, except Methyl isocyanate (CAS No. 624-83-9) and Toluene (2,4 or 2,6 diisocyanate (CAS No. 584-84-9, 91-08-7)	28182-81-2	Ireland OELs	TWA(8 hours):0.02 mg/m3;STEL(15 minutes):0.07 mg/m3	as NCO, Resp/Dermal sensitizer
4-methyl-m-phenylene diisocyanate	584-84-9	Ireland OELs	TWA(As NCO, Inhalable fraction and vapour)(8 hours):0.001 ppm;TWA(as NCO)(8 hours):0.02 mg/m3;TWA(inhalable fraction and vapor)(8 hours):0.001 ppm;TWA(8 hours):0.02 mg/m3;STEL(As NCO, Inhalable fraction and vapour)(15 minutes):0.003 ppm;STEL(as NCO)(15 minutes):0.07 mg/m3;STEL(inhalable fraction and vapor)(15 minutes):0.003 ppm;STEL(15 minutes):0.07 mg/m3	as NCO, Resp/Dermal sensitizer, Respiratory/Dermal Sensitizer
Tin, Organic compounds	68299-15-0	Ireland OELs	TWA(8 hours):0.1 mg/m3;STEL(15 minutes):0.2 mg/m3	as Sn
butanone	78-93-3	Ireland OELs	TWA(8 hours):600 mg/m3(200	SKIN

			ppm);STEL(15 minutes):900 mg/m3(300 ppm)	
hexamethylene-di-isocyanate	822-06-0	Ireland OELs	TWA(8 hours):0.005 ppm	as NCO, Resp/Dermal sensitizer
Isocyanates, All, except Methyl isocyanate (CAS No. 624-83-9) and Toluene (2,4 or 2,6 diisocyanate (CAS No. 584-84-9, 91-08-7)	822-06-0	Ireland OELs	TWA(8 hours):0.02 mg/m3;STEL(15 minutes):0.07 mg/m3	as NCO, Resp/Dermal sensitizer
Isocyanates, All, except Methyl isocyanate (CAS No. 624-83-9) and Toluene (2,4 or 2,6 diisocyanate (CAS No. 584-84-9, 91-08-7)	9016-87-9	Ireland OELs	TWA(8 hours):0.02 mg/m3;STEL(15 minutes):0.07 mg/m3	as NCO, Resp/Dermal sensitizer
Tosyl chloride	98-59-9	Ireland OELs	STEL(15 minutes):5 mg/m3	

Ireland OELs : Ireland. OELs
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

Biological limit values
No biological limit values exist for any of the components listed in Section 3 of this safety data sheet.

Recommended monitoring procedures: Information on recommended monitoring procedures can be obtained from Indust. Inspect./Ministry (IE)

8.2. Exposure controls

8.2.1. Engineering controls
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment. Use explosion-proof ventilation equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Safety glasses with side shields.
Indirect vented goggles.

Applicable Norms/Standards
Use eye protection conforming to EN 16321

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.
Gloves made from the following material(s) are recommended:

Material	Thickness (mm)	Breakthrough Time
Polymer laminate	No data available	No data available

Applicable Norms/Standards

Use gloves tested to EN 374

If this product is used in a manner that presents a higher potential for exposure (e.g., spraying, high splash potential, etc.), then use of a protective apron may be necessary. See recommended glove material(s) for determining appropriate apron material(s). If a glove material is not available as an apron, polymer laminate is a suitable option.

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapours and particulates
Half facepiece or full facepiece supplied-air respirator

For questions about suitability for a specific application, consult with your respirator manufacturer.

Applicable Norms/Standards
Use a respirator conforming to EN 140 or EN 136
Use a respirator conforming to EN 140 or EN 136: filter types A & P

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Colour	Black
Odor	Strong Ketones
Odour threshold	*No data available.*
Melting point/freezing point	*Not applicable.*
Boiling point/boiling range	79 ºC
Flammability	Flammable Liquid: Category 2.
Flammable Limits(LEL)	1.8 % volume
Flammable Limits(UEL)	11.5 % volume
Flash point	-8 ºC [*Test Method:*Closed Cup]
Autoignition temperature	> 200 ºC
Decomposition temperature	*No data available.*
pH	*substance/mixture is non-polar/aprotic*
Kinematic Viscosity	11.1 mm^2/sec
Water solubility	Moderate
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Vapour pressure	*No data available.*
Density	0.9 g/ml
Relative density	0.9 [*Ref Std:*WATER=1]
Relative Vapour Density	2.8 [*Ref Std:*AIR=1]
Particle Characteristics	*Not applicable.*

9.2. Other information

9.2.2 Other safety characteristics

EU Volatile Organic Compounds	*No data available.*
Evaporation rate	*No data available.*

SECTION 10: Stability and reactivity

10.1 Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section

10.2 Chemical stability
Stable.

10.3 Possibility of hazardous reactions
Hazardous polymerisation will not occur.

10.4 Conditions to avoid
Sparks and/or flames.
Heat.

10.5 Incompatible materials
Alcohols.
Amines.
Strong acids.
Strong bases.
Strong oxidising agents.
Water

10.6 Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 11 are based on UN GHS calculation rules and classifications derived from internal hazard assessments.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation
Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Allergic respiratory reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest. May cause additional health effects (see below).

Skin contact
Skin Irritation: Signs/symptoms may include localised redness, swelling, itching, dryness, cracking, blistering, and pain. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye contact
Severe eye irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Ingestion
Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea. May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:
Central nervous system (CNS) depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Prolonged or repeated exposure may cause target organ effects:
Respiratory effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish coloured skin (cyanosis), sputum production, changes in lung function tests, and respiratory failure.

Reproductive/Developmental Toxicity:
Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Carcinogenicity:
Contains a chemical or chemicals which can cause cancer.

