Safety Data Sheet

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Issue Date:	07/03/2023	**Supercedes Date:**	17/12/2019

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.

IDENTIFICATION

1.1. Product identifier
3M(TM) Scotch-Weld(TM) Structural Plastic Adhesive DP8010 Blue

Product Identification Numbers
62-2863-1445-5 62-2863-1450-5 62-2863-3630-0 62-2863-5030-1

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

This product is a kit or a multipart product which consists of multiple, independently packaged components. An SDS for each of these components is included. Please do not separate the component SDSs from this cover page. The document numbers of the SDSs for components of this product are:

31-9758-9, 18-1419-3

TRANSPORT INFORMATION

This product is a kit that consists of two or more different regulated materials packed in the same outer packaging (ship unit). The transportation classifications of the individual components appear in Section 14 of the attached SDSs.
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.

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

Safety Data Sheet

Document Group:	18-1419-3	**Version Number:**	5.00
Issue Date:	05/01/2023	**Supercedes Date:**	15/04/2021

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(TM) Scotch-Weld(TM) Structural Plastic Adhesive DP8010 and Structural Plastic Adhesive 8010, Part A

Product Identification Numbers
62-2883-7530-6 62-2883-8530-5 FS-9100-5342-0

1.2. Recommended use and restrictions on use

Recommended use
Structural adhesive, Industrial use

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
Acute Toxicity (oral): Category 4.
Serious Eye Damage/Irritation: Category 1.
Respiratory Sensitizer: Category 1.
Skin Sensitizer: Category 1.
Germ Cell Mutagenicity: Category 2.
Chronic Aquatic Toxicity: Category 2.

2.2. Label elements
Signal word
Danger

Symbols

Corrosion |Exclamation mark |Health Hazard |Environment |

Pictograms

Hazard Statements:

H302	Harmful if swallowed.
H318	Causes serious eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention:

P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P273	Avoid release to the environment.
P280B	Wear protective gloves and eye/face protection.
P281	Use personal protective equipment as required.
P285	In case of inadequate ventilation wear respiratory protection.

Response:

P304 + P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Disposal:

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

2.3. Other hazards

Persons previously sensitized to amines may develop a cross-sensitization reaction to certain other amines.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
Synthetic Rubber Oligomer	Trade Secret	40 - 70
Polyfunctional Aziridine	64265-57-2	10 - 30
Amine Borane Complex	223674-50-8	1 - 15
Amorphous Silica	67762-90-7	1 - 5

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:
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

Allergic respiratory reaction (difficulty breathing, wheezing, cough, and tightness of chest). Allergic skin reaction (redness, swelling, blistering, and itching). Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of vision).

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
None inherent in this product.

Hazardous Decomposition or By-Products

Substance	Condition
Aldehydes	During Combustion
Amine Compounds	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	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 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. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities
Protect from sunlight. Store away from heat. Store away from acids.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits
No occupational exposure limit values exist for any of the components listed in Section 3 of this SDS.

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. Provide appropriate local exhaust ventilation for cutting, grinding, sanding or machining.

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	Liquid
Specific Physical Form:	Viscous Liquid
Color	Colorless
Odor	Mild Acrylic
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*Not Applicable*
Boiling point/Initial boiling point/Boiling range	>=98.9 ºC [@ 101,325 Pa]
Flash Point	96.7 ºC [*Test Method:*Closed Cup] [*Details:*SPECIFIC METHOD: SETAFLASH ASTM D-3278-96]
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 [@ 20 ºC] [*Details:*MITS data]
Vapor Density and/or Relative Vapor Density	*No Data Available*
Density	1.063 g/ml [@ 20 ºC]
Relative Density	1.063 [*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/Kinematic Viscosity	25,000 - 35,000 mPa-s
Volatile Organic Compounds	0 g/l
Percent volatile	0 % [*Test Method:*ACS METHOD]
VOC Less H2O & Exempt Solvents	0 g/l [*Test Method:*tested per EPA method 24]
Molecular weight	*No Data Available*

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

Heat

10.5. Incompatible materials
Strong acids

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.

Allergic Respiratory Reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest.

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

Eye Contact:
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:
Harmful if swallowed. Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Additional Health Effects:

Genotoxicity:
Genotoxicity and Mutagenicity: May interact with genetic material and possibly alter gene expression.

Additional Information:
Persons previously sensitized to amines may develop a cross-sensitization reaction to certain other amines.

