Safety Data Sheet

Document Group:	21-2441-0	**Version Number:**	4.00
Issue Date:	01/09/2022	**Supercedes Date:**	29/03/2020

This Safety Data Sheet has been prepared in accordance with the Malaysia Occupational Safety and Health (Chemical Classification, Labelling and Safety Data Sheets) Regulations 2013.

SECTION 1: Identification

1.1. Product identifier
3M Fire Barrier Moldable Putty + Pads

Product Identification Numbers

98-0400-5524-0	98-0400-5525-7	98-0400-5526-5	98-0400-5547-1	98-0441-1056-1
98-0441-1107-2	98-0441-1108-0			

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 Malaysia Sdn. Bhd., Level 8, Block F, Oasis Square, No.2, Jalan PJU 1A/7A, Ara Damansara 47301 Petaling, Jaya, Selangor
Telephone:	03-7884 2888
E Mail:	3mmyehsr@mmm.com
Website:	www.3M.com.my

1.4. Emergency telephone number
+60 03-7884 2888

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Serious Eye Damage/Irritation: Category 2.
Reproductive Toxicity: Category 2.
Chronic Aquatic Toxicity: Category 2.

2.2. Label elements
Signal word
Warning

Symbols

Exclamation mark |Health Hazard |Environment |

Pictograms

Hazard Statements:

H319	Causes serious eye irritation.
H361	Suspected of damaging fertility or the unborn child.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

General:

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

Prevention:

P273	Avoid release to the environment.
P281	Use personal protective equipment as required.

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.

Storage:

P405	Store locked up.

Disposal:

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

2.3. Other hazards

None known

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
Zinc Borate 2335	138265-88-0	20 - 25
Methyl Esters of Hydrogenated Rosin	8050-15-5	10 - 15
Polyisobutylene	9003-27-4	10 - 15
Sodium Silicate	1344-09-8	10 - 15
Styrene-Butadiene Polymer	9003-55-8	10 - 15
Glass Wool	65997-17-3	5 - 10
Melamine Phosphate	41583-09-9	5 - 10
Butadiene-Styrene-Meta-Divinylbenzene Polymer	26471-45-4	1 - 5
Alpha-Methylstyrene-Isoamylene-Piperylene Polymer	62258-49-5	1 - 3
Regenerated Cellulose	68442-85-3	< 3

Synthetic amorphous silica, fumed, crystalline-free	112945-52-5	1 - 3
Water	7732-18-5	1 - 3
Rayon Fiber	None	1 - 3
Fatty Acids, C14-18 and C16-18-Unsatd.	67701-06-8	< 1.5
Rosin	8050-09-7	< 1

Any remaining components do not contribute to the hazards of this material.

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
No critical symptoms or effects. 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.

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/vapors/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 (gloves, respirators, etc.) 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	C.A.S. No.	Agency	Limit type	Additional Comments
GLASS FILAMENTS	65997-17-3	Malaysia OELs	TWA(inhalable fraction)(8 hours):5 mg/m3;TWA(as fiber)(8 hours):1 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	TWA(as Resin, inhalable fraction):0.001 mg/m3	Dermal/Respiratory Sensitizer
Rosin	8050-09-7	Malaysia OELs	Limit value not established:	

ACGIH : American Conference of Governmental Industrial Hygienists
CMRG : Chemical Manufacturer's Recommended Guidelines
Malaysia OELs : Malaysia. Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

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/vapors/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

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

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 vapors and particulates

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Specific Physical Form:	Putty
Color	Red
Odor	Pine
Odor 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*
Vapor Pressure	*Not Applicable*
Vapor Density and/or Relative Vapor 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/Kinematic Viscosity	*No Data Available*
Volatile Organic Compounds	< 1 % weight
Percent volatile	*No Data Available*
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. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
None known.

10.5. Incompatible materials
None known.

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 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 labeling, 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 diarrhea.

