Safety Data Sheet

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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™ Scotch-Weld™ Low Odor Acrylic Adhesive DP810NS Tan and Low Odor Acrylic Adhesive 810NS Tan, Part B

Product Identification Numbers
62-2799-8730-9

1.2. Recommended use and restrictions on use

Recommended use
Structural adhesive

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 1.
Skin Corrosion/Irritation: Category 2.
Skin Sensitizer: Category 1.
Chronic Aquatic Toxicity: Category 2.

2.2. Label elements
Signal word
Danger

Symbols
Corrosion | Exclamation mark | Environment |

Pictograms

Hazard Statements

H318	Causes serious eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

General:

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

Prevention:

P280B	Wear protective gloves and eye/face protection.
P273	Avoid release to the environment.

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.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P310	Immediately call a POISON CENTER or doctor/physician.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.

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
PHENOXYETHYL METHACRYLATE	10595-06-9	10 - 40
2-HYDROXYETHYL METHACRYLATE	868-77-9	10 - 30
Hydroxypropyl Methacrylate	27813-02-1	10 30
ACRYLATE OLIGOMER	41637-38-1	5 - 20
Acrylonitrile-Butadiene Polymer	9010-81-5	5 - 20
Methyl Methacrylate- Butadiene-Styrene Polymer	25101-28-4	5 - 20
Modified Silica	68611-44-9	1 - 10
2-Hydroxyethyl Methacrylate Phopshate	52628-03-2	< 4
4-Methoxyphenol	150-76-5	< 1
Phenothiazine	92-84-2	< 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:
Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:
Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately 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
In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

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

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Chloride	During Combustion
Oxides of Nitrogen	During Combustion
Toxic Vapor, Gas, Particulate	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. 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 dikes to prevent entry into sewer systems or

bodies of water.

6.3. Methods and material for containment and cleaning up
Contain spill. 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 closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. 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
For industrial/occupational use only. Not for consumer sale or use. Do not use in a confined area with minimal air exchange. 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. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Keep away from reactive metals (eg. Aluminum, zinc etc.) to avoid the formation of hydrogen gas that could create an explosion hazard.

7.2. Conditions for safe storage including any incompatibilities
Store away from heat. 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	C.A.S. No.	Agency	Limit type	Additional Comments
4-Methoxyphenol	150-76-5	ACGIH	TWA:5 mg/m3	
4-Methoxyphenol	150-76-5	Malaysia OELs	TWA(8 hours):5 mg/m3	
Phenothiazine	92-84-2	ACGIH	TWA:5 mg/m3	Danger of cutaneous absorption
Phenothiazine	92-84-2	Malaysia OELs	TWA(8 hours):5 mg/m3	SKIN

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:
Full Face Shield

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	Liquid
Specific Physical Form:	Paste
Color	Green
Odor	Methacrylate
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*Not Applicable*
Boiling point/Initial boiling point/Boiling range	87 ºC
Flash Point	> 93.3 ºC [*Test Method:*Closed Cup]
Evaporation rate	*No Data Available*
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*
Vapor Pressure	<=13.3 Pa
Vapor Density	*No Data Available*
Density	1.07 g/ml
Relative Density	1.07 [*Ref Std:*WATER=1]
Water solubility	Slight (less than 10%)
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	90,000 mPa-s
Molecular weight	*No Data Available*
VOC Less H2O & Exempt Solvents	3.1 g/l [*Details:*when used as intended with Part A]
VOC Less H2O & Exempt Solvents	0.3 % [*Details:*when used as intended with Part A]
VOC Less H2O & Exempt Solvents	319 g/l [*Details:*as supplied]

SECTION 10: Stability and reactivity

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

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization may occur.

10.4. Conditions to avoid
Heat
Sparks and/or flames
Heat is generated during cure. Do not cure a mass larger than 50 grams in a confined space to prevent a premature exothermic reaction with production of intense heat and smoke.

10.5. Incompatible materials
Amines
Reducing agents
Reactive metals

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

Photosensitization: Signs/symptoms may include a sunburn-like reaction such as blistering, redness, swelling, and itching from minor exposure to sunlight.