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	Ingestion		No data available; calculated ATE >300 - =2,000 mg/kg
Polyfunctional Aziridine	Dermal	Rabbit	LD50 > 3,000 mg/kg
Polyfunctional Aziridine	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.252 mg/l
Polyfunctional Aziridine	Ingestion	Rat	LD50 3,038 mg/kg
Amine Borane Complex	Ingestion	Rat	LD50 693 mg/kg
Amorphous Silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Amorphous Silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Amorphous Silica	Ingestion	Rat	LD50 > 5,110 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Polyfunctional Aziridine	Rabbit	Mild irritant
Amine Borane Complex	Rabbit	No significant irritation
Amorphous Silica	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Polyfunctional Aziridine	Rabbit	Corrosive
Amine Borane Complex	Professional judgement	Severe irritant
Amorphous Silica	Rabbit	No significant irritation

Sensitization:

Skin Sensitization

Name	Species	Value
Polyfunctional Aziridine	Human and animal	Sensitizing
Amine Borane Complex	Guinea pig	Sensitizing
Amorphous Silica	Human and animal	Not classified

Respiratory Sensitization

Name	Species	Value
Polyfunctional Aziridine	Human	Sensitizing

Germ Cell Mutagenicity

Name	Route	Value
Polyfunctional Aziridine	In vivo	Mutagenic
Amine Borane Complex	In Vitro	Not mutagenic
Amorphous Silica	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Amorphous Silica	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
Amorphous Silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Amorphous Silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Amorphous Silica	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
Polyfunctional Aziridine	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	4 hours

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Amorphous Silica	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure

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
Synthetic Rubber Oligomer	Trade Secret	N/A	Data not available or insufficient for	N/A	N/A	N/A

			classification			
Polyfunctional Aziridine	64265-57-2	Algae or other aquatic plants	Experimental	72 hours	EC50	3.8 mg/l
Polyfunctional Aziridine	64265-57-2	Fish	Experimental	96 hours	LC50	2.35 mg/l
Polyfunctional Aziridine	64265-57-2	Invertebrate	Experimental	48 hours	EC50	6.96 mg/l
Amine Borane Complex	223674-50-8	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Amorphous Silica	67762-90-7	N/A	Data not available or insufficient for classification	N/A	N/A	N/A

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Synthetic Rubber Oligomer	Trade Secret	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Polyfunctional Aziridine	64265-57-2	Experimental Biodegradation	28 days	Carbon dioxide evolution	<60 %CO2 evolution/THCO2 evolution	OECD 301B - Mod. Sturm or CO2
Amine Borane Complex	223674-50-8	Experimental Biodegradation	28 days	Carbon dioxide evolution	44 %CO2 evolution/THCO2 evolution	EC C.4.C. CO2 Evolution Test
Amorphous Silica	67762-90-7	Data not availbl-insufficient	N/A	N/A	N/A	N/A

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Synthetic Rubber Oligomer	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Polyfunctional Aziridine	64265-57-2	Modeled Bioconcentration		Log of Octanol/H2O part. coeff	0.5	ACD/Labs ChemSketch™
Amine Borane Complex	223674-50-8	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	>5.99	EC A.8 Partition Coefficient
Amorphous Silica	67762-90-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

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

Not hazardous for transportation.

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:
None assigned.

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:
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. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC 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

Safety Data Sheet

Document Group:	31-9758-9	**Version Number:**	3.00
Issue Date:	07/03/2023	**Supercedes Date:**	22/12/2019

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(TM) Scotch-Weld(TM) Structural Plastic Adhesive DP8010 Blue and Structural Plastic Adhesive 8010 Blue, Part B

Product Identification Numbers
62-2863-8530-7

1.2. Recommended use and restrictions on use

Recommended use
Structural adhesive, Industrial use

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 Sensitizer: Category 1.
Reproductive Toxicity: Category 1B.
Chronic Aquatic Toxicity: Category 3.