Additional information:
Persons previously sensitised to isocyanates may develop a cross-sensitisation reaction to other isocyanates.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Inhalation-Vapour(4 hr)		No data available; calculated ATE >50 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
butanone	Dermal	Rabbit	LD50 > 8,050 mg/kg
butanone	Inhalation-Vapour (4 hours)	Rat	LC50 34.5 mg/l
butanone	Ingestion	Rat	LD50 2,737 mg/kg
n-butyl acetate	Dermal	Rabbit	LD50 > 14,112 mg/kg
n-butyl acetate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 1.8 mg/l
n-butyl acetate	Inhalation-Vapour (4 hours)	Rat	LC50 > 21 mg/l
n-butyl acetate	Ingestion	Rat	LD50 > 10,760 mg/kg
Polymethylene polyphenylene isocyanate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Polymethylene polyphenylene isocyanate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.368 mg/l
Polymethylene polyphenylene isocyanate	Ingestion	Rat	LD50 31,600 mg/kg
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.368 mg/l
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-	Ingestion	Rat	LD50 31,600 mg/kg

isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate			
BENZENE, 2,4-DIISOCYANATO-1-METHYL-, POLYMER WITH 1,6-DIISOCYANATOHEXANE	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
BENZENE, 2,4-DIISOCYANATO-1-METHYL-, POLYMER WITH 1,6-DIISOCYANATOHEXANE	Inhalation-Dust/Mist (4 hours)	similar compounds	LC50 > 3.003 mg/l
BENZENE, 2,4-DIISOCYANATO-1-METHYL-, POLYMER WITH 1,6-DIISOCYANATOHEXANE	Ingestion	similar compounds	LD50 > 5,000 mg/kg
Carbon black	Dermal	Rabbit	LD50 > 3,000 mg/kg
Carbon black	Ingestion	Rat	LD50 > 8,000 mg/kg
4,4'-methylenediphenyl diisocyanate	Dermal	Rabbit	LD50 > 5,000 mg/kg
4,4'-methylenediphenyl diisocyanate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.368 mg/l
4,4'-methylenediphenyl diisocyanate	Ingestion	Rat	LD50 31,600 mg/kg
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Dermal	Rabbit	LD50 4,000 mg/kg
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.3 mg/l
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Ingestion	Rat	LD50 7,010 mg/kg
Hexamethylene diisocyanate polymer	Inhalation-Dust/Mist (4 hours)	Professional judgement	LC50 estimated to be 1 - 5 mg/l
Hexamethylene diisocyanate polymer	Dermal	Rabbit	LD50 > 5,000 mg/kg
Hexamethylene diisocyanate polymer	Ingestion	Rat	LD50 > 5,000 mg/kg
Toluene-4-sulphonamide	Dermal	Rat	LD50 > 2,000 mg/kg
Toluene-4-sulphonamide	Ingestion	Rat	LD50 > 2,000 mg/kg
2-methoxy-1-methylethyl acetate	Dermal	Rabbit	LD50 > 5,000 mg/kg
2-methoxy-1-methylethyl acetate	Inhalation-Vapour (4 hours)	Rat	LC50 > 28.8 mg/l
2-methoxy-1-methylethyl acetate	Ingestion	Rat	LD50 8,532 mg/kg
Stannane, dioctylbis[(1-oxoneodecyl)oxy]-	Ingestion	Rat	LD50 > 2,000 mg/kg
Stannane, dioctylbis[(1-oxoneodecyl)oxy]-	Dermal	similar compounds	LD50 > 2,000 mg/kg
hexamethylene-di-isocyanate	Dermal	Rat	LD50 > 7,000 mg/kg
hexamethylene-di-isocyanate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.124 mg/l
hexamethylene-di-isocyanate	Inhalation-Vapour (4 hours)	Rat	LC50 0.124 mg/l
hexamethylene-di-isocyanate	Ingestion	Rat	LD50 746 mg/kg
4-methyl-m-phenylene diisocyanate	Inhalation-Vapour (4 hours)	Mouse	LC50 0.12 mg/l
4-methyl-m-phenylene diisocyanate	Dermal	Rabbit	LD50 > 9,400 mg/kg
4-methyl-m-phenylene diisocyanate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.35 mg/l
4-methyl-m-phenylene diisocyanate	Ingestion	Rat	LD50 > 5,000 mg/kg
Tosyl chloride	Dermal	Rabbit	LD50 estimated to be > 5,000 mg/kg
Tosyl chloride	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
butanone	Rabbit	Minimal irritation
n-butyl acetate	Rabbit	No significant irritation

Polymethylene polyphenylene isocyanate	official classification	Irritant
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	official classification	Irritant
BENZENE, 2,4-DIISOCYANATO-1-METHYL-, POLYMER WITH 1,6-DIISOCYANATOHEXANE	similar compounds	No significant irritation
Carbon black	Rabbit	No significant irritation
4,4'-methylenediphenyl diisocyanate	official classification	Irritant
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Rabbit	Mild irritant
Hexamethylene diisocyanate polymer	Rabbit	Minimal irritation
Toluene-4-sulphonamide	Rabbit	No significant irritation
2-methoxy-1-methylethyl acetate	Rabbit	No significant irritation
Stannane, dioctylbis[(1-oxoneodecyl)oxy]-	similar compounds	No significant irritation
hexamethylene-di-isocyanate	Rabbit	Corrosive
4-methyl-m-phenylene diisocyanate	Rabbit	Irritant
Tosyl chloride	Rabbit	Irritant

