Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice (Safe Work Australia, December 2011)

SECTION 1: Identification

1.1. Product identifier
3M™ Marine Adhesive Sealant Fast Cure 5200, White; PN 06520 , 05220, 06534, 06535

Product Identification Numbers
60-9800-4557-3 60-9800-4558-1

1.2. Recommended use and restrictions on use

Recommended use
Adhesive Sealant, Sealant.

For Industrial or Professional use only.

1.3. Supplier's details
Address: 3M Australia - Building A, 1 Rivett Road, North Ryde NSW 2113
Telephone: 136 136
E Mail: productinfo.au@mmm.com
Website: www.3m.com.au

1.4. Emergency telephone number
EMERGENCY: 1800 097 146 (Australia only)

SECTION 2: Hazard identification

This product is classified as a hazardous chemical according to the Model Work Health and Safety Regulations, 2011, in accordance with applicable State and Territory legislation.

Refer to Section 14 of this Safety Data Sheets for product Dangerous Goods Classification.

2.1. Classification of the substance or mixture
Respiratory Sensitizer: Category 1.
Skin Sensitizer: Category 1.
Specific Target Organ Toxicity (repeated exposure): Category 2.

2.2. Label elements
The label elements below were prepared in accordance with the Code of Practice on Preparation of Safety Data Sheets for

Hazardous Chemicals (Safe Work Australia, December 2011). This information may be different from the actual product label.

Signal word
Danger

Symbols
Health Hazard |

Pictograms

Hazard statements

H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H373	May cause damage to organs through prolonged or repeated exposure: respiratory system.

Precautionary statements
General:

P102	Keep out of reach of children.

Prevention:

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280E	Wear protective gloves.
P284	Wear respiratory protection.

Response:

P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P314	Get medical advice/attention if you feel unwell.
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.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Disposal:

P501	Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Other assigned/identified product hazards
Persons previously sensitised to isocyanates may develop a cross-sensitisation reaction to other isocyanates. Although titanium dioxide is classified as a carcinogen, exposures associated with this health effect are not expected during normal, intended use of this product.

2.4. Other hazards which do not result in classification
Causes mild skin irritation.
Toxic to aquatic life with long lasting effects.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Weight
Urethane Polymer	51447-37-1	40 - 70
Titanium dioxide	13463-67-7	10 - 30
Fumed silica	112945-52-5	1 - 5
p,p'-Methylenebis(Phenyl Isocyanate)	101-68-8	< 2.4
Zinc Oxide	1314-13-2	< 2.3
Alkyl Isocyanate Silane	85702-90-5	< 2
Aluminium hydroxide	21645-51-2	< 2
2-(2-Ethoxyethoxy)ethyl acetate	112-15-2	< 2.0
Fumed silica	7631-86-9	0.5 - 1.5
Heptane	142-82-5	< 0.3
(Gamma-mercaptopropyl)trimethoxysilane	4420-74-0	< 0.2

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
Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, 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

Allergic respiratory reaction (difficulty breathing, wheezing, cough, and tightness of chest). Allergic skin reaction (redness, swelling, blistering, and itching). Target organ effects following prolonged or repeated exposure. See Section 11 for additional details.

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

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
Use a fire fighting agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

Hazardous Decomposition or By-Products

Substance	Condition
Isocyanates	During combustion.
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.

Hydrogen cyanide.	During combustion.
Oxides of nitrogen.	During combustion.
Oxides of sulphur.	During combustion.
Toxic vapour, gas, particulate.	During combustion.

5.3. Special protective actions for fire-fighters
No special protective actions for fire-fighters are anticipated.

Hazchem Code: 2Z

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

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
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. Place in a container approved for transportation by appropriate authorities, but do not seal the container for 48 hours to avoid pressure build-up. Clean up residue with an appropriate solvent selected by a qualified and authorised person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and Safety Data Sheet. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Keep out of reach of children. 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.

7.2. Conditions for safe storage including any incompatibilities
Keep container tightly closed to prevent contamination with water or air. If contamination is suspected, do not reseal container. Store away from amines.