2.2. Label elements
Signal word
Danger

Symbols
Corrosion |Exclamation mark |Health Hazard |

Pictograms

Hazard Statements:

H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H360	May damage fertility or the unborn child.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention:

P201	Obtain special instructions before use.
P280B	Wear protective gloves and eye/face protection.
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.
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
Tetrahydrofurfuryl Methacrylate	2455-24-5	30 - 60
Acrylate Polymer	Trade Secret	10 - 30
2-Ethylhexyl Methacrylate	688-84-6	10 - 24
Impact Modifier	20882-04-6	1 - 9
Dibutyl Itaconate	2155-60-4	0.1 - 5
Glass Microspheres	Trade Secret	0.1 - 5
Copper Naphthenates	1338-02-9	< 1
Succinic Anhydride	108-30-5	< 0.6
Tetrahydrofurfuryl Alcohol	97-99-4	< 0.25
Methyl Methacrylate	80-62-6	< 0.2
Styrene Monomer	100-42-5	< 0.2
Maleic Anhydride	108-31-6	< 0.002

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:
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

Allergic respiratory reaction (difficulty breathing, wheezing, cough, and tightness of chest). Allergic skin reaction (redness, swelling, blistering, and itching). Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of vision).

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
None inherent in this product.

Hazardous Decomposition or By-Products

Substance	Condition
Hydrocarbons	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Cyanide	During Combustion
Oxides of Nitrogen	During Combustion

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
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 handle until all safety precautions have been read and understood. Do not breathe 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. Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities
Store away from heat. Store away from acids.

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
Styrene Monomer	100-42-5	ACGIH	TWA:10 ppm;STEL:20 ppm	A3: Confirmed animal carcin., Ototoxicant
Styrene Monomer	100-42-5	Malaysia OELs	TWA(8 hours):85.2 mg/m3(20 ppm)	SKIN
Maleic Anhydride	108-31-6	ACGIH	TWA(inhalable fraction and vapor):0.01 mg/m3	A4: Not class. as human carcin, Dermal/Respiratory Sensitizer
Maleic Anhydride	108-31-6	Malaysia OELs	TWA(8 hours):1 mg/m3(0.25 ppm)	
COPPER COMPOUNDS	1338-02-9	ACGIH	TWA(as Cu, fume):0.2 mg/m3;TWA(as Cu dust or mist):1 mg/m3	
Methyl Methacrylate	80-62-6	ACGIH	TWA:50 ppm;STEL:100 ppm	A4: Not class. as human carcin, Dermal Sensitizer
Methyl Methacrylate	80-62-6	Malaysia OELs	TWA(8 hours):410 mg/m3(100 ppm)	

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
Provide appropriate local exhaust ventilation for cutting, grinding, sanding or machining. 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

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

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	Blue-Green
Odor	Mild Acrylic
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*Not Applicable*
Boiling point/Initial boiling point/Boiling range	*No Data Available*
Flash Point	106.1 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	*No Data Available*

Vapor Density and/or Relative Vapor Density	*No Data Available*
Density	0.95 - 1.05 g/ml
Relative Density	0.95 - 1.05 [*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/Kinematic Viscosity	*No Data Available*
Volatile Organic Compounds	0.6 % weight [*Details:*when used as intended with Part A]
Percent volatile	*No Data Available*
VOC Less H2O & Exempt Solvents	5.5 g/l [*Details:*when used as intended with Part A]
Molecular weight	*No Data Available*

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
Heat
Sparks and/or flames

10.5. Incompatible materials
Strong acids

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.

Allergic Respiratory Reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest.

May cause additional health effects (see below).

Skin Contact:
Contact with the skin during product use is not expected to result in significant irritation. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

May cause additional health effects (see below).

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.

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.

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

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
Tetrahydrofurfuryl Methacrylate	Ingestion	Rat	LD50 4,000 mg/kg
Tetrahydrofurfuryl Methacrylate	Dermal	similar health hazards	LD50 estimated to be 2,000 - 5,000 mg/kg
2-Ethylhexyl Methacrylate	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
2-Ethylhexyl Methacrylate	Ingestion	Rat	LD50 > 2,000 mg/kg
Impact Modifier	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
Impact Modifier	Ingestion	Rat	LD50 > 2,000 mg/kg
Copper Naphthenates	Dermal	similar compounds	LD50 > 2,000 mg/kg
Copper Naphthenates	Ingestion	similar compounds	LD50 >300, < 2,000 mg/kg
Succinic Anhydride	Dermal	Rat	LD50 > 2,000 mg/kg

