

# **Safety Data Sheet**

Copyright, 2023, 3M Company.

All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that: (1) the information is copied in full with no changes unless prior written agreement is obtained from 3M, and (2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

 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 |





**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.

#### **Eve 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**

<u>Substance</u>	<u>Condition</u>
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	SKIN
			ppm)	
Maleic Anhydride	108-31-6	ACGIH	TWA(inhalable fraction and	A4: Not class. as human
			vapor):0.01 mg/m3	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	
рН	Not Applicable	
Melting point/Freezing point	Not Applicable	
Boiling point/Initial boiling point/Boiling range	No Data Available	
Flash Point	106.1 °C [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 [ <i>Ref Std:</i> 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** 

None known

Condition

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).

#### **Eve 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	Professio nal judgeme nt	LD50 estimated to be > 5,000 mg/kg
2-Ethylhexyl Methacrylate	Ingestion	Rat	LD50 > 2,000 mg/kg
Impact Modifier	Dermal	Professio nal judgeme nt	LD50 estimated to be > 5,000 mg/kg
Impact Modifier	Ingestion	Rat	LD50 > 2,000 mg/kg
Copper Naphthenates	Dermal	similar compoun ds	LD50 > 2,000 mg/kg
Copper Naphthenates	Ingestion	similar compoun ds	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	Professio	LD50 estimated to be 2,000 - 5,000 mg/kg
		nal	
		judgeme	
		nt	
Tetrahydrofurfuryl Alcohol	Inhalation-	Rat	LC50 > 3.1 mg/l
	Vapor (4		
	hours)		
Tetrahydrofurfuryl Alcohol	Ingestion	Rat	LD50 > 2,000 mg/kg
Methyl Methacrylate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Methyl Methacrylate	Inhalation-	Rat	LC50 29 mg/l
	Vapor (4		
	hours)		
Methyl Methacrylate	Ingestion	Rat	LD50 7,900 mg/kg
Styrene Monomer	Dermal	Rat	LD50 > 2,000 mg/kg
Styrene Monomer	Inhalation-	Rat	LC50 11.8 mg/l
	Vapor (4		
	hours)		
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	Professio	Mild irritant
1	nal	
	judgemen	
	t	
Copper Naphthenates	Rabbit	No significant irritation
Succinic Anhydride	In vitro	Corrosive
	data	
Tetrahydrofurfuryl Alcohol	Rabbit	No significant irritation
Methyl Methacrylate	Human	Mild irritant
	and	
	animal	
Styrene Monomer	Professio	Mild irritant
	nal	
	judgemen	
M1: 41 1:1	t	
Maleic Anhydride	Human	Corrosive
	and	
	animal	

Serious Eye Damage/Irritation

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

Maleic Anhydride	Rabbit	Corrosive

## **Sensitization:**

**Skin Sensitization** 

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

**Respiratory Sensitization** 

Name	Species	Value
Succinic Anhydride	similar compoun ds	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

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

\_\_\_\_

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

# **Reproductive Toxicity**

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Tetrahydrofurfuryl Methacrylate			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