Serious Eye Damage/Irritation

Name	Species	Value
butanone	Rabbit	Severe irritant
n-butyl acetate	Human	Mild irritant
Polymethylene polyphenylene isocyanate	official classification	Severe irritant
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	official classification	Severe irritant
BENZENE, 2,4-DIISOCYANATO-1-METHYL-, POLYMER WITH 1,6-DIISOCYANATOHEXANE	similar compounds	Severe irritant
Carbon black	Rabbit	No significant irritation
4,4'-methylenediphenyl diisocyanate	official classification	Severe irritant
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Rabbit	Corrosive
Hexamethylene diisocyanate polymer	Rabbit	Mild irritant
Toluene-4-sulphonamide	Rabbit	No significant irritation
2-methoxy-1-methylethyl acetate	Rabbit	Mild irritant
Stannane, dioctylbis[(1-oxoneodecyl)oxy]-	In vitro data	No significant irritation
hexamethylene-di-isocyanate	Rabbit	Corrosive
4-methyl-m-phenylene diisocyanate	Rabbit	Corrosive
Tosyl chloride	Rabbit	Corrosive

Skin Sensitisation

Name	Species	Value
n-butyl acetate	Multiple animal species	Not classified
Polymethylene polyphenylene isocyanate	Mouse	Sensitising
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	Mouse	Sensitising
BENZENE, 2,4-DIISOCYANATO-1-METHYL-, POLYMER WITH 1,6-DIISOCYANATOHEXANE	similar compounds	Sensitising
4,4'-methylenediphenyl diisocyanate	Mouse	Sensitising

[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Guinea pig	Not classified
Hexamethylene diisocyanate polymer	Guinea pig	Sensitising
2-methoxy-1-methylethyl acetate	Guinea pig	Not classified
Stannane, dioctylbis[(1-oxoneodecyl)oxy]-	similar compounds	Not classified
hexamethylene-di-isocyanate	Multiple animal species	Sensitising
4-methyl-m-phenylene diisocyanate	Human and animal	Sensitising
Tosyl chloride	Mouse	Sensitising

Respiratory Sensitisation

Name	Species	Value
Polymethylene polyphenylene isocyanate	Human	Sensitising
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	Human	Sensitising
4,4'-methylenediphenyl diisocyanate	Human	Sensitising
Hexamethylene diisocyanate polymer	similar compounds	Not classified
hexamethylene-di-isocyanate	Human and animal	Sensitising
4-methyl-m-phenylene diisocyanate	Human	Sensitising

Germ Cell Mutagenicity

Name	Route	Value
butanone	In Vitro	Not mutagenic
n-butyl acetate	In Vitro	Not mutagenic
Polymethylene polyphenylene isocyanate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	In Vitro	Some positive data exist, but the data are not sufficient for classification
BENZENE, 2,4-DIISOCYANATO-1-METHYL-, POLYMER WITH 1,6-DIISOCYANATOHEXANE	In Vitro	Not mutagenic
Carbon black	In Vitro	Not mutagenic
Carbon black	In vivo	Some positive data exist, but the data are not sufficient for classification
4,4'-methylenediphenyl diisocyanate	In Vitro	Some positive data exist, but the data are not sufficient for classification
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	In Vitro	Some positive data exist, but the data are not sufficient for classification
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	In vivo	Some positive data exist, but the data are not sufficient for classification
Hexamethylene diisocyanate polymer	In Vitro	Not mutagenic
Hexamethylene diisocyanate polymer	In vivo	Not mutagenic
2-methoxy-1-methylethyl acetate	In Vitro	Not mutagenic
Stannane, dioctylbis[(1-oxoneodecyl)oxy]-	In Vitro	Not mutagenic
hexamethylene-di-isocyanate	In Vitro	Not mutagenic
hexamethylene-di-isocyanate	In vivo	Not mutagenic
4-methyl-m-phenylene diisocyanate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Tosyl chloride	In vivo	Not mutagenic
Tosyl chloride	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
butanone	Inhalation	Human	Not carcinogenic
Polymethylene polyphenylene isocyanate	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
Carbon black	Dermal	Mouse	Not carcinogenic
Carbon black	Ingestion	Mouse	Not carcinogenic
Carbon black	Inhalation	Rat	Carcinogenic.
4,4'-methylenediphenyl diisocyanate	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Dermal	Mouse	Not carcinogenic
hexamethylene-di-isocyanate	Inhalation	Rat	Not carcinogenic
4-methyl-m-phenylene diisocyanate	Inhalation	Human and animal	Not carcinogenic
4-methyl-m-phenylene diisocyanate	Ingestion	Multiple animal species	Carcinogenic.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
butanone	Inhalation	Not classified for development	Rat	LOAEL 8.8 mg/l	during gestation
n-butyl acetate	Inhalation	Not classified for female reproduction	Rat	NOAEL 9.5 mg/l	2 generation
n-butyl acetate	Inhalation	Not classified for male reproduction	Rat	NOAEL 9.5 mg/l	2 generation
n-butyl acetate	Inhalation	Not classified for development	Rat	NOAEL 3.6 mg/l	2 generation
Polymethylene polyphenylene isocyanate	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
4,4'-methylenediphenyl diisocyanate	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Ingestion	Not classified for development	Rat	NOAEL 3,000 mg/kg/day	during organogenesis
Toluene-4-sulphonamide	Ingestion	Not classified for reproduction and/or development	Rat	NOAEL 300 mg/kg/day	premating & during gestation
2-methoxy-1-methylethyl acetate	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
2-methoxy-1-methylethyl acetate	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
2-methoxy-1-methylethyl acetate	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
2-methoxy-1-methylethyl acetate	Inhalation	Not classified for development	Rat	NOAEL 21.6 mg/l	during organogenesis