Succinic Anhydride	Ingestion	Rat	LD50 1,510 mg/kg
Tetrahydrofurfuryl Alcohol	Dermal	Professional judgement	LD50 estimated to be 2,000 - 5,000 mg/kg
Tetrahydrofurfuryl Alcohol	Inhalation-Vapor (4 hours)	Rat	LC50 > 3.1 mg/l
Tetrahydrofurfuryl Alcohol	Ingestion	Rat	LD50 > 2,000 mg/kg
Methyl Methacrylate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Methyl Methacrylate	Inhalation-Vapor (4 hours)	Rat	LC50 29 mg/l
Methyl Methacrylate	Ingestion	Rat	LD50 7,900 mg/kg
Styrene Monomer	Dermal	Rat	LD50 > 2,000 mg/kg
Styrene Monomer	Inhalation-Vapor (4 hours)	Rat	LC50 11.8 mg/l
Styrene Monomer	Ingestion	Rat	LD50 5,000 mg/kg
Maleic Anhydride	Dermal	Rabbit	LD50 2,620 mg/kg
Maleic Anhydride	Ingestion	Rat	LD50 1,030 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Tetrahydrofurfuryl Methacrylate	Rabbit	No significant irritation
2-Ethylhexyl Methacrylate	Rabbit	Minimal irritation
Impact Modifier	Professional judgement	Mild irritant
Copper Naphthenates	Rabbit	No significant irritation
Succinic Anhydride	In vitro data	Corrosive
Tetrahydrofurfuryl Alcohol	Rabbit	No significant irritation
Methyl Methacrylate	Human and animal	Mild irritant
Styrene Monomer	Professional judgement	Mild irritant
Maleic Anhydride	Human and animal	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Tetrahydrofurfuryl Methacrylate	Rabbit	No significant irritation
2-Ethylhexyl Methacrylate	Rabbit	No significant irritation
Impact Modifier	In vitro data	Corrosive
Copper Naphthenates	In vitro data	No significant irritation
Succinic Anhydride	similar health hazards	Corrosive
Tetrahydrofurfuryl Alcohol	Rabbit	Severe irritant
Methyl Methacrylate	Rabbit	Moderate irritant
Styrene Monomer	Professional judgement	Moderate irritant

Maleic Anhydride	Rabbit	Corrosive

Sensitization:

Skin Sensitization

Name	Species	Value
Tetrahydrofurfuryl Methacrylate	In vitro data	Sensitizing
2-Ethylhexyl Methacrylate	Guinea pig	Sensitizing
Impact Modifier	Professional judgement	Sensitizing
Copper Naphthenates	Guinea pig	Not classified
Succinic Anhydride	Mouse	Sensitizing
Tetrahydrofurfuryl Alcohol	Mouse	Not classified
Methyl Methacrylate	Human and animal	Sensitizing
Styrene Monomer	Guinea pig	Not classified
Maleic Anhydride	Multiple animal species	Sensitizing

Respiratory Sensitization

Name	Species	Value
Succinic Anhydride	similar compounds	Sensitizing
Methyl Methacrylate	Human	Not classified
Maleic Anhydride	Human	Sensitizing

Germ Cell Mutagenicity

Name	Route	Value
Tetrahydrofurfuryl Methacrylate	In Vitro	Not mutagenic
2-Ethylhexyl Methacrylate	In Vitro	Not mutagenic
Impact Modifier	In Vitro	Not mutagenic
Succinic Anhydride	In Vitro	Not mutagenic
Tetrahydrofurfuryl Alcohol	In Vitro	Not mutagenic
Methyl Methacrylate	In vivo	Not mutagenic
Methyl Methacrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Styrene Monomer	In Vitro	Some positive data exist, but the data are not sufficient for classification
Styrene Monomer	In vivo	Some positive data exist, but the data are not sufficient for classification
Maleic Anhydride	In vivo	Not mutagenic
Maleic Anhydride	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Succinic Anhydride	Ingestion	Multiple animal species	Not carcinogenic
Methyl Methacrylate	Ingestion	Rat	Not carcinogenic
Methyl Methacrylate	Inhalation	Human	Not carcinogenic

