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 Fire Barrier Moldable Putty + Pads

Product Identification Numbers
98-0400-5524-0

1.2. Recommended use and restrictions on use

Recommended use
Passive fire protection in industrial applications.

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 an article and is classified as hazardous 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
Serious Eye Damage/Irritation: Category 2.
Reproductive Toxicity: 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
WARNING!

Symbols
Exclamation mark | Health Hazard |

Pictograms

Hazard statements

H319	Causes serious eye irritation.
H361	Suspected of damaging fertility or the unborn child.

Precautionary statements
General:

P102	Keep out of reach of children.
P103	Read label before use.
P101	If medical advice is needed, have product container or label at hand.

Prevention:

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P280A	Wear eye/face protection.
P281	Use personal protective equipment as required.
P264	Wash thoroughly after handling.

Response:

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

Storage:

P405	Store locked up.

Disposal:

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

2.3. Other assigned/identified product hazards
None known.

2.4. Other hazards which do not result in classification
May be harmful if swallowed.
Causes mild skin irritation. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Weight
Methyl Esters of Hydrogenated Rosin	8050-15-5	10 - 30
Polyisobutylene	9003-27-4	10 - 30
Polymer	Trade Secret	10 - 30
Boron zinc hydroxide oxide	138265-88-0	20 - 24
Silicic acid, sodium salt	1344-09-8	10 - 20
Melamine Phosphate	41583-09-9	5 - 10
Glass Wool	65997-17-3	3 - 7
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	25068-38-6	1 - 5
Alpha-Methylstyrene-Isoamylene-Piperylene Polymer	62258-49-5	1 - 5
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	1 - 5
Butadiene-Styrene-Meta-Divinylbenzene Polymer	26471-45-4	1 - 5
Water	7732-18-5	1 - 5
Rayon Fiber	None	1 - 5
Rosin	8050-09-7	< 1

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
Wash with soap and water. 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
See Section 11.1. Information on toxicological effects.

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

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
Non-combustible. Use a fire fighting agent suitable for surrounding fire.

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

Hazardous Decomposition or By-Products

Substance	Condition

Aldehydes.	During combustion.
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.
Hydrogen Chloride	During combustion.

5.3. Special protective actions for fire-fighters
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.

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. 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.

6.3. Methods and material for containment and cleaning up
Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. 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 handle until all safety precautions have been read and understood. Avoid breathing 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. Avoid release to the environment. Use personal protective equipment (eg. gloves, respirators…) as required.

7.2. Conditions for safe storage including any incompatibilities
No special storage requirements.

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
Silicon dioxide	112945-52-5	Australia OELs	TWA(respirable fraction)(8 hours):2 mg/m3	
Glass filaments	65997-17-3	Australia OELs	TWA(as fiber)(8 hours):0.5 fibers/ml;TWA(8 hours):0.5 fibers/ml	
Glass Wool	65997-17-3	Manufacturer determined	TWA(as non-fibrous, respirable)(8 hours):3 mg/m3;TWA(as non-fibrous, inhalable fraction)(8 hours):10 mg/m3	

Rosin	8050-09-7	ACGIH	Limit value not established:	Cntrl all exposr-low as possible, Dermal/Respiratory Sensitizer
Rosin	8050-09-7	Australia OELs	TWA(as formaldehyde)(8 hours):0.1 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

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:
Indirect vented goggles.

Select and use eye protection in accordance with AS/NZS 1336. Eye protection should comply with the performance specifications of AS/NZS 1337.

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	Solid.
Specific Physical Form:	Putty
Colour	Red
Odour	Pine
Odour threshold	*No data available.*
pH	*No data available.*
Melting point/Freezing point	*Not applicable.*
Boiling point/Initial boiling point/Boiling range	*Not applicable.*
Flash point	No flash point
Evaporation rate	*Not applicable.*
Flammability (solid, gas)	Not classified
Flammable Limits(LEL)	*Not applicable.*
Flammable Limits(UEL)	*Not applicable.*
Vapour pressure	*Not applicable.*
Vapour density	*Not applicable.*
Density	1.25 g/cm3
Relative density	1.25 [*Ref Std:*WATER=1]
Water solubility	*No data available.*
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Autoignition temperature	*Not applicable.*
Decomposition temperature	*No data available.*
Viscosity	*No data available.*
Volatile organic compounds (VOC)	< 1 % weight
VOC less H2O & exempt solvents	< 1 g/l

SECTION 10: Stability and reactivity

10.1 Reactivity
This material is considered to be non reactive under normal use conditions

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
None known.

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.