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 ATE >2,000 - =5,000 mg/kg
Zinc Borate 2335	Dermal	Rabbit	LD50 > 10,000 mg/kg
Zinc Borate 2335	Inhalation-Dust/Mist	Rat	LC50 > 4.95 mg/l
Zinc Borate 2335	Ingestion	Rat	LD50 > 10,000 mg/kg
Sodium Silicate	Dermal	Rabbit	LD50 > 4,640 mg/kg
Sodium Silicate	Ingestion	Rat	LD50 500 mg/kg
Styrene-Butadiene Polymer	Dermal	Rabbit	LD50 > 2,000 mg/kg
Styrene-Butadiene Polymer	Ingestion	Rat	LD50 > 5,000 mg/kg
Polyisobutylene	Dermal		LD50 estimated to be > 5,000 mg/kg
Polyisobutylene	Ingestion	Rat	LD50 > 2,000 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-Divinylbenzene Polymer	Dermal		LD50 estimated to be > 5,000 mg/kg
Butadiene-Styrene-Meta-Divinylbenzene Polymer	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Synthetic amorphous silica, fumed, crystalline-free	Dermal	Rabbit	LD50 > 5,000 mg/kg
Synthetic amorphous silica, fumed, crystalline-free	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Synthetic amorphous silica, fumed, crystalline-free	Ingestion	Rat	LD50 > 5,110 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
Fatty Acids, C14-18 and C16-18-Unsatd.	Ingestion	Rat	LD50 > 2,000 mg/kg
Fatty Acids, C14-18 and C16-18-Unsatd.	Dermal	similar compounds	LD50 > 2,000 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
Zinc Borate 2335	Rabbit	No significant irritation
Sodium Silicate	Rabbit	Corrosive
Styrene-Butadiene Polymer	Professional judgement	No significant irritation
Polyisobutylene	Rabbit	No significant irritation
Glass Wool	Professional judgement	No significant irritation
Butadiene-Styrene-Meta-Divinylbenzene Polymer	Professional judgement	Minimal irritation
Synthetic amorphous silica, fumed, crystalline-free	Rabbit	No significant irritation
Fatty Acids, C14-18 and C16-18-Unsatd.	similar	No significant irritation

	compounds	
Rosin	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Zinc Borate 2335	Rabbit	Severe irritant
Sodium Silicate	Rabbit	Corrosive
Polyisobutylene	Rabbit	No significant irritation
Glass Wool	Professional judgement	No significant irritation
Synthetic amorphous silica, fumed, crystalline-free	Rabbit	No significant irritation
Fatty Acids, C14-18 and C16-18-Unsatd.	similar compounds	Mild irritant
Rosin	Rabbit	Mild irritant

Sensitization:

Skin Sensitization

Name	Species	Value
Zinc Borate 2335	Guinea pig	Not classified
Sodium Silicate	Mouse	Not classified
Synthetic amorphous silica, fumed, crystalline-free	Human and animal	Not classified
Fatty Acids, C14-18 and C16-18-Unsatd.	similar compounds	Not classified
Rosin	Guinea pig	Sensitizing

Respiratory Sensitization

Name	Species	Value
Rosin	Human	Not classified

Germ Cell Mutagenicity

Name	Route	Value
Zinc Borate 2335	In Vitro	Some positive data exist, but the data are not sufficient for classification
Sodium Silicate	In Vitro	Not mutagenic
Sodium Silicate	In vivo	Not mutagenic
Glass Wool	In Vitro	Some positive data exist, but the data are not sufficient for classification
Synthetic amorphous silica, fumed, crystalline-free	In Vitro	Not mutagenic
Fatty Acids, C14-18 and C16-18-Unsatd.	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Glass Wool	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Synthetic amorphous silica, fumed, crystalline-free	Not Specified	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
Zinc Borate 2335	Ingestion	Toxic to male reproduction	Rat	NOAEL 100 mg/kg/day	92 days
Zinc Borate 2335	Ingestion	Toxic to development	Rat	LOAEL 100 mg/kg/day	during gestation
Sodium Silicate	Ingestion	Not classified for development	Mouse	NOAEL 200 mg/kg/day	during gestation
Synthetic amorphous silica, fumed, crystalline-free	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Synthetic amorphous silica, fumed, crystalline-free	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Synthetic amorphous silica, fumed, crystalline-free	Ingestion	Not classified for development	Rat	NOAEL 1,350 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
Zinc Borate 2335	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Sodium Silicate	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
Zinc Borate 2335	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
Zinc Borate 2335	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
Sodium Silicate	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Dog	LOAEL 2,400 mg/kg/day	4 weeks
Sodium Silicate	Ingestion	endocrine system | blood	Not classified	Rat	NOAEL 804 mg/kg/day	3 months
Sodium Silicate	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
Synthetic amorphous silica, fumed, crystalline-	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure

free						

Aspiration Hazard
For the component/components, either no data are currently available or the data are 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.