		and animal	
Styrene Monomer	Ingestion	Mouse	Carcinogenic
Styrene Monomer	Inhalation	Human and animal	Carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Tetrahydrofurfuryl Methacrylate	Ingestion	Not classified for male reproduction	Rat	NOAEL 300 mg/kg/day	29 days
Tetrahydrofurfuryl Methacrylate	Ingestion	Toxic to female reproduction	Rat	NOAEL 120 mg/kg/day	premating into lactation
Tetrahydrofurfuryl Methacrylate	Ingestion	Toxic to development	Rat	NOAEL 120 mg/kg/day	premating into lactation
2-Ethylhexyl Methacrylate	Ingestion	Not classified for male reproduction		NOAEL 1,000 mg/kg/day	49 days
2-Ethylhexyl Methacrylate	Ingestion	Not classified for female reproduction		NOAEL 300 mg/kg/day	premating into lactation
2-Ethylhexyl Methacrylate	Ingestion	Not classified for development		NOAEL 300 mg/kg/day	during gestation
Tetrahydrofurfuryl Alcohol	Ingestion	Toxic to female reproduction	Rat	NOAEL 50 mg/kg/day	premating into lactation
Tetrahydrofurfuryl Alcohol	Dermal	Toxic to male reproduction	Rat	NOAEL 100 mg/kg/day	13 weeks
Tetrahydrofurfuryl Alcohol	Ingestion	Toxic to male reproduction	Rat	NOAEL 150 mg/kg/day	47 days
Tetrahydrofurfuryl Alcohol	Inhalation	Toxic to male reproduction	Rat	NOAEL 0.6 mg/l	90 days
Tetrahydrofurfuryl Alcohol	Ingestion	Toxic to development	Rat	NOAEL 50 mg/kg/day	premating into lactation
Methyl Methacrylate	Inhalation	Not classified for male reproduction	Mouse	NOAEL 36.9 mg/l	
Methyl Methacrylate	Inhalation	Not classified for development	Rat	NOAEL 8.3 mg/l	during organogenesis
Styrene Monomer	Ingestion	Not classified for female reproduction	Rat	NOAEL 21 mg/kg/day	3 generation
Styrene Monomer	Inhalation	Not classified for female reproduction	Rat	NOAEL 2.1 mg/l	2 generation
Styrene Monomer	Inhalation	Not classified for male reproduction	Rat	NOAEL 2.1 mg/l	2 generation
Styrene Monomer	Ingestion	Not classified for male reproduction	Rat	NOAEL 400 mg/kg/day	60 days
Styrene Monomer	Ingestion	Not classified for development	Rat	NOAEL 400 mg/kg/day	during gestation
Styrene Monomer	Inhalation	Not classified for development	Multiple animal species	NOAEL 2.1 mg/l	during gestation
Maleic Anhydride	Ingestion	Not classified for female reproduction	Rat	NOAEL 55 mg/kg/day	2 generation
Maleic Anhydride	Ingestion	Not classified for male reproduction	Rat	NOAEL 55 mg/kg/day	2 generation
Maleic Anhydride	Ingestion	Not classified for development	Rat	NOAEL 140 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
Impact Modifier	Inhalation	respiratory irritation	Some positive data exist, but the	similar	NOAEL Not	

			data are not sufficient for classification	health hazards	available	
Succinic Anhydride	Inhalation	respiratory irritation	May cause respiratory irritation	similar health hazards	NOAEL Not available	
Tetrahydrofurfuryl Alcohol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Methyl Methacrylate	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	occupational exposure
Styrene Monomer	Inhalation	auditory system	Causes damage to organs	Multiple animal species	LOAEL 4.3 mg/l	not available
Styrene Monomer	Inhalation	liver	Causes damage to organs	Mouse	LOAEL 2.1 mg/l	not available
Styrene Monomer	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	occupational exposure
Styrene Monomer	Inhalation	respiratory irritation	May cause respiratory irritation	Human and animal	NOAEL Not available	
Styrene Monomer	Inhalation	endocrine system	Not classified	Rat	NOAEL Not available	not available
Styrene Monomer	Inhalation	kidney and/or bladder	Not classified	Multiple animal species	NOAEL 2.1 mg/l	not available
Maleic Anhydride	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Tetrahydrofurfuryl Methacrylate	Ingestion	hematopoietic system | nervous system	Not classified	Rat	NOAEL 300 mg/kg/day	29 days
2-Ethylhexyl Methacrylate	Ingestion	heart | endocrine system | hematopoietic system | liver | immune system | nervous system | eyes | kidney and/or bladder	Not classified	Rat	NOAEL 360 mg/kg/day	90 days
Succinic Anhydride	Ingestion	heart | skin | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | nervous system | kidney and/or bladder | respiratory system	Not classified	Mouse	NOAEL 300 mg/kg/day	13 weeks
Tetrahydrofurfuryl Alcohol	Inhalation	nervous system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.2 mg/l	90 days
Tetrahydrofurfuryl Alcohol	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 0.6 mg/l	90 days
Tetrahydrofurfuryl Alcohol	Inhalation	eyes	Not classified	Rat	NOAEL 2.1 mg/l	90 days
Tetrahydrofurfuryl Alcohol	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 69 mg/kg/day	91 days
Tetrahydrofurfuryl Alcohol	Ingestion	immune system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 150 mg/kg/day	28 days
Tetrahydrofurfuryl	Ingestion	endocrine system |	Not classified	Rat	NOAEL 600	28 days