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	CAS Nbr	Agency	Limit type	Additional comments
p,p'-Methylenebis(Phenyl Isocyanate)	101-68-8	ACGIH	TWA:0.005 ppm	

p,p'-Methylenebis(Phenyl Isocyanate)	101-68-8	Australia OELs	TWA(8 hours):0.02 mg/m3;STEL(15 minutes):0.07 mg/m3	
Silicon dioxide	112945-52-5	Australia OELs	TWA(respirable fraction)(8 hours):2 mg/m3	
Zinc Oxide	1314-13-2	ACGIH	TWA(respirable fraction):2 mg/m3;STEL(respirable fraction):10 mg/m3	
Zinc Oxide	1314-13-2	Australia OELs	TWA(Inspirable dust)(8 hours):10 mg/m3;TWA(as fume)(8 hours):5 mg/m3;STEL(as fume)(15 minutes):10 mg/m3	
Titanium dioxide	13463-67-7	ACGIH	TWA:10 mg/m³	A4: Not class. as human carcin
Titanium dioxide	13463-67-7	Australia OELs	TWA(Inspirable dust)(8 hours):10 mg/m3	
Heptane	142-82-5	ACGIH	TWA:400 ppm;STEL:500 ppm	
Heptane	142-82-5	Australia OELs	TWA(8 hours):1640 mg/m3(400 ppm);STEL(15 minutes):2050 mg/m3(500 ppm)	
Aluminum, insoluble compounds	21645-51-2	ACGIH	TWA(respirable fraction):1 mg/m3	A4: Not class. as human carcin
Fumed silica	7631-86-9	Australia OELs	TWA(respirable fraction)(8 hours):2 mg/m3	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
Australia OELs : Australia. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment
CMRG : Chemical Manufacturer's Recommended Guidelines
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling
Sen: Sensitiser
Sk: Absorption through the skin may be a significant source of exposure.

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.

8.2.2. Personal protective equipment (PPE)

Eye/face protection
None required.

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: Polymer laminate

if this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an

exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

Select and use gloves according to AS/NZ 2161.

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

For questions about suitability for a specific application, consult with your respirator manufacturer.
Select and use respirators according to AS/NZS 1715. Respirators should comply with AS/NZS 1716 performance specifications. For information about respirators, call 3M on 1800 024 464.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Paste
Colour	White
Odour	Slight Urethane
Odour threshold	*No data available.*
pH	*Not applicable.*
Melting point/Freezing point	*Not applicable.*
Boiling point/Initial boiling point/Boiling range	*Not applicable.*
Flash point	No flash point
Evaporation rate	*No data available.*
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	*Not applicable.*
Flammable Limits(UEL)	*Not applicable.*
Vapour pressure	*No data available.*
Vapor Density and/or Relative Vapor Density	*No data available.*
Density	1.3 g/ml
Relative density	1.3 [*Ref Std:*WATER=1]
Water solubility	Nil
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Autoignition temperature	*No data available.*
Decomposition temperature	*No data available.*
Viscosity/Kinematic Viscosity	100,000 - 500,000 mPa-s
Volatile organic compounds (VOC)	38 g/l [*Test Method:*tested per EPA method 24] [*Details:*EU VOC content]
Percent volatile	2.83 % weight
VOC less H2O & exempt solvents	38 g/l [*Test Method:*tested per EPA method 24]
Molecular weight	*No data available.*

Nanoparticles
This material contains nanoparticles.

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. Conditions to avoid
None known.

10.4. Possibility of hazardous reactions
Hazardous polymerisation will not occur.

10.5 Incompatible materials
Amines.
Alcohols.
Water

10.6 Hazardous decomposition products

Substance	Condition
None known.	

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labelling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1 Information on Toxicological effects

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

Eye contact
Contact with the eyes during product use is not expected to result in significant irritation.

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:

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.