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 labeling, 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 #	Organism	Type	Exposure	Test Endpoint	Test Result
Zinc Borate 2335	138265-88-0	Activated sludge	Estimated	4 hours	NOEC	0.33 mg/l
Zinc Borate 2335	138265-88-0	Green algae	Estimated	72 hours	IC50	0.45 mg/l
Zinc Borate 2335	138265-88-0	Rainbow Trout	Estimated	96 hours	LC50	0.56 mg/l
Zinc Borate 2335	138265-88-0	Water flea	Estimated	48 hours	EC50	0.33 mg/l
Zinc Borate 2335	138265-88-0	Green algae	Estimated	72 hours	NOEC	0.02 mg/l
Zinc Borate 2335	138265-88-0	Invertebrate	Estimated	24 days	NOEC	0.02 mg/l
Zinc Borate 2335	138265-88-0	Rainbow Trout	Estimated	25 days	NOEC	0.08 mg/l
Zinc Borate 2335	138265-88-0	Water flea	Estimated	21 days	NOEC	0.12 mg/l
Methyl Esters of Hydrogenated Rosin	8050-15-5	Fathead Minnow	Estimated	96 hours	LL50	>100 mg/l
Methyl Esters of Hydrogenated Rosin	8050-15-5	Green algae	Estimated	72 hours	EL50	>100 mg/l
Methyl Esters of Hydrogenated Rosin	8050-15-5	Water flea	Experimental	48 hours	EL50	27 mg/l

Polyisobutylene	9003-27-4		Data not available or insufficient for classification			N/A
Sodium Silicate	1344-09-8	Bacteria	Experimental	30 minutes	NOEC	>3,454 mg/l
Sodium Silicate	1344-09-8	Green algae	Experimental	72 hours	EC50	>345.4 mg/l
Sodium Silicate	1344-09-8	Rainbow Trout	Experimental	96 hours	LC50	281 mg/l
Sodium Silicate	1344-09-8	Water flea	Experimental	48 hours	EC50	1,700 mg/l
Sodium Silicate	1344-09-8	Green algae	Experimental	72 hours	NOEC	35 mg/l
Styrene-Butadiene Polymer	9003-55-8		Data not available or insufficient for classification			N/A
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
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 Phosphate	41583-09-9	Water flea	Estimated	21 days	NOEC	32 mg/l
Butadiene-Styrene-Meta-Divinylbenzene Polymer	26471-45-4		Data not available or insufficient for classification			N/A
Alpha-Methylstyrene-Isoamylene-Piperylene Polymer	62258-49-5		Data not available or insufficient for classification			N/A
Regenerated Cellulose	68442-85-3		Data not available or insufficient for classification			N/A
Synthetic amorphous silica, fumed, crystalline-free	112945-52-5	Green algae	Analogous Compound	72 hours	ErC50	>173.1 mg/l
Synthetic amorphous silica, fumed, crystalline-free	112945-52-5	Sediment organism	Analogous Compound	96 hours	EC50	8,500 mg/kg (Dry Weight)
Synthetic amorphous silica, fumed, crystalline-free	112945-52-5	Water flea	Analogous Compound	24 hours	EL50	>10,000 mg/l
Synthetic amorphous	112945-52-5	Zebra Fish	Analogous Compound	96 hours	LL50	>10,000 mg/l

silica, fumed, crystalline-free						
Synthetic amorphous silica, fumed, crystalline-free	112945-52-5	Green algae	Analogous Compound	72 hours	NOEC	173.1 mg/l
Synthetic amorphous silica, fumed, crystalline-free	112945-52-5	Water flea	Analogous Compound	21 days	NOEC	68 mg/l
Synthetic amorphous silica, fumed, crystalline-free	112945-52-5	Activated sludge	Experimental	3 hours	EC50	>1,000 mg/l
Fatty Acids, C14-18 and C16-18-Unsatd.	67701-06-8		Data not available or insufficient for classification			N/A
Rosin	8050-09-7	Bacteria	Experimental		EC50	76.1 mg/l
Rosin	8050-09-7	Green algae	Experimental	72 hours	EL50	>100 mg/l
Rosin	8050-09-7	Water flea	Experimental	48 hours	EL50	911 mg/l
Rosin	8050-09-7	Zebra Fish	Experimental	96 hours	LL50	>1 mg/l
Rosin	8050-09-7	Green algae	Experimental	72 hours	NOEL	100 mg/l