Alcohol		kidney and/or bladder			mg/kg/day	
Tetrahydrofurfuryl Alcohol	Ingestion	liver | eyes	Not classified	Rat	NOAEL 781 mg/kg/day	91 days
Tetrahydrofurfuryl Alcohol	Ingestion	heart | nervous system	Not classified	Rat	NOAEL 600 mg/kg/day	28 days
Methyl Methacrylate	Dermal	peripheral nervous system	Not classified	Human	NOAEL Not available	occupational exposure
Methyl Methacrylate	Inhalation	olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Methyl Methacrylate	Inhalation	kidney and/or bladder	Not classified	Multiple animal species	NOAEL Not available	14 weeks
Methyl Methacrylate	Inhalation	liver	Not classified	Mouse	NOAEL 12.3 mg/l	14 weeks
Methyl Methacrylate	Inhalation	respiratory system	Not classified	Human	NOAEL Not available	occupational exposure
Styrene Monomer	Inhalation	auditory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL not available	occupational exposure
Styrene Monomer	Inhalation	eyes	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Styrene Monomer	Inhalation	liver	May cause damage to organs though prolonged or repeated exposure	Mouse	LOAEL 0.85 mg/l	13 weeks
Styrene Monomer	Inhalation	nervous system	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	LOAEL 1.1 mg/l	not available
Styrene Monomer	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 0.85 mg/l	7 days
Styrene Monomer	Inhalation	endocrine system	Not classified	Rat	NOAEL 0.6 mg/l	10 days
Styrene Monomer	Inhalation	respiratory system	Not classified	Multiple animal species	LOAEL 0.09 mg/l	not available
Styrene Monomer	Inhalation	heart | gastrointestinal tract | bone, teeth, nails, and/or hair | muscles | kidney and/or bladder	Not classified	Multiple animal species	NOAEL 4.3 mg/l	2 years
Styrene Monomer	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 500 mg/kg/day	8 weeks
Styrene Monomer	Ingestion	immune system	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL Not available	not available
Styrene Monomer	Ingestion	liver | kidney and/or bladder	Not classified	Rat	NOAEL 677 mg/kg/day	6 months
Styrene Monomer	Ingestion	hematopoietic system	Not classified	Dog	NOAEL 600 mg/kg/day	470 days
Styrene Monomer	Ingestion	heart | respiratory system	Not classified	Rat	NOAEL 35 mg/kg/day	105 weeks
Maleic Anhydride	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.0011 mg/l	6 months
Maleic Anhydride	Inhalation	endocrine system | hematopoietic system | nervous system | kidney and/or bladder | heart | liver | eyes	Not classified	Rat	NOAEL 0.0098 mg/l	6 months
Maleic Anhydride	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 55 mg/kg/day	80 days
Maleic Anhydride	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 250 mg/kg/day	183 days
Maleic Anhydride	Ingestion	heart | nervous system	Not classified	Rat	NOAEL 600 mg/kg/day	183 days

Maleic Anhydride	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 150 mg/kg/day	80 days
Maleic Anhydride	Ingestion	hematopoietic system	Not classified	Dog	NOAEL 60 mg/kg/day	90 days
Maleic Anhydride	Ingestion	skin | endocrine system | immune system | eyes | respiratory system	Not classified	Rat	NOAEL 150 mg/kg/day	80 days

Aspiration Hazard

Name	Value
Styrene Monomer	Aspiration hazard

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 3: Harmful to aquatic life with long lasting effects