Eye Contact:
Corrosive (Eye Burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Ingestion:
Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

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 >5,000 mg/kg
PHENOXYETHYL METHACRYLATE	Dermal		LD50 estimated to be 2,000 - 5,000 mg/kg
PHENOXYETHYL METHACRYLATE	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
2-HYDROXYETHYL METHACRYLATE	Dermal	Rabbit	LD50 > 5,000 mg/kg
2-HYDROXYETHYL METHACRYLATE	Ingestion	Rat	LD50 5,564 mg/kg
Methyl Methacrylate- Butadiene-Styrene Polymer	Dermal		LD50 estimated to be > 5,000 mg/kg
Hydroxypropyl Methacrylate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Hydroxypropyl Methacrylate	Ingestion	Rat	LD50 > 2,000 mg/kg
Methyl Methacrylate- Butadiene-Styrene Polymer	Ingestion	Rat	LD50 > 5,000 mg/kg
Acrylonitrile-Butadiene Polymer	Dermal		LD50 estimated to be > 5,000 mg/kg
Acrylonitrile-Butadiene Polymer	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
ACRYLATE OLIGOMER	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
ACRYLATE OLIGOMER	Ingestion	Rat	LD50 > 2,000 mg/kg
Modified Silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Modified Silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Modified Silica	Ingestion	Rat	LD50 > 5,110 mg/kg
2-Hydroxyethyl Methacrylate Phopshate	Ingestion	Rat	LD50 > 2,000 mg/kg
4-Methoxyphenol	Dermal	Rat	LD50 > 2,000 mg/kg
4-Methoxyphenol	Ingestion	Rat	LD50 1,630 mg/kg
Phenothiazine	Dermal	Rat	LD50 > 2,000 mg/kg
Phenothiazine	Ingestion	Rat	LD50 1,370 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
2-HYDROXYETHYL METHACRYLATE	Rabbit	Minimal irritation
PHENOXYETHYL METHACRYLATE	similar compounds	Irritant
Hydroxypropyl Methacrylate	Rabbit	Minimal irritation
Acrylonitrile-Butadiene Polymer	Professional judgement	No significant irritation
Modified Silica	Rabbit	No significant irritation
2-Hydroxyethyl Methacrylate Phopshate	Rabbit	Corrosive
4-Methoxyphenol	Rabbit	Mild irritant
Phenothiazine	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
2-HYDROXYETHYL METHACRYLATE	Rabbit	Moderate irritant
PHENOXYETHYL METHACRYLATE	similar compoun	Severe irritant

	ds	
Hydroxypropyl Methacrylate	Rabbit	Moderate irritant
Acrylonitrile-Butadiene Polymer	Professional judgement	No significant irritation
Modified Silica	Rabbit	No significant irritation
2-Hydroxyethyl Methacrylate Phopshate	similar health hazards	Corrosive
4-Methoxyphenol	Rabbit	Severe irritant
Phenothiazine	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
2-HYDROXYETHYL METHACRYLATE	Human and animal	Sensitizing
Hydroxypropyl Methacrylate	Human and animal	Sensitizing
ACRYLATE OLIGOMER	Guinea pig	Not classified
Modified Silica	Human and animal	Not classified
2-Hydroxyethyl Methacrylate Phopshate	Mouse	Sensitizing
4-Methoxyphenol	Guinea pig	Sensitizing
Phenothiazine	Guinea pig	Sensitizing

Photosensitization

Name	Species	Value
Phenothiazine	Human	Sensitizing

Respiratory Sensitization

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

Germ Cell Mutagenicity

Name	Route	Value
2-HYDROXYETHYL METHACRYLATE	In vivo	Not mutagenic
2-HYDROXYETHYL METHACRYLATE	In Vitro	Some positive data exist, but the data are not sufficient for classification
PHENOXYETHYL METHACRYLATE	In Vitro	Not mutagenic
Hydroxypropyl Methacrylate	In vivo	Not mutagenic
Hydroxypropyl Methacrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
ACRYLATE OLIGOMER	In Vitro	Not mutagenic
Modified Silica	In Vitro	Not mutagenic
2-Hydroxyethyl Methacrylate Phopshate	In Vitro	Not mutagenic
4-Methoxyphenol	In vivo	Not mutagenic
4-Methoxyphenol	In Vitro	Some positive data exist, but the data are not sufficient for classification
Phenothiazine	In Vitro	Not mutagenic
Phenothiazine	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Modified Silica	Not	Mouse	Some positive data exist, but the data are not