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	Inhalation-Vapour(4 hr)		No data available; calculated ATE >50 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Urethane Polymer	Dermal		LD50 estimated to be > 5,000 mg/kg
Urethane Polymer	Ingestion	Rat	LD50 > 5,000 mg/kg
Titanium dioxide	Dermal	Rabbit	LD50 > 10,000 mg/kg
Titanium dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l
Titanium dioxide	Ingestion	Rat	LD50 > 10,000 mg/kg
Fumed silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Fumed silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Fumed silica	Ingestion	Rat	LD50 > 5,110 mg/kg
p,p'-Methylenebis(Phenyl Isocyanate)	Dermal	Rabbit	LD50 > 5,000 mg/kg
p,p'-Methylenebis(Phenyl Isocyanate)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.368 mg/l
p,p'-Methylenebis(Phenyl Isocyanate)	Ingestion	Rat	LD50 31,600 mg/kg
Zinc Oxide	Dermal		LD50 estimated to be > 5,000 mg/kg
Zinc Oxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.7 mg/l
Zinc Oxide	Ingestion	Rat	LD50 > 5,000 mg/kg
2-(2-Ethoxyethoxy)ethyl acetate	Dermal	Rabbit	LD50 15,000 mg/kg
2-(2-Ethoxyethoxy)ethyl acetate	Ingestion	Rat	LD50 11,000 mg/kg
Fumed silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Fumed silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Fumed silica	Ingestion	Rat	LD50 > 5,110 mg/kg
Aluminium hydroxide	Dermal		LD50 estimated to be > 5,000 mg/kg
Aluminium hydroxide	Ingestion	Rat	LD50 > 5,000 mg/kg
Heptane	Dermal	Rabbit	LD50 3,000 mg/kg
Heptane	Inhalation-Vapour (4 hours)	Rat	LC50 103 mg/l
Heptane	Ingestion	Rat	LD50 > 15,000 mg/kg
(Gamma-mercaptopropyl)trimethoxysilane	Dermal	Rabbit	LD50 2,270 mg/kg
(Gamma-mercaptopropyl)trimethoxysilane	Ingestion	Rat	LD50 770 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Titanium dioxide	Rabbit	No significant irritation
Fumed silica	Rabbit	No significant irritation

p,p'-Methylenebis(Phenyl Isocyanate)	official classification	Irritant
Zinc Oxide	Human and animal	No significant irritation
2-(2-Ethoxyethoxy)ethyl acetate	Human and animal	Minimal irritation
Fumed silica	Rabbit	No significant irritation
Aluminium hydroxide	Rabbit	No significant irritation
Heptane	Human	Mild irritant
(Gamma-mercaptopropyl)trimethoxysilane	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Titanium dioxide	Rabbit	No significant irritation
Fumed silica	Rabbit	No significant irritation
p,p'-Methylenebis(Phenyl Isocyanate)	official classification	Severe irritant
Zinc Oxide	Rabbit	Mild irritant
2-(2-Ethoxyethoxy)ethyl acetate	Rabbit	Severe irritant
Fumed silica	Rabbit	No significant irritation
Aluminium hydroxide	Rabbit	No significant irritation
Heptane	Professional judgement	Moderate irritant
(Gamma-mercaptopropyl)trimethoxysilane	Rabbit	No significant irritation

Skin Sensitisation

Name	Species	Value
Titanium dioxide	Human and animal	Not classified
Fumed silica	Human and animal	Not classified
p,p'-Methylenebis(Phenyl Isocyanate)	official classification	Sensitising
Zinc Oxide	Guinea pig	Not classified
2-(2-Ethoxyethoxy)ethyl acetate	Human and animal	Not classified
Fumed silica	Human and animal	Not classified
Aluminium hydroxide	Guinea pig	Not classified
(Gamma-mercaptopropyl)trimethoxysilane	Guinea pig	Sensitising

Respiratory Sensitisation

Name	Species	Value
p,p'-Methylenebis(Phenyl Isocyanate)	Human	Sensitising

Germ Cell Mutagenicity

Name	Route	Value
Titanium dioxide	In Vitro	Not mutagenic
Titanium dioxide	In vivo	Not mutagenic
Fumed silica	In Vitro	Not mutagenic
p,p'-Methylenebis(Phenyl Isocyanate)	In Vitro	Some positive data exist, but the data are not sufficient for classification
Zinc Oxide	In Vitro	Some positive data exist, but the data are not sufficient for classification
Zinc Oxide	In vivo	Some positive data exist, but the data are not sufficient for classification
2-(2-Ethoxyethoxy)ethyl acetate	In Vitro	Not mutagenic
Fumed silica	In Vitro	Not mutagenic
Heptane	In Vitro	Not mutagenic
(Gamma-mercaptopropyl)trimethoxysilane	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value