No product test data available

Material	Cas #	Organism	Type	Exposure	Test Endpoint	Test Result
Tetrahydrofurfuryl Methacrylate	2455-24-5	Fathead Minnow	Experimental	96 hours	LC50	34.7 mg/l
Tetrahydrofurfuryl Methacrylate	2455-24-5	Green algae	Experimental	72 hours	ErC50	>100 mg/l
Tetrahydrofurfuryl Methacrylate	2455-24-5	Green algae	Experimental	72 hours	ErC10	100 mg/l
Tetrahydrofurfuryl Methacrylate	2455-24-5	Water flea	Experimental	21 days	NOEC	37.2 mg/l
Acrylate Polymer	Trade Secret	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
2-Ethylhexyl Methacrylate	688-84-6	Green algae	Experimental	72 hours	EC50	5.3 mg/l
2-Ethylhexyl Methacrylate	688-84-6	Medaka	Experimental	96 hours	LC50	2.8 mg/l
2-Ethylhexyl Methacrylate	688-84-6	Water flea	Experimental	48 hours	EC50	4.6 mg/l
2-Ethylhexyl Methacrylate	688-84-6	Green algae	Experimental	72 hours	NOEC	0.81 mg/l
2-Ethylhexyl Methacrylate	688-84-6	Water flea	Experimental	21 days	NOEC	0.105 mg/l
Impact Modifier	20882-04-6	Green algae	Experimental	72 hours	ErC50	>312 mg/l
Impact Modifier	20882-04-6	Water flea	Experimental	48 hours	EC50	>515.4 mg/l
Impact Modifier	20882-04-6	Green algae	Experimental	72 hours	ErC10	>=161 mg/l
Dibutyl Itaconate	2155-60-4	N/A	Data not available or insufficient for	N/A	N/A	N/A

			classification			
Copper Naphthenates	1338-02-9	Green algae	Estimated	72 hours	EC50	0.629 mg/l
Copper Naphthenates	1338-02-9	Water flea	Estimated	48 hours	EC50	0.0756 mg/l
Copper Naphthenates	1338-02-9	Zebra Fish	Estimated	96 hours	LC50	0.0702 mg/l
Copper Naphthenates	1338-02-9	Algae or other aquatic plants	Estimated	N/A	NOEC	0.132 mg/l
Copper Naphthenates	1338-02-9	Fathead Minnow	Estimated	32 days	EC10	0.0354 mg/l
Copper Naphthenates	1338-02-9	Water flea	Estimated	21 days	NOEC	0.0756 mg/l
Succinic Anhydride	108-30-5	Green algae	Analogous Compound	72 hours	ErC50	>100 mg/l
Succinic Anhydride	108-30-5	Water flea	Analogous Compound	48 hours	EC50	>100 mg/l
Succinic Anhydride	108-30-5	Zebra Fish	Analogous Compound	96 hours	LC50	>100 mg/l
Succinic Anhydride	108-30-5	Green algae	Analogous Compound	72 hours	NOEC	100 mg/l
Tetrahydrofurfuryl Alcohol	97-99-4	Green algae	Experimental	72 hours	EC50	>100 mg/l
Tetrahydrofurfuryl Alcohol	97-99-4	Medaka	Experimental	96 hours	LC50	>100 mg/l
Tetrahydrofurfuryl Alcohol	97-99-4	Water flea	Experimental	48 hours	EC50	>100 mg/l
Tetrahydrofurfuryl Alcohol	97-99-4	Green algae	Experimental	72 hours	NOEC	>100 mg/l
Tetrahydrofurfuryl Alcohol	97-99-4	Water flea	Experimental	21 days	NOEC	>100 mg/l
Methyl Methacrylate	80-62-6	Green algae	Experimental	72 hours	EC50	>110 mg/l
Methyl Methacrylate	80-62-6	Rainbow Trout	Experimental	96 hours	LC50	>79 mg/l
Methyl Methacrylate	80-62-6	Water flea	Experimental	48 hours	EC50	69 mg/l
Methyl Methacrylate	80-62-6	Green algae	Experimental	72 hours	NOEC	110 mg/l
Methyl Methacrylate	80-62-6	Water flea	Experimental	21 days	NOEC	37 mg/l
Methyl Methacrylate	80-62-6	Activated sludge	Experimental	30 minutes	EC20	150 mg/l
Methyl Methacrylate	80-62-6	Soil microbes	Experimental	28 days	NOEC	>1,000 mg/kg (Dry Weight)
Styrene Monomer	100-42-5	Activated sludge	Experimental	30 minutes	EC50	500 mg/l
Styrene Monomer	100-42-5	Fathead Minnow	Experimental	96 hours	LC50	4.02 mg/l
Styrene Monomer	100-42-5	Green algae	Experimental	72 hours	EC50	4.9 mg/l
Styrene Monomer	100-42-5	Water flea	Experimental	48 hours	EC50	4.7 mg/l
Styrene Monomer	100-42-5	Green algae	Experimental	96 hours	EC10	0.28 mg/l
Styrene Monomer	100-42-5	Water flea	Experimental	21 days	NOEC	1.01 mg/l
Maleic Anhydride	108-31-6	Bacteria	Experimental	18 hours	EC10	44.6 mg/l
Maleic Anhydride	108-31-6	Rainbow Trout	Experimental	96 hours	LC50	75 mg/l
Maleic Anhydride	108-31-6	Green algae	Hydrolysis Product	72 hours	ErC50	74.4 mg/l
Maleic Anhydride	108-31-6	Water flea	Hydrolysis Product	48 hours	EC50	93.8 mg/l
Maleic Anhydride	108-31-6	Water flea	Experimental	21 days	NOEC	10 mg/l
Maleic Anhydride	108-31-6	Green algae	Hydrolysis Product	72 hours	ErC10	11.8 mg/l