	Specified		sufficient for classification
4-Methoxyphenol	Dermal	Multiple animal species	Not carcinogenic
4-Methoxyphenol	Ingestion	Multiple animal species	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
2-HYDROXYETHYL METHACRYLATE	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
2-HYDROXYETHYL METHACRYLATE	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	49 days
2-HYDROXYETHYL METHACRYLATE	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
Hydroxypropyl Methacrylate	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
Hydroxypropyl Methacrylate	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	49 days
Hydroxypropyl Methacrylate	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during gestation
Modified Silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Modified Silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Modified Silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
2-Hydroxyethyl Methacrylate Phopshate	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during gestation
4-Methoxyphenol	Ingestion	Not classified for female reproduction	Rat	NOAEL 300 mg/kg/day	premating into lactation
4-Methoxyphenol	Ingestion	Not classified for male reproduction	Rat	NOAEL 300 mg/kg/day	28 days
4-Methoxyphenol	Ingestion	Not classified for development	Rat	NOAEL 200 mg/kg/day	during gestation
Phenothiazine	Ingestion	Not classified for development	Rat	NOAEL 150 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
Hydroxypropyl Methacrylate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
2-Hydroxyethyl Methacrylate Phopshate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
4-Methoxyphenol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Hydroxypropyl Methacrylate	Inhalation	blood	Not classified	Rat	NOAEL 0.5 mg/l	21 days
Hydroxypropyl Methacrylate	Ingestion	hematopoietic system | heart | endocrine system | liver | immune system | nervous system | kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	41 days
Modified Silica	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
2-Hydroxyethyl Methacrylate Phopshate	Ingestion	hematopoietic system | kidney and/or bladder | heart | liver | immune system | eyes	Not classified	Rat	NOAEL 300 mg/kg/day	90 days
4-Methoxyphenol	Ingestion	gastrointestinal tract	Not classified	Rat	LOAEL 300 mg/kg/day	28 days
4-Methoxyphenol	Ingestion	liver | immune system	Not classified	Rat	NOAEL 300 mg/kg/day	28 days
4-Methoxyphenol	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 300 mg/kg/day	28 days
4-Methoxyphenol	Ingestion	heart | endocrine system | hematopoietic system | nervous system | respiratory system	Not classified	Rat	NOAEL 300 mg/kg/day	28 days
Phenothiazine	Ingestion	hematopoietic system	May cause damage to organs though prolonged or repeated exposure	Dog	NOAEL 18 mg/kg/day	13 weeks
Phenothiazine	Ingestion	heart | endocrine system | liver | kidney and/or bladder | respiratory system	Not classified	Dog	NOAEL 67 mg/kg/day	13 weeks

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
PHENOXYETHYL METHACRYLATE	10595-06-9	Golden Orfe	Experimental	96 hours	Lethal Concentration 50%	10 mg/l
PHENOXYETHYL METHACRYLATE	10595-06-9	Green algae	Experimental	96 hours	Effect Concentration 50%	4.1 mg/l
PHENOXYETHYL METHACRYLATE	10595-06-9	Water flea	Experimental	48 hours	Effect Concentration 50%	1.21 mg/l
PHENOXYETHYL METHACRYLATE	10595-06-9	Green algae	Experimental	96 hours	Effect Concentration 10%	0.42 mg/l
2-HYDROXYETHYL METHACRYLATE	868-77-9	Fathead Minnow	Experimental	96 hours	Lethal Concentration 50%	227 mg/l
2-HYDROXYETHYL METHACRYLATE	868-77-9	Green algae	Experimental	72 hours	Effect Concentration 50%	710 mg/l
2-HYDROXYETHYL METHACRYLATE	868-77-9	Water flea	Experimental	48 hours	Effect Concentration 50%	380 mg/l
2-HYDROXYETHYL METHACRYLATE	868-77-9	Green Algae	Experimental	72 hours	No obs Effect Conc	160 mg/l
2-HYDROXYETHYL METHACRYLATE	868-77-9	Water flea	Experimental	21 days	No obs Effect Conc	24.1 mg/l
Hydroxypropyl Methacrylate	27813-02-1	Golden Orfe	Experimental	48 hours	Effect Concentration 50%	493 mg/l
Hydroxypropyl Methacrylate	27813-02-1	Green Algae	Experimental	72 hours	Effect Concentration 50%	>97.2 mg/l
Hydroxypropyl Methacrylate	27813-02-1	Water flea	Experimental	48 hours	Effect Concentration 50%	>143 mg/l
Hydroxypropyl Methacrylate	27813-02-1	Green Algae	Experimental	72 hours	No obs Effect Conc	97.2 mg/l