Stannane, dioctylbis[(1-oxoneodecyl)oxy]-	Ingestion	Toxic to development	similar compoun ds	NOAEL not available	
hexamethylene-di-isocyanate	Inhalation	Not classified for female reproduction	Rat	NOAEL 0.002 mg/l	7 weeks
hexamethylene-di-isocyanate	Inhalation	Not classified for development	Rat	NOAEL 0.002 mg/l	7 weeks
hexamethylene-di-isocyanate	Inhalation	Not classified for male reproduction	Rat	NOAEL 0.014 mg/l	4 weeks
4-methyl-m-phenylene diisocyanate	Inhalation	Not classified for female reproduction	Rat	NOAEL 0.002 mg/l	2 generation
4-methyl-m-phenylene diisocyanate	Inhalation	Not classified for male reproduction	Rat	NOAEL 0.002 mg/l	2 generation
4-methyl-m-phenylene diisocyanate	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
Tosyl chloride	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	premating into lactation
Tosyl chloride	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	34 days
Tosyl chloride	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	premating into lactation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
butanone	Inhalation	central nervous system depression	May cause drowsiness or dizziness	official classifica tion	NOAEL Not available	
butanone	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
butanone	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professio nal judgeme nt	NOAEL Not available	
butanone	Ingestion	liver	Not classified	Rat	NOAEL Not available	not applicable
butanone	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 1,080 mg/kg	not applicable
n-butyl acetate	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	not available
n-butyl acetate	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	not available
n-butyl acetate	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professio nal judgeme nt	NOAEL Not available	
Polymethylene polyphenylene isocyanate	Inhalation	respiratory irritation	May cause respiratory irritation	official classifica tion	NOAEL Not available	
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	Inhalation	respiratory irritation	May cause respiratory irritation	official classifica tion	NOAEL Not available	
4,4'-methylenediphenyl diisocyanate	Inhalation	respiratory irritation	May cause respiratory irritation	official classifica tion	NOAEL Not available	
Hexamethylene diisocyanate polymer	Inhalation	respiratory irritation	May cause respiratory irritation		NOAEL Not available	
2-methoxy-1-methylethyl acetate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	

2-methoxy-1-methylethyl acetate	Ingestion	central nervous system depression	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL not available	
hexamethylene-di-isocyanate	Inhalation	respiratory irritation	May cause respiratory irritation	Human and animal	NOAEL Not available	
hexamethylene-di-isocyanate	Inhalation	blood	Not classified	Human	NOAEL Not available	occupational exposure
4-methyl-m-phenylene diisocyanate	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	occupational exposure
Tosyl chloride	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
butanone	Dermal	nervous system	Not classified	Guinea pig	NOAEL Not available	31 weeks
butanone	Inhalation	liver | kidney and/or bladder | heart | endocrine system | gastrointestinal tract | bone, teeth, nails, and/or hair | hematopoietic system | immune system | muscles	Not classified	Rat	NOAEL 14.7 mg/l	90 days
butanone	Ingestion	liver	Not classified	Rat	NOAEL Not available	7 days
butanone	Ingestion	nervous system	Not classified	Rat	NOAEL 173 mg/kg/day	90 days
n-butyl acetate	Inhalation	endocrine system | hematopoietic system | liver | nervous system | kidney and/or bladder	Not classified	Rat	NOAEL 9.6 mg/l	13 weeks
n-butyl acetate	Inhalation	gastrointestinal tract | respiratory system	Not classified	Rat	NOAEL 4.8 mg/l	13 weeks
n-butyl acetate	Inhalation	heart | bone, teeth, nails, and/or hair | immune system | eyes | vascular system	Not classified	Rat	NOAEL 9.6 mg/l	13 weeks
Polymethylene polyphenylene isocyanate	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks
Carbon black	Inhalation	pneumoconiosis	Not classified	Human	NOAEL Not available	occupational exposure
4,4'-methylenediphenyl diisocyanate	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Ingestion	heart | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | nervous system | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Hexamethylene	Inhalation	immune system |	Not classified	Rat	NOAEL	2 weeks

diisocyanate polymer		blood			0.084 mg/l	
2-methoxy-1-methylethyl acetate	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 16.2 mg/l	9 days
2-methoxy-1-methylethyl acetate	Inhalation	olfactory system	Not classified	Mouse	LOAEL 1.62 mg/l	9 days
2-methoxy-1-methylethyl acetate	Inhalation	blood	Not classified	Multiple animal species	NOAEL 16.2 mg/l	9 days
2-methoxy-1-methylethyl acetate	Ingestion	endocrine system	Not classified	Rat	NOAEL 1,000 mg/kg/day	44 days
Stannane, dioctylbis[(1-oxoneodecyl)oxy]-	Ingestion	immune system	Causes damage to organs through prolonged or repeated exposure	similar compounds	NOAEL not available	
hexamethylene-di-isocyanate	Inhalation	liver | kidney and/or bladder	Not classified	Rat	NOAEL 0.002 mg/l	3 weeks
hexamethylene-di-isocyanate	Inhalation	endocrine system	Not classified	Rat	NOAEL 0.0014 mg/l	4 weeks
hexamethylene-di-isocyanate	Inhalation	blood	Not classified	Rat	NOAEL 0.0012 mg/l	2 years
hexamethylene-di-isocyanate	Inhalation	nervous system	Not classified	Rat	NOAEL 0.002 mg/l	7 weeks
hexamethylene-di-isocyanate	Inhalation	heart	Not classified	Rat	NOAEL 0.001 mg/l	90 days
4-methyl-m-phenylene diisocyanate	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL 0 mg/l	occupational exposure
Tosyl chloride	Ingestion	gastrointestinal tract	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 750 mg/kg/day	34 days
Tosyl chloride	Ingestion	heart | endocrine system | hematopoietic system | nervous system | kidney and/or bladder | liver | immune system | respiratory system	Not classified	Rat	NOAEL 750 mg/kg/day	34 days

Aspiration Hazard
For the component/components, either no data is currently available or the data is not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

11.2. Information on other hazards

This material does not contain any substances that are assessed to be an endocrine disruptor for human health.