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Tetrahydrofurfuryl	2455-24-5	Experimental	28 days	Biological Oxygen	75 %BOD/ThOD	OECD 301F - Manometric

Methacrylate		Biodegradation		Demand	(< 10 day window)	Respiro
Acrylate Polymer	Trade Secret	Data not availbl-insufficient	N/A	N/A	N/A	N/A
2-Ethylhexyl Methacrylate	688-84-6	Experimental Biodegradation	28 days	Biological Oxygen Demand	88 %BOD/ThOD	OECD 301C - MITI (I)
Impact Modifier	20882-04-6	Experimental Biodegradation	28 days	Biological Oxygen Demand	≥80 %BOD/ThOD (< 10 day window)	OECD 301F - Manometric Respiro
Impact Modifier	20882-04-6	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	>1 years (t 1/2)	OECD 111 Hydrolysis func of pH
Dibutyl Itaconate	2155-60-4	Estimated Biodegradation	28 days	Biological Oxygen Demand	72 %BOD/ThOD	OECD 301F - Manometric Respiro
Copper Naphthenates	1338-02-9	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Succinic Anhydride	108-30-5	Hydrolysis product Biodegradation	28 days	Dissolv. Organic Carbon Deplet	96.55 %removal of DOC	OECD 301E - Modif. OECD Screen
Succinic Anhydride	108-30-5	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	4.3 minutes (t 1/2)	
Tetrahydrofurfuryl Alcohol	97-99-4	Experimental Biodegradation	28 days	Biological Oxygen Demand	92 %BOD/ThOD	OECD 301C - MITI (I)
Tetrahydrofurfuryl Alcohol	97-99-4	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	>1 years (t 1/2)	OECD 111 Hydrolysis func of pH
Methyl Methacrylate	80-62-6	Experimental Biodegradation	14 days	Biological Oxygen Demand	94 %BOD/ThOD	OECD 301C - MITI (I)
Styrene Monomer	100-42-5	Experimental Biodegradation	28 days	Biological Oxygen Demand	70.9 %BOD/ThOD	
Styrene Monomer	100-42-5	Experimental Photolysis		Photolytic half-life (in air)	6.64 hours (t 1/2)	
Maleic Anhydride	108-31-6	Hydrolysis product Biodegradation	25 days	Carbon dioxide evolution	>90 %CO2 evolution/THCO2 evolution	OECD 301B - Mod. Sturm or CO2
Maleic Anhydride	108-31-6	Experimental Hydrolysis		Hydrolytic half-life	0.37 minutes (t 1/2)	

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Tetrahydrofurfuryl Methacrylate	2455-24-5	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.76	OECD 117 log Kow HPLC method
Acrylate Polymer	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-Ethylhexyl Methacrylate	688-84-6	Experimental Bioconcentration	96 hours	Bioaccumulation Factor	37	OECD305-Bioconcentration
Impact Modifier	20882-04-6	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	0.782	EC A.8 Partition Coefficient
Dibutyl Itaconate	2155-60-4	Estimated Bioconcentration		Bioaccumulation Factor	5.7	
Copper Naphthenates	1338-02-9	Estimated BCF - Fish	42 days	Bioaccumulation Factor	≤27	OECD305-Bioconcentration
Succinic Anhydride	108-30-5	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.44	OECD 117 log Kow HPLC method
Tetrahydrofurfuryl Alcohol	97-99-4	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	-0.11	OECD 107 log Kow shke flsk mtd
Methyl Methacrylate	80-62-6	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.38	OECD 107 log Kow shke flsk mtd
Styrene Monomer	100-42-5	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.96	
Maleic Anhydride	108-31-6	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	-2.61	OECD 107 log Kow shke flsk mtd

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

Not hazardous for transportation.

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:
None assigned.

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:
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 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 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