Hydroxypropyl Methacrylate	27813-02-1	Water flea	Experimental	21 days	No obs Effect Conc	45.2 mg/l
ACRYLATE OLIGOMER	41637-38-1	Green algae	Endpoint not reached	72 hours	Effect Concentration 50%	>100 mg/l
ACRYLATE OLIGOMER	41637-38-1	Green algae	Experimental	72 hours	No obs Effect Conc	0.05 mg/l
Acrylonitrile-Butadiene Polymer	9010-81-5		Data not available or insufficient for classification			
Methyl Methacrylate-Butadiene-Styrene Polymer	25101-28-4		Data not available or insufficient for classification			
Modified Silica	68611-44-9		Data not available or insufficient for classification			
2-Hydroxyethyl Methacrylate Phopshate	52628-03-2		Data not available or insufficient for classification			
4-Methoxyphenol	150-76-5	Green Algae	Experimental	72 hours	Effect Concentration 50%	54.7 mg/l
4-Methoxyphenol	150-76-5	Rainbow Trout	Experimental	96 hours	Lethal Concentration 50%	28.5 mg/l
4-Methoxyphenol	150-76-5	Water flea	Experimental	48 hours	Effect Concentration 50%	2.2 mg/l
4-Methoxyphenol	150-76-5	Green Algae	Experimental	72 hours	No obs Effect Conc	2.96 mg/l
4-Methoxyphenol	150-76-5	Water flea	Experimental	21 days	No obs Effect Conc	0.68 mg/l
Phenothiazine	92-84-2	Green Algae	Experimental	72 hours	Effect Concentration 50%	>100 mg/l
Phenothiazine	92-84-2	Rainbow Trout	Experimental	96 hours	Lethal Concentration 50%	0.597 mg/l
Phenothiazine	92-84-2	Water flea	Experimental	48 hours	Effect Concentration 50%	0.154 mg/l

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
PHENOXYETHYL METHACRYLATE	10595-06-9	Experimental Biodegradation	28 days	Biological Oxygen Demand	22.3 % BOD/ThBOD	OECD 301D - Closed Bottle Test
2-	868-77-9	Experimental	14 days	Biological	95 %	OECD 301C - MITI (I)

HYDROXYETHYL METHACRYLATE		Biodegradation		Oxygen Demand	BOD/ThBOD	
Hydroxypropyl Methacrylate	27813-02-1	Experimental Biodegradation	28 days	Biological Oxygen Demand	81 % BOD/ThBOD	OECD 301C - MITI (I)
ACRYLATE OLIGOMER	41637-38-1	Estimated Biodegradation	28 days	Carbon dioxide evolution	7-12 % weight	OECD 301B - Mod. Sturm or CO2
Acrylonitrile-Butadiene Polymer	9010-81-5	Data not availbl-insufficient			N/A	
Methyl Methacrylate-Butadiene-Styrene Polymer	25101-28-4	Data not availbl-insufficient			N/A	
Modified Silica	68611-44-9	Data not availbl-insufficient			n/a	
2-Hydroxyethyl Methacrylate Phopshate	52628-03-2	Data not availbl-insufficient			N/A	
4-Methoxyphenol	150-76-5	Experimental Biodegradation	28 days	Biological Oxygen Demand	86 % BOD/ThBOD	OECD 301C - MITI (I)
Phenothiazine	92-84-2	Experimental Biodegradation	28 days	Biological Oxygen Demand	0 % BOD/ThBOD	OECD 301D - Closed Bottle Test

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
PHENOXYETHYL METHACRYLATE	10595-06-9	Estimated Bioconcentration		Bioaccumulation Factor	5.8	Est: Bioconcentration factor
2-HYDROXYETHYL METHACRYLATE	868-77-9	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	0.42	Other methods
Hydroxypropyl Methacrylate	27813-02-1	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	0.97	Other methods
ACRYLATE OLIGOMER	41637-38-1	Estimated Bioconcentration		Bioaccumulation Factor	6.6	Est: Bioconcentration factor
Acrylonitrile-Butadiene Polymer	9010-81-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Methyl Methacrylate-	25101-28-4	Data not available or	N/A	N/A	N/A	N/A

Butadiene-Styrene Polymer		insufficient for classification				
Modified Silica	68611-44-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-Hydroxyethyl Methacrylate Phopshate	52628-03-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
4-Methoxyphenol	150-76-5	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.58	Other methods
Phenothiazine	92-84-2	Experimental BCF-Carp	56 days	Bioaccumulation Factor	660	

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:UN3082
Proper Shipping Name:ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name: None assigned.
Hazard Class/Division:9
Subsidiary Risk: None assigned.
Packing Group:III
Limited Quantity: None assigned.
Marine Pollutant: Yes
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
None assigned.

Air Transport (IATA)

UN Number:UN3082
Proper Shipping Name:ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name: None assigned.
Hazard Class/Division:9

Subsidiary Risk: None assigned.
Packing Group:III
Limited Quantity: None assigned.
Marine Pollutant: Yes
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
None assigned.

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 material are in compliance with the provisions of the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Japan Chemical Substance Control Law. Certain restrictions may apply. Contact the selling division for additional information. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory. 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 on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications.

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