Skin contact
Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

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

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

Additional Health Effects:

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

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	Ingestion		No data available; calculated ATE2,000 - 5,000 mg/kg
Boron zinc hydroxide oxide	Dermal	Rabbit	LD50 > 5,000 mg/kg
Boron zinc hydroxide oxide	Inhalation-Dust/Mist	Rat	LC50 > 4.95 mg/l
Boron zinc hydroxide oxide	Ingestion	Rat	LD50 > 5,000 mg/kg
Silicic acid, sodium salt	Dermal	Rabbit	LD50 > 4,640 mg/kg
Silicic acid, sodium salt	Ingestion	Rat	LD50 500 mg/kg
Polyisobutylene	Dermal		LD50 estimated to be > 5,000 mg/kg
Polyisobutylene	Ingestion	Rat	LD50 > 2,000 mg/kg
Polymer	Dermal	Rabbit	LD50 > 2,000 mg/kg
Polymer	Ingestion	Rat	LD50 > 5,000 mg/kg
Melamine Phosphate	Dermal		LD50 estimated to be 2,000 - 5,000 mg/kg
Melamine Phosphate	Ingestion	Rat	LD50 > 4,000 mg/kg
Glass Wool	Dermal		LD50 estimated to be > 5,000 mg/kg
Glass Wool	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Butadiene-Styrene-Meta-	Dermal		LD50 estimated to be > 5,000 mg/kg

Divinylbenzene Polymer			
Butadiene-Styrene-Meta-Divinylbenzene Polymer	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Silane, trimethoxyoctyl-, hydrolysis products with silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Silane, trimethoxyoctyl-, hydrolysis products with silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Silane, trimethoxyoctyl-, hydrolysis products with silica	Ingestion	Rat	LD50 > 5,110 mg/kg
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Dermal	Rat	LD50 > 1,600 mg/kg
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Ingestion	Rat	LD50 > 1,000 mg/kg
Alpha-Methylstyrene-Isoamylene-Piperylene Polymer	Dermal		LD50 estimated to be > 5,000 mg/kg
Alpha-Methylstyrene-Isoamylene-Piperylene Polymer	Ingestion	Rat	LD50 > 40,000 mg/kg
Rosin	Dermal	Rabbit	LD50 > 2,500 mg/kg
Rosin	Ingestion	Rat	LD50 7,600 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Boron zinc hydroxide oxide	Rabbit	No significant irritation
Silicic acid, sodium salt	Rabbit	Corrosive
Polyisobutylene	Rabbit	No significant irritation
Polymer	Professional judgement	No significant irritation
Glass Wool	Professional judgement	No significant irritation
Butadiene-Styrene-Meta-Divinylbenzene Polymer	Professional judgement	Minimal irritation
Silane, trimethoxyoctyl-, hydrolysis products with silica	Rabbit	No significant irritation
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Rabbit	No significant irritation
Rosin	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Boron zinc hydroxide oxide	Rabbit	Severe irritant
Silicic acid, sodium salt	Rabbit	Corrosive
Polyisobutylene	Rabbit	No significant irritation
Glass Wool	Professional judgement	No significant irritation
Silane, trimethoxyoctyl-, hydrolysis products with silica	Rabbit	No significant irritation
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Rabbit	Mild irritant
Rosin	Rabbit	Mild irritant

Skin Sensitisation

Name	Species	Value
Boron zinc hydroxide oxide	Guinea pig	Not classified
Silicic acid, sodium salt	Mouse	Not classified
Silane, trimethoxyoctyl-, hydrolysis products with silica	Human and animal	Not classified

4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Guinea pig	Not classified
Rosin	Guinea pig	Sensitising

Respiratory Sensitisation

Name	Species	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Human	Not classified
Rosin	Human	Not classified

Germ Cell Mutagenicity

Name	Route	Value
Boron zinc hydroxide oxide	In Vitro	Some positive data exist, but the data are not sufficient for classification
Silicic acid, sodium salt	In Vitro	Not mutagenic
Silicic acid, sodium salt	In vivo	Not mutagenic
Glass Wool	In Vitro	Some positive data exist, but the data are not sufficient for classification
Silane, trimethoxyoctyl-, hydrolysis products with silica	In Vitro	Not mutagenic
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	In vivo	Not mutagenic
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Glass Wool	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Silane, trimethoxyoctyl-, hydrolysis products with silica	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Boron zinc hydroxide oxide	Ingestion	Toxic to male reproduction	Rat	NOAEL 100 mg/kg/day	92 days
Boron zinc hydroxide oxide	Ingestion	Toxic to development	Rat	LOAEL 100 mg/kg/day	during gestation
Silicic acid, sodium salt	Ingestion	Not classified for development	Mouse	NOAEL 200 mg/kg/day	during gestation
Silane, trimethoxyoctyl-, hydrolysis products with silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Silane, trimethoxyoctyl-, hydrolysis products with silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Silane, trimethoxyoctyl-, hydrolysis products with silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis

4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Boron zinc hydroxide oxide	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Silicic acid, sodium salt	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Boron zinc hydroxide oxide	Inhalation	immune system | respiratory system | heart | endocrine system | hematopoietic system | liver | nervous system | kidney and/or bladder	Not classified	Rat	NOAEL 0.15 mg/l	2 weeks
Boron zinc hydroxide oxide	Ingestion	endocrine system | liver | kidney and/or bladder | heart | skin | bone, teeth, nails, and/or hair | hematopoietic system | immune system | nervous system | eyes | respiratory system | vascular system	Not classified	Rat	NOAEL 375 mg/kg/day	92 days
Silicic acid,	Ingestion	kidney and/or	Some positive	Dog	LOAEL 2,400	4 weeks

sodium salt		bladder	data exist, but the data are not sufficient for classification		mg/kg/day	
Silicic acid, sodium salt	Ingestion	endocrine system | blood	Not classified	Rat	NOAEL 804 mg/kg/day	3 months
Silicic acid, sodium salt	Ingestion	heart | liver	Not classified	Rat	NOAEL 1,259 mg/kg/day	8 weeks
Glass Wool	Inhalation	respiratory system	Not classified	Human	NOAEL not available	occupational exposure
Silane, trimethoxyoctyl-, hydrolysis products with silica	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Ingestion	auditory system | heart | endocrine system | hematopoietic system | liver | eyes | kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days

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

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 1: Very 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
Methyl Esters of Hydrogenated Rosin	8050-15-5	Fathead minnow	Estimated	96 hours	Lethal Level 50%	>100 mg/l
Methyl Esters of Hydrogenated Rosin	8050-15-5	Green Algae	Estimated	72 hours	Effect Level 50%	>100 mg/l
Methyl Esters of Hydrogenated Rosin	8050-15-5	Water flea	Experimental	48 hours	Effect Level 50%	27 mg/l
Polyisobutylene	9003-27-4		Data not available or insufficient for classification			
Polymer	Trade Secret		Data not available or insufficient for classification			
Boron zinc hydroxide oxide	138265-88-0	Chinook Salmon	Estimated	96 hours	LC50	0.43 mg/l
Boron zinc hydroxide oxide	138265-88-0	Green Algae	Estimated	72 hours	EC50	0.085 mg/l
Boron zinc hydroxide oxide	138265-88-0	Water flea	Estimated	48 hours	EC50	5.9 mg/l
Boron zinc hydroxide oxide	138265-88-0	Green Algae	Estimated	72 hours	NOEC	0.039 mg/l
Silicic acid, sodium salt	1344-09-8	Green algae	Experimental	72 hours	EC50	>345.4 mg/l
Silicic acid, sodium salt	1344-09-8	Rainbow trout	Experimental	96 hours	LC50	281 mg/l
Silicic acid, sodium salt	1344-09-8	Water flea	Experimental	48 hours	EC50	1,700 mg/l
Silicic acid, sodium salt	1344-09-8	Green algae	Experimental	72 hours	NOEC	35 mg/l
Melamine Phosphate	41583-09-9	Green Algae	Estimated	96 hours	EC50	1,700 mg/l
Melamine Phosphate	41583-09-9	Guppy	Estimated	96 hours	LC50	>5,300 mg/l
Melamine Phosphate	41583-09-9	Water flea	Estimated	48 hours	EC50	85 mg/l
Melamine Phosphate	41583-09-9	Green Algae	Estimated	96 hours	NOEC	>570 mg/l
Melamine	41583-09-9	Water flea	Estimated	21 days	NOEC	32 mg/l