SECTION 12: Ecological information

The information below may not agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 12 are based on UN GHS calculation rules and classifications derived from 3M assessments.

12.1. Toxicity

No product test data available.

Material	Identifier(s)	Organism	Type	Exposure	Test endpoint	Test result

butanone	78-93-3	Fathead minnow	Experimental	96 hours	LC50	2,993 mg/l
butanone	78-93-3	Green algae	Experimental	96 hours	ErC50	2,029 mg/l
butanone	78-93-3	Water flea	Experimental	48 hours	EC50	308 mg/l
butanone	78-93-3	Green algae	Experimental	96 hours	ErC10	1,289 mg/l
butanone	78-93-3	Water flea	Experimental	21 days	NOEC	100 mg/l
butanone	78-93-3	Bacteria	Experimental	16 hours	LOEC	1,150 mg/l
n-butyl acetate	123-86-4	Green algae	Analogous Compound	72 hours	ErC50	397 mg/l
n-butyl acetate	123-86-4	Fathead minnow	Experimental	96 hours	LC50	18 mg/l
n-butyl acetate	123-86-4	Water flea	Experimental	48 hours	EC50	44 mg/l
n-butyl acetate	123-86-4	Green algae	Analogous Compound	72 hours	NOEC	196 mg/l
n-butyl acetate	123-86-4	Water flea	Analogous Compound	21 days	NOEC	23.2 mg/l
n-butyl acetate	123-86-4	Ciliated protozoa	Experimental	40 hours	IC50	356 mg/l
n-butyl acetate	123-86-4	Lettuce	Experimental	14 days	EC50	>1,000 mg/kg (Dry Weight)
BENZENE, 2,4-DIISOCYANATO-1-METHYL-, POLYMER WITH 1,6-DIISOCYANATOHEXANE	26426-91-5	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
4,4'-methylenediphenyl diisocyanate	101-68-8	Activated sludge	Estimated	3 hours	EC50	>100 mg/l
4,4'-methylenediphenyl diisocyanate	101-68-8	Green algae	Estimated	72 hours	EC50	>1,640 mg/l
4,4'-methylenediphenyl diisocyanate	101-68-8	Water flea	Estimated	24 hours	EC50	>1,000 mg/l
4,4'-methylenediphenyl diisocyanate	101-68-8	Zebra Fish	Estimated	96 hours	LC50	>1,000 mg/l
4,4'-methylenediphenyl diisocyanate	101-68-8	Green algae	Estimated	72 hours	NOEC	1,640 mg/l
4,4'-methylenediphenyl diisocyanate	101-68-8	Water flea	Estimated	21 days	NOEC	10 mg/l
Polymethylene polyphenylene isocyanate	9016-87-9	Green algae	Analogous Compound	72 hours	No tox obs at lmt of water sol	>100 mg/l
Polymethylene polyphenylene isocyanate	9016-87-9	Water flea	Analogous Compound	24 hours	No tox obs at lmt of water sol	>100 mg/l
Polymethylene polyphenylene isocyanate	9016-87-9	Green algae	Analogous Compound	72 hours	No tox obs at lmt of water sol	>100 mg/l
Polymethylene polyphenylene isocyanate	9016-87-9	Activated sludge	Analogous Compound	3 hours	EC50	>100 mg/l
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	905-806-4	Activated sludge	Estimated	3 hours	EC50	>100 mg/l
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phen	905-806-4	Green algae	Estimated	72 hours	EC50	>1,640 mg/l

yl isocyanate / methylene diphenyl diisocyanate						
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	905-806-4	Water flea	Estimated	24 hours	EC50	129.7 mg/l
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	905-806-4	Zebra Fish	Estimated	96 hours	LC50	>1,000 mg/l
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	905-806-4	Green algae	Estimated	N/A	NOEL	1,640 mg/l
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	905-806-4	Water flea	Estimated	21 days	NOEC	10 mg/l
2-methoxy-1-methylethyl acetate	108-65-6	Activated sludge	Experimental	30 minutes	EC10	>1,000 mg/l
2-methoxy-1-methylethyl acetate	108-65-6	Green algae	Experimental	72 hours	ErC50	>1,000 mg/l
2-methoxy-1-methylethyl acetate	108-65-6	Rainbow trout	Experimental	96 hours	LC50	134 mg/l
2-methoxy-1-methylethyl acetate	108-65-6	Water flea	Experimental	48 hours	EC50	370 mg/l
2-methoxy-1-methylethyl acetate	108-65-6	Green algae	Experimental	72 hours	NOEC	1,000 mg/l
2-methoxy-1-methylethyl acetate	108-65-6	Water flea	Experimental	21 days	NOEC	100 mg/l
Alkyl Isocyanate Silane	Trade Secret	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Carbon black	1333-86-4	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
Carbon black	1333-86-4	Zebra Fish	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
Carbon black	1333-86-4	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	100 mg/l
Carbon black	1333-86-4	Activated sludge	Experimental	3 hours	NOEC	>800 mg/l
Hexamethylene diisocyanate polymer	28182-81-2	Activated sludge	Experimental	3 hours	EC50	3,828 mg/l
Hexamethylene diisocyanate polymer	28182-81-2	Green algae	Experimental	72 hours	ErC50	>1,000 mg/l
Hexamethylene diisocyanate polymer	28182-81-2	Zebra Fish	Experimental	96 hours	LL50	>100 mg/l
Hexamethylene diisocyanate polymer	28182-81-2	Green algae	Experimental	72 hours	ErC10	370 mg/l
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Common Carp	Experimental	96 hours	LC50	55 mg/l
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Green algae	Experimental	96 hours	ErC50	350 mg/l