Titanium dioxide	Ingestion	Multiple animal species	Not carcinogenic
Titanium dioxide	Inhalation	Rat	Carcinogenic.
Fumed silica	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
p,p'-Methylenebis(Phenyl Isocyanate)	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
Fumed silica	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Aluminium hydroxide	Not specified.	Multiple animal species	Not carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Fumed silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Fumed silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Fumed silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
p,p'-Methylenebis(Phenyl Isocyanate)	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
Zinc Oxide	Ingestion	Not classified for reproduction and/or development	Multiple animal species	NOAEL 125 mg/kg/day	premating & during gestation
Fumed silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Fumed silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Fumed silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
Aluminium hydroxide	Ingestion	Not classified for development	Rat	NOAEL 768 mg/kg/day	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
p,p'-Methylenebis(Phenyl Isocyanate)	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
2-(2-Ethoxyethoxy)ethyl acetate	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	not applicable
2-(2-Ethoxyethoxy)ethyl acetate	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL Not available	not applicable
Heptane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Heptane	Inhalation	respiratory irritation	Some positive data exist, but the	Human	NOAEL Not available	

			data are not sufficient for classification			
Heptane	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Titanium dioxide	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.01 mg/l	2 years
Titanium dioxide	Inhalation	pulmonary fibrosis	Not classified	Human	NOAEL Not available	occupational exposure
Fumed silica	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
p,p'-Methylenebis(Phenyl Isocyanate)	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks
Zinc Oxide	Ingestion	nervous system	Not classified	Rat	NOAEL 600 mg/kg/day	10 days
Zinc Oxide	Ingestion	endocrine system | hematopoietic system | kidney and/or bladder	Not classified	Other	NOAEL 500 mg/kg/day	6 months
2-(2-Ethoxyethoxy)ethyl acetate	Inhalation	respiratory system | liver | immune system | kidney and/or bladder	Not classified	Rat	NOAEL 0.48 mg/l	2 weeks
Fumed silica	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Heptane	Inhalation	liver | nervous system | kidney and/or bladder	Not classified	Rat	NOAEL 12 mg/l	26 weeks

Aspiration Hazard

Name	Value
Heptane	Aspiration hazard

Exposure Levels
Refer Section **8.1 Control Parameters** of this Safety Data Sheet.

Interactive Effects
Not determined.

SECTION 12: Ecological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labelling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

12.1. Toxicity

Acute aquatic hazard:
GHS Acute 2: Toxic to aquatic life.

Chronic aquatic hazard:
GHS Chronic 2: Toxic to aquatic life with long lasting effects.

No product test data available.

Material	CAS Number	Organism	Type	Exposure	Test endpoint	Test result
Urethane Polymer	51447-37-1		Data not available or insufficient for classification			N/A
Titanium dioxide	13463-67-7	Activated sludge	Experimental	3 hours	NOEC	>=1,000 mg/l
Titanium dioxide	13463-67-7	Diatom	Experimental	72 hours	EC50	>10,000 mg/l
Titanium dioxide	13463-67-7	Fathead minnow	Experimental	96 hours	LC50	>100 mg/l
Titanium dioxide	13463-67-7	Water flea	Experimental	48 hours	EC50	>100 mg/l
Titanium dioxide	13463-67-7	Diatom	Experimental	72 hours	NOEC	5,600 mg/l
Fumed silica	112945-52-5	Green Algae	Experimental	72 hours	EC50	>100 mg/l
Fumed silica	112945-52-5	Water flea	Experimental	24 hours	EC50	>100 mg/l
Fumed silica	112945-52-5	Zebra Fish	Experimental	96 hours	LC50	>100 mg/l
Fumed silica	112945-52-5	Green Algae	Experimental	72 hours	NOEC	60 mg/l
p,p'-Methylenebis(Phenyl Isocyanate)	101-68-8	Activated sludge	Estimated	3 hours	EC50	>100 mg/l
p,p'-Methylenebis(Phenyl Isocyanate)	101-68-8	Green algae	Estimated	72 hours	EC50	>1,640 mg/l
p,p'-Methylenebis(Phenyl Isocyanate)	101-68-8	Water flea	Estimated	24 hours	EC50	>1,000 mg/l
p,p'-Methylenebis(Phenyl Isocyanate)	101-68-8	Zebra Fish	Estimated	96 hours	LC50	>1,000 mg/l
p,p'-Methylenebis(Phenyl Isocyanate)	101-68-8	Green algae	Estimated	72 hours	NOEC	1,640 mg/l
p,p'-Methylenebis(Phenyl Isocyanate)	101-68-8	Water flea	Estimated	21 days	NOEC	10 mg/l
Zinc Oxide	1314-13-2	Activated	Estimated	3 hours	EC50	6.5 mg/l