Phosphate						
Glass Wool	65997-17-3	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
Glass Wool	65997-17-3	Water flea	Experimental	72 hours	EC50	>1,000 mg/l
Glass Wool	65997-17-3	Zebra Fish	Experimental	96 hours	LC50	>1,000 mg/l
Glass Wool	65997-17-3	Green algae	Experimental	72 hours	NOEC	>=1,000 mg/l
4,4'-isopropylidene diphenol-epichlorohydrin polymer (MW>1200)	25068-38-6	Water flea	Estimated	21 days	NOEC	>1.48 mg/l
Alpha-Methylstyrene-Isoamylene-Piperylene Polymer	62258-49-5		Data not available or insufficient for classification			
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Green Algae	Experimental	72 hours	EC50	>100 mg/l
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Water flea	Experimental	24 hours	EC50	>100 mg/l
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Zebra Fish	Experimental	96 hours	LC50	>100 mg/l
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Green Algae	Experimental	72 hours	NOEC	60 mg/l
Butadiene-Styrene-Meta-Divinylbenzene Polymer	26471-45-4		Data not available or insufficient for classification			
Rosin	8050-09-7	Green Algae	Experimental	72 hours	Effect Level 50%	>100 mg/l
Rosin	8050-09-7	Water flea	Experimental	48 hours	Effect Level 50%	911 mg/l
Rosin	8050-09-7	Zebra Fish	Experimental	96 hours	Lethal Level 50%	>1 mg/l
Rosin	8050-09-7	Green Algae	Experimental	72 hours	No obs Effect Level	>100 mg/l

12.2. Persistence and degradability

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
Methyl Esters of Hydrogenated	8050-15-5	Experimental Biodegradation	28 days	CO2 evolution	17.7 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2

Rosin						
Polyisobutylene	9003-27-4	Estimated Biodegradation	28 days	BOD	2.8 % weight	OECD 301B - Modified sturm or CO2
Polymer	Trade Secret	Data not available-insufficient			N/A	
Boron zinc hydroxide oxide	138265-88-0	Data not available-insufficient			N/A	
Silicic acid, sodium salt	1344-09-8	Data not available-insufficient			N/A	
Melamine Phosphate	41583-09-9	Estimated Biodegradation	14 days	BOD	0 % BOD/ThBOD	OECD 301C - MITI test (I)
Glass Wool	65997-17-3	Data not available-insufficient			N/A	
4,4'-isopropylidene diphenol-epichlorohydrin polymer (MW>1200)	25068-38-6	Estimated Biodegradation	28 days	BOD	7 % BOD/ThBOD	OECD 301C - MITI test (I)
Alpha-Methylstyrene-Isoamylene-Piperylene Polymer	62258-49-5	Estimated Biodegradation	28 days	CO2 evolution	18.7 % weight	OECD 301B - Modified sturm or CO2
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Data not available-insufficient			N/A	
Butadiene-Styrene-Meta-Divinylbenzene Polymer	26471-45-4	Data not available-insufficient			N/A	
Rosin	8050-09-7	Experimental Biodegradation	28 days	CO2 evolution	64 % weight	OECD 301B - Modified sturm or CO2

12.3 : Bioaccumulative potential

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
Methyl Esters of Hydrogenated Rosin	8050-15-5	Experimental Bioconcentration		Log Kow	> 6.5	Other methods
Polyisobutylene	9003-27-4	Estimated Bioconcentration		Bioaccumulation factor	8.8	Estimated: Bioconcentration factor
Polymer	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Boron zinc	138265-88-0	Estimated		Bioaccumulatio	=217	OECD 305E -

hydroxide oxide		Bioconcentration		n factor		Bioaccumulation flow-through fish test
Silicic acid, sodium salt	1344-09-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Melamine Phosphate	41583-09-9	Estimated BCF-Carp	42 days	Bioaccumulation factor	<3.8	OECD 305E - Bioaccumulation flow-through fish test
Glass Wool	65997-17-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
4,4'-isopropylidene diphenol-epichlorohydrin polymer (MW>1200)	25068-38-6	Estimated Bioconcentration		Bioaccumulation factor	7.4	Other methods
Alpha-Methylstyrene-Isoamylene-Piperylene Polymer	62258-49-5	Estimated Bioconcentration		Bioaccumulation factor	7.7	Estimated: Bioconcentration factor
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Butadiene-Styrene-Meta-Divinylbenzene Polymer	26471-45-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Rosin	8050-09-7	Estimated BCF - Rainbow Tr	20 days	Bioaccumulation factor	129	Other methods

12.4. Mobility in soil
Please contact manufacturer for more details

12.5 Other adverse effects
No information available.

SECTION 13: Disposal considerations

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

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials.

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 BORATE, 4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER)
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 BORATE, 4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER)
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 BORATE, 4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER)
Class/Division: 9
Sub Risk: Not applicable.
Packing Group: III
Marine Pollutant: ZINC BORATE, 4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER
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:
This product is defined as an article under the Industrial Chemicals (Notification and Assessment) Act 1989, as amended, and is exempt from inventory requirements under 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