[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Invertebrate	Experimental	48 hours	LC50	324 mg/l
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Green algae	Experimental	96 hours	NOEC	130 mg/l
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Water flea	Experimental	21 days	NOEC	100 mg/l
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Activated sludge	Experimental	3 hours	EC50	>100 mg/l
Toluene-4-sulphonamide	70-55-3	Green algae	Analogous Compound	72 hours	ErC50	170 mg/l
Toluene-4-sulphonamide	70-55-3	Water flea	Analogous Compound	48 hours	EC50	210 mg/l
Toluene-4-sulphonamide	70-55-3	Rainbow trout	Experimental	96 hours	LC50	102 mg/l
Toluene-4-sulphonamide	70-55-3	Green algae	Analogous Compound	72 hours	NOEC	7.7 mg/l
Toluene-4-sulphonamide	70-55-3	Water flea	Analogous Compound	21 days	NOEC	49 mg/l
Toluene-4-sulphonamide	70-55-3	Redworm	Estimated	14 days	LC50	378 mg/kg (Dry Weight)
Toluene-4-sulphonamide	70-55-3	Soil microbes	Estimated	28 days	NOEC	2.3 mg/kg (Dry Weight)
Toluene-4-sulphonamide	70-55-3	Soybean	Estimated	21 days	EC50	238 mg/kg (Dry Weight)
Stannane, dioctylbis[(1-oxoneodecyl)oxy]-	68299-15-0	Zebra Fish	Analogous Compound	96 hours	LC50	>0.24 mg/l
Stannane, dioctylbis[(1-oxoneodecyl)oxy]-	68299-15-0	Green algae	Experimental	72 hours	ErC50	>100 mg/l
Stannane, dioctylbis[(1-oxoneodecyl)oxy]-	68299-15-0	Water flea	Experimental	48 hours	EC50	>100 mg/l
Stannane, dioctylbis[(1-oxoneodecyl)oxy]-	68299-15-0	Water flea	Analogous Compound	21 days	NOEC	0.41 mg/l
hexamethylene-di-isocyanate	822-06-0	Green algae	Estimated	96 hours	EC50	14.8 mg/l
hexamethylene-di-isocyanate	822-06-0	Medaka	Estimated	96 hours	LC50	71 mg/l
hexamethylene-di-isocyanate	822-06-0	Water flea	Estimated	48 hours	EC50	27 mg/l
hexamethylene-di-isocyanate	822-06-0	Activated sludge	Experimental	3 hours	EC50	842 mg/l
hexamethylene-di-isocyanate	822-06-0	Green algae	Estimated	72 hours	NOEC	10 mg/l
hexamethylene-di-isocyanate	822-06-0	Water flea	Estimated	21 days	NOEC	4.2 mg/l
Tosyl chloride	98-59-9	Activated sludge	Estimated	3 hours	EC10	240 mg/l
Tosyl chloride	98-59-9	Green algae	Experimental	72 hours	EC50	>100 mg/l
Tosyl chloride	98-59-9	Medaka	Experimental	96 hours	LC50	>100 mg/l
Tosyl chloride	98-59-9	Water flea	Experimental	48 hours	EC50	>334 mg/l
Tosyl chloride	98-59-9	Green algae	Experimental	72 hours	NOEC	2.6 mg/l
4-methyl-m-phenylene diisocyanate	584-84-9	Green algae	Hydrolysis Product	72 hours	ErC50	18 mg/l
4-methyl-m-phenylene diisocyanate	584-84-9	Medaka	Hydrolysis Product	96 hours	LC50	>100 mg/l
4-methyl-m-phenylene diisocyanate	584-84-9	Water flea	Hydrolysis Product	48 hours	EC50	1.6 mg/l
4-methyl-m-phenylene diisocyanate	584-84-9	Water flea	Analogous Compound	21 days	NOEC	0.5 mg/l

4-methyl-m-phenylene diisocyanate	584-84-9	Green algae	Hydrolysis Product	72 hours	NOEC	1 mg/l
4-methyl-m-phenylene diisocyanate	584-84-9	Activated sludge	Analogous Compound	3 hours	EC50	>100 mg/l
4-methyl-m-phenylene diisocyanate	584-84-9	Oats	Analogous Compound	14 days	EC50	>1,000 mg/kg (Dry Weight)
4-methyl-m-phenylene diisocyanate	584-84-9	Redworm	Analogous Compound	14 days	LC50	>1,000 mg/kg (Dry Weight)

12.2. Persistence and degradability

Material	Identifier(s)	Test type	Duration	Study Type	Test result	Protocol
butanone	78-93-3	Experimental Biodegradation	28 days	BOD	98 %BOD/ThOD	OECD 301D - Closed bottle test
n-butyl acetate	123-86-4	Experimental Biodegradation	28 days	BOD	83 %BOD/ThOD	OECD 301D - Closed bottle test
n-butyl acetate	123-86-4	Experimental Photolysis		Photolytic half-life (in air)	6.3 days (t 1/2)	
n-butyl acetate	123-86-4	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	3.1 years (t 1/2)	
BENZENE, 2,4-DIISOCYANATO-1-METHYL-, POLYMER WITH 1,6-DIISOCYANATOHEXANE	26426-91-5	Data not availbl-insufficient	N/A	N/A	N/A	N/A
4,4'-methylenediphenyl diisocyanate	101-68-8	Estimated Hydrolysis		Hydrolytic half-life	20 hours (t 1/2)	
Polymethylene polyphenylene isocyanate	9016-87-9	Analogous Compound Aquatic Inherent Biodegrad.	28 days	BOD	0 %BOD/ThOD	OECD 302C - Modified MITI (II)
Polymethylene polyphenylene isocyanate	9016-87-9	Analogous Compound Hydrolysis		Hydrolytic half-life	20 hours (t 1/2)	
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	905-806-4	Data not availbl-insufficient	N/A	N/A	N/A	N/A
2-methoxy-1-methylethyl acetate	108-65-6	Experimental Biodegradation	28 days	BOD	87.2 %BOD/ThOD	OECD 301C - MITI test (I)
2-methoxy-1-methylethyl acetate	108-65-6	Experimental Aquatic Inherent Biodegrad.		Dissolv. Organic Carbon Deplet	>100 %removal of DOC	similar to OECD 302B
Alkyl Isocyanate Silane	Trade Secret	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Carbon black	1333-86-4	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Hexamethylene diisocyanate polymer	28182-81-2	Experimental Biodegradation	28 days	BOD	1 %BOD/ThOD	
Hexamethylene diisocyanate polymer	28182-81-2	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	7.7 hours (t 1/2)	
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	37 %removal of DOC	EC C.4.A. DOC Die-Away Test
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	6.5 hours (t 1/2)	OECD 111 Hydrolysis func of pH
Toluene-4-sulphonamide	70-55-3	Experimental Biodegradation	28 days	BOD	86 %BOD/ThOD	OECD 301D - Closed bottle test
Toluene-4-sulphonamide	70-55-3	Experimental Biodegradation		Half-life (t 1/2)	132 days (t 1/2)	
Toluene-4-sulphonamide	70-55-3	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	>1 years (t 1/2)	OECD 111 Hydrolysis func of pH
Toluene-4-sulphonamide	70-55-3	Experimental Biodegradation		Half-life (t 1/2)	68 days (t 1/2)	