		sludge				
Zinc Oxide	1314-13-2	Green Algae	Estimated	72 hours	EC50	0.052 mg/l
Zinc Oxide	1314-13-2	Rainbow trout	Estimated	96 hours	LC50	0.21 mg/l
Zinc Oxide	1314-13-2	Water flea	Estimated	48 hours	EC50	0.07 mg/l
Zinc Oxide	1314-13-2	Green Algae	Estimated	72 hours	NOEC	0.006 mg/l
Zinc Oxide	1314-13-2	Water flea	Estimated	7 days	NOEC	0.02 mg/l
Alkyl Isocyanate Silane	85702-90-5		Data not available or insufficient for classification			N/A
Aluminium hydroxide	21645-51-2	Fish other	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
Aluminium hydroxide	21645-51-2	Green Algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
Aluminium hydroxide	21645-51-2	Water flea	Experimental	48 hours	No tox obs at lmt of water sol	>100 mg/l
Aluminium hydroxide	21645-51-2	Green Algae	Experimental	72 hours	No tox obs at lmt of water sol	100 mg/l
2-(2-Ethoxyethoxy) ethyl acetate	112-15-2	Fathead minnow	Experimental	96 hours	LC50	110 mg/l
2-(2-Ethoxyethoxy) ethyl acetate	112-15-2	Green algae	Experimental	72 hours	EC50	>100 mg/l
2-(2-Ethoxyethoxy) ethyl acetate	112-15-2	Water flea	Experimental	48 hours	EC50	>100 mg/l
2-(2-Ethoxyethoxy) ethyl acetate	112-15-2	Green algae	Experimental	72 hours	NOEC	100 mg/l
Fumed silica	7631-86-9		Data not available or insufficient for classification			N/A
Heptane	142-82-5	Water flea	Experimental	48 hours	EC50	1.5 mg/l
Heptane	142-82-5	Water flea	Estimated	21 days	NOEC	0.17 mg/l
(Gamma-mercaptopropyl)trimethoxysilane	4420-74-0	Green algae	Experimental	72 hours	EC50	267 mg/l
(Gamma-mercaptopropyl)trimethoxysilane	4420-74-0	Water flea	Experimental	48 hours	EC50	6.7 mg/l
(Gamma-mercaptopropyl)trimethoxysilane	4420-74-0	Zebra Fish	Experimental	96 hours	LC50	439 mg/l

12.2. Persistence and degradability

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
Urethane Polymer	51447-37-1	Data not available-			N/A	

		insufficient				
Titanium dioxide	13463-67-7	Data not available-insufficient			N/A	
Fumed silica	112945-52-5	Data not available-insufficient			N/A	
p,p'-Methylenebis(Phenyl Isocyanate)	101-68-8	Estimated Hydrolysis		Hydrolytic half-life	20 hours (t 1/2)	Non-standard method
Zinc Oxide	1314-13-2	Data not available-insufficient			N/A	
Alkyl Isocyanate Silane	85702-90-5	Data not available-insufficient			N/A	
Aluminium hydroxide	21645-51-2	Data not available-insufficient			N/A	
2-(2-Ethoxyethoxy) ethyl acetate	112-15-2	Experimental Biodegradation	28 days	BOD	100 % BOD/ThBOD	OECD 301C - MITI test (I)
Fumed silica	7631-86-9	Data not available-insufficient			N/A	
Heptane	142-82-5	Experimental Photolysis		Photolytic half-life (in air)	4.24 days (t 1/2)	Non-standard method
Heptane	142-82-5	Experimental Biodegradation	28 days	BOD	101 % BOD/ThBOD	OECD 301C - MITI test (I)
(Gamma-mercaptopropyl)trimethoxysilane	4420-74-0	Estimated Hydrolysis		Hydrolytic half-life	53.3 minutes (t 1/2)	Non-standard method