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Zinc Borate 2335	138265-88-0	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Methyl Esters of Hydrogenated Rosin	8050-15-5	Experimental Biodegradation	28 days	Carbon dioxide evolution	17.7 %CO2 evolution/THCO2 evolution	OECD 301B - Mod. Sturm or CO2
Polyisobutylene	9003-27-4	Estimated Biodegradation	28 days	Carbon dioxide evolution	2.8 %CO2 evolution/THCO2 evolution	Modeled
Sodium Silicate	1344-09-8	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Styrene-Butadiene Polymer	9003-55-8	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Glass Wool	65997-17-3	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Melamine Phosphate	41583-09-9	Estimated Biodegradation	14 days	Biological Oxygen Demand	0 %BOD/ThOD	OECD 301C - MITI (I)
Butadiene-Styrene-Meta-Divinylbenzene Polymer	26471-45-4	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Alpha-	62258-49-5	Estimated	28 days	Carbon dioxide	18.7 %CO2	OECD 301B - Mod.

Methylstyrene-Isoamylene-Piperylene Polymer		Biodegradation		evolution	evolution/THCO2 evolution	Sturm or CO2
Regenerated Cellulose	68442-85-3	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Synthetic amorphous silica, fumed, crystalline-free	112945-52-5	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Fatty Acids, C14-18 and C16-18-Unsatd.	67701-06-8	Analogous Compound Biodegradation	28 days	Biological Oxygen Demand	78 %BOD/ThOD	OECD 301C - MITI (I)
Rosin	8050-09-7	Experimental Biodegradation	28 days	Carbon dioxide evolution	64 %CO2 evolution/THCO2 evolution	OECD 301B - Mod. Sturm or CO2

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Zinc Borate 2335	138265-88-0	Estimated BCF - Fish	56 days	Bioaccumulation Factor	242	OECD305-Bioconcentration
Methyl Esters of Hydrogenated Rosin	8050-15-5	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	> 6.5	
Polyisobutylene	9003-27-4	Estimated Bioconcentration		Bioaccumulation Factor	8.8	
Sodium Silicate	1344-09-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Styrene-Butadiene Polymer	9003-55-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Glass Wool	65997-17-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Melamine Phosphate	41583-09-9	Estimated BCF - Fish	42 days	Bioaccumulation Factor	<3.8	OECD305-Bioconcentration
Butadiene-Styrene-Meta-Divinylbenzene Polymer	26471-45-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Alpha-Methylstyrene-Isoamylene-Piperylene Polymer	62258-49-5	Estimated Bioconcentration		Bioaccumulation Factor	7.7	
Regenerated	68442-85-3	Data not	N/A	N/A	N/A	N/A

Cellulose		available or insufficient for classification				
Synthetic amorphous silica, fumed, crystalline-free	112945-52-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Fatty Acids, C14-18 and C16-18-Unsatd.	67701-06-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Rosin	8050-09-7	Analogous Compound BCF - Fish	20 days	Bioaccumulation Factor	129	

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

According to the Environmental Quality (Scheduled Wastes) Regulations 2005, scheduled waste has to be sent to a prescribed premise for recycling, treatment or disposal. Please approach Kualiti Alam for proper schedule waste classification and disposal.

SECTION 14: Transport Information

Marine Transport (IMDG)

UN Number: None assigned.
Proper Shipping Name: None assigned.
Technical Name: None assigned.
Hazard Class/Division: None assigned.
Subsidiary Risk: None assigned.
Packing Group: None assigned.
Limited Quantity: None assigned.
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
Not restricted, as per IMDG code 2.10.2.7, marine pollutant exception.

Air Transport (IATA)

UN Number: None assigned.
Proper Shipping Name: None assigned.
Technical Name: None assigned.
Hazard Class/Division: None assigned.
Subsidiary Risk: None assigned.
Packing Group: None assigned.
Limited Quantity: None assigned.

Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
Not restricted, as per Special Provision A197, environmentally hazardous substance exception.

Transportation classifications are provided as a customer service. As for shipping, YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M's transportation classifications are based on product formulation, packaging, 3M policies and 3M's understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and not the packaging, labeling or marking requirements. The above information is only for reference. If you are shipping by air or ocean, YOU are advised to check & meet applicable regulatory requirements.

SECTION 15: Regulatory information

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

Global inventory status
Contact 3M for more information. The components of this product are in compliance with the new substance notification requirements of CEPA. 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.

SECTION 16: Other information

DISCLAIMER: The information in this Safety Data Sheet (SDS) 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 SDS or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own evaluation 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 Malaysia, you are responsible for all applicable regulatory requirements, including, but not limited to, product registrations/notifications, substance volume tracking, and potential substance registration/notification.

3M Malaysia SDSs are available at www.3M.com.my