Stannane, dioctylbis[(1-oxoneodecyl)oxy]-	68299-15-0	Experimental Biodegradation	29 days	CO2 evolution	≤16.8 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
Stannane, dioctylbis[(1-oxoneodecyl)oxy]-	68299-15-0	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	>1 years (t 1/2)	
hexamethylene-di-isocyanate	822-06-0	Estimated Biodegradation	28 days	BOD	82 %BOD/ThOD	OECD 301D - Closed bottle test
hexamethylene-di-isocyanate	822-06-0	Experimental Hydrolysis		Hydrolytic half-life	5 minutes (t 1/2)	
Tosyl chloride	98-59-9	Experimental Biodegradation	28 days	BOD	60 %BOD/ThOD	OECD 301D - Closed bottle test
Tosyl chloride	98-59-9	Experimental Hydrolysis		Hydrolytic half-life	2.2 minutes (t 1/2)	
4-methyl-m-phenylene diisocyanate	584-84-9	Experimental Biodegradation	28 days	BOD	0 %BOD/ThOD	OECD 301C - MITI test (I)
4-methyl-m-phenylene diisocyanate	584-84-9	Analogous Compound Aquatic Inherent Biodegrad.	28 days	BOD	0 %BOD/ThOD	OECD 302C - Modified MITI (II)
4-methyl-m-phenylene diisocyanate	584-84-9	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	<1.6 hours (t 1/2)	

12.3 : Bioaccumulative potential

Material	Identifier(s)	Test type	Duration	Study Type	Test result	Protocol
butanone	78-93-3	Experimental Bioconcentration		Log Kow	0.3	OECD 117 log Kow HPLC method
n-butyl acetate	123-86-4	Experimental Bioconcentration		Log Kow	2.3	OECD 117 log Kow HPLC method
BENZENE, 2,4-DIISOCYANATO-1-METHYL-, POLYMER WITH 1,6-DIISOCYANATOHEXANE	26426-91-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
4,4'-methylenediphenyl diisocyanate	101-68-8	Experimental BCF - Fish	28 days	Bioaccumulation factor	200	OECD305-Bioconcentration
Polymethylene polyphenylene isocyanate	9016-87-9	Analogous Compound BCF - Fish	28 days	Bioaccumulation factor	200	OECD305-Bioconcentration
Polymethylene polyphenylene isocyanate	9016-87-9	Analogous Compound Bioconcentration		Log Kow	4.51	
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	905-806-4	Experimental BCF - Fish	28 days	Bioaccumulation factor	200	OECD305-Bioconcentration
2-methoxy-1-methylethyl acetate	108-65-6	Experimental Bioconcentration		Log Kow	0.36	OECD 107 log Kow shke flsk mtd
Alkyl Isocyanate Silane	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Carbon black	1333-86-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Hexamethylene diisocyanate polymer	28182-81-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Experimental Bioconcentration		Log Kow	0.5	Episuite™
Toluene-4-sulphonamide	70-55-3	Experimental Bioconcentration		Log Kow	0.84	OECD 107 log Kow shke flsk mtd
Stannane, dioctylbis[(1-oxoneodecyl)oxy]-	68299-15-0	Analogous Compound BCF - Fish	30 days	Bioaccumulation factor	99	OECD305-Bioconcentration

hexamethylene-di-isocyanate	822-06-0	Estimated Bioconcentration		Log Kow	0.02	
Tosyl chloride	98-59-9	Estimated Bioconcentration		Log Kow	0.93	
4-methyl-m-phenylene diisocyanate	584-84-9	Experimental BCF - Fish	60 days	Bioaccumulation factor	180	OECD305-Bioconcentration
4-methyl-m-phenylene diisocyanate	584-84-9	Analogous Compound Bioconcentration		Log Kow	3.43	OECD 117 log Kow HPLC method

12.4. Mobility in soil

Material	Identifier(s)	Test type	Study Type	Test result	Protocol
n-butyl acetate	123-86-4	Modeled Mobility in Soil	Koc	135 l/kg	Episuite™
4,4'-methylenediphenyl diisocyanate	101-68-8	Estimated Mobility in Soil	Koc	34,000 l/kg	Episuite™
2-methoxy-1-methylethyl acetate	108-65-6	Experimental Mobility in Soil	Koc	4 l/kg	Episuite™
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Modeled Mobility in Soil	Koc	10 l/kg	Episuite™
Toluene-4-sulphonamide	70-55-3	Modeled Mobility in Soil	Koc	35.6 l/kg	Episuite™
4-methyl-m-phenylene diisocyanate	584-84-9	Modeled Mobility in Soil	Koc	950 l/kg	Episuite™

12.5. Results of the PBT and vPvB assessment

This material does not contain any substances that are assessed to be a PBT or vPvB

12.6. Endocrine disrupting properties

This material does not contain any substances that are assessed to be an endocrine disruptor for environmental effects

12.7. Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Incinerate in a permitted waste incineration facility. As a disposal alternative, utilize an acceptable permitted waste disposal facility. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

The coding of a waste stream is based on the application of the product by the consumer. Since this is out of the control of 3M, no waste code(s) for products after use will be provided. Please refer to the European Waste Code (EWC - 2000/532/EC and amendments) to assign the correct waste code to your waste stream. Ensure national and/or regional regulations are complied with and always use a licensed waste contractor.