12.3 : Bioaccumulative potential

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
Urethane Polymer	51447-37-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Titanium dioxide	13463-67-7	Experimental BCF-Carp	42 days	Bioaccumulation factor	9.6	Non-standard method
Fumed silica	112945-52-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
p,p'-Methylenebis(Phenyl Isocyanate)	101-68-8	Experimental BCF-Carp	28 days	Bioaccumulation factor	200	OECD 305E - Bioaccumulation flow-through fish test
Zinc Oxide	1314-13-2	Experimental BCF-Carp	56 days	Bioaccumulation factor	≤217	OECD 305E - Bioaccumulation flow-through fish test

Alkyl Isocyanate Silane	85702-90-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Aluminium hydroxide	21645-51-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-(2-Ethoxyethoxy) ethyl acetate	112-15-2	Experimental Bioconcentration		Log Kow	0.74	Non-standard method
Fumed silica	7631-86-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Heptane	142-82-5	Estimated Bioconcentration		Bioaccumulation factor	105	Estimated: Bioconcentration factor
(Gamma-mercaptopropyl)trimethoxysilane	4420-74-0	Estimated Bioconcentration		Log Kow	0.25	Estimated: Octanol-water partition coefficient

12.4. Mobility in soil
Please contact manufacturer for more details

12.5 Other adverse effects

Material	CAS Number	Ozone Depletion Potential	Global Warming Potential
(gamma-mercaptopropyl)trimethoxysilane	4420-74-0	0	

SECTION 13: Disposal considerations

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

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes.

SECTION 14: Transport Information

Australian Dangerous Goods Code (ADG) - Road/Rail Transport
UN No.: UN3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. , (ZINC OXIDE, (GAMMA-MERCAPTOPROPYL)TRIMETHOXYSILANE)
Class/Division: 9
Sub Risk: Not applicable.
Packing Group: III
Special Instructions: Not restricted, environmentally hazardous substance exception.
Hazchem Code: 2Z
IERG: 47

International Air Transport Association (IATA) - Air Transport
UN No.: UN3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. , (ZINC OXIDE, (GAMMA-MERCAPTOPROPYL)TRIMETHOXYSILANE)
Class/Division: 9
Sub Risk: Not applicable.
Packing Group: III
Special Instructions: Not restricted, as per Special Provision A197, environmentally hazardous substance exception.

International Maritime Dangerous Goods Code (IMDG)- Marine Transport
UN No.: UN3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. , (ZINC OXIDE, (GAMMA-MERCAPTOPROPYL)TRIMETHOXYSILANE)
Class/Division: 9
Sub Risk: Not applicable.
Packing Group: III
Marine Pollutant: Zinc Oxide, (Gamma-mercaptopropyl)trimethoxysilane
Special Instructions: Not restricted, as per IMDG code 2.10.2.7, marine pollutant exception.

SECTION 15: Regulatory information

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

Australian Inventory Status:
An ingredient(s) in this product is being introduced under the no unreasonable risk non-cosmetic (<100 Kg) exemption provisions specified in Section 21(4) of the Industrial Chemicals (Notification and Assessment) Act 1989 as amended.

Poison Schedule: This product is intended for Industrial or Professional Use only and therefore is not packaged and labelled in accordance with the requirements of the Standard for the Uniform Scheduling of Medicines and Poisons.

SECTION 16: Other information

Revision information:
Complete document review.

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 Safety 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.
Greenguard ® is a United States based program. The ‘Low VOC’ reference related to United States Federal and State regulations exemptions for some solvents.

3M Australia SDSs are available at www.3m.com.au