EU waste code (product as sold)
08 04 09* Waste adhesives and sealants containing organic solvents or other dangerous substances

SECTION 14: Transportation information

	Ground Transport (ADR)	Air Transport (IATA)	Marine Transport (IMDG)
14.1 - UN Number or ID number	UN1866	UN1866	UN1866
14.2 UN proper shipping name	RESIN SOLUTION	RESIN SOLUTION	RESIN SOLUTION
14.3 Transport hazard class(es)	3	3	3
14.4 Packing group	II	II	II
14.5 Environmental hazards	Not Environmentally Hazardous	Not applicable.	Not a Marine Pollutant
14.6 Special precautions for user	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.
14.7 Marine Transport in bulk according to IMO instruments	No data available.	No data available.	No data available.
Control Temperature	No data available.	No data available.	No data available.
Emergency Temperature	No data available.	No data available.	No data available.
ADR Classification Code	F1	Not applicable.	Not applicable.
IMDG Segregation Code	Not applicable.	Not applicable.	NONE

Please contact the address or phone number listed on the first page of the SDS for additional information on the transport/shipment of the material by rail (RID) or inland waterways (ADN).

SECTION 15: Regulatory information

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

Carcinogenicity

Ingredient	Identifier(s)	Classification	Regulation
Carbon black	1333-86-4	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
4,4'-methylenediphenyl diisocyanate	101-68-8	Carc. 2	Regulation (EC) No. 1272/2008, Table 3.1
4,4'-methylenediphenyl diisocyanate	101-68-8	Gr. 3: Not classifiable	International Agency for Research on Cancer
Polymethylene polyphenylene isocyanate	9016-87-9	Carc. 2	3M classified

			according to Regulation (EC) No 1272/2008
Polymethylene polyphenylene isocyanate	9016-87-9	Gr. 3: Not classifiable	International Agency for Research on Cancer
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	905-806-4	Carc. 2	Vendor classified according to Regulation (EC) No 1272/2008
4-methyl-m-phenylene diisocyanate	584-84-9	Carc. 2	Regulation (EC) No. 1272/2008, Table 3.1
4-methyl-m-phenylene diisocyanate	584-84-9	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

Restrictions on the manufacture, placing on the market and use:
The following substance(s) contained in this product is/are subject through Annex XVII of REACH regulation to restrictions on the manufacture, placing on the market and use when present in certain dangerous substances, mixtures and articles. Users of this product are required to comply with the restrictions placed upon it by the aforementioned provision.

Ingredient	**Identifier(s)**
hexamethylene-di-isocyanate	822-06-0
Polymethylene polyphenylene isocyanate	9016-87-9
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	905-806-4
4-methyl-m-phenylene diisocyanate	584-84-9

Restriction status: listed in REACH Annex XVII
Restricted uses: See Annex XVII to Regulation (EC) No 1907/2006 for Conditions of Restriction

Global inventory status
Contact 3M for more information. The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

DIRECTIVE 2012/18/EU
Seveso hazard categories, Annex 1, Part 1

Hazard Categories	Qualifying quantity (tonnes) for the application of	
	Lower-tier requirements	Upper-tier requirements
P5c FLAMMABLE LIQUIDS*	5000	50000

*If maintained at a temperature above its boiling point or if particular processing conditions, such as high pressure or high temperature, may create major-accident hazards, P5a or P5b FLAMMABLE LIQUIDS may apply

Seveso named dangerous substances, Annex 1, Part 2

Dangerous Substances	Identifier(s)	Qualifying quantity (tonnes) for the application of	
		Lower-tier requirements	Upper-tier requirements
4-methyl-m-phenylene diisocyanate	584-84-9	10	100

Regulation (EU) No 649/2012

Chemical	Identifier(s)	Annex I

Stannane, dioctylbis[(1-oxoneodecyl)oxy]-	68299-15-0	Part 1

15.2. Chemical Safety Assessment
A chemical safety assessment has not been carried out for this mixture. Chemical safety assessments for the contained substances may have been carried out by the registrants of the substances in accordance with Regulation (EC) No 1907/2006, as amended.

SECTION 16: Other information

List of relevant H statements

EUH066	Repeated exposure may cause skin dryness or cracking.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

List of Relevant Notas

Nota 2	The concentration of isocyanate stated is the percentage by weight of the free monomer calculated with reference to the total weight of the mixture.
Nota C	Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers.

Revision information:
Label: CLP Percent Unknown information was modified.
Section 04: First Aid - Symptoms and Effects (CLP) information was modified.
Section 7: Conditions safe storage information was modified.
Section 8: Occupational exposure limit table information was modified.
Section 15: Restrictions on manufacture ingredients information information was modified.

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications. In addition, this SDS is being

provided to convey health and safety information. If you are the importer of record of this product into the European Union, you are responsible for all regulatory requirements, including, but not limited to, product registrations/notifications, substance volume tracking, and potential substance registration.

3M Ireland MSDSs are available at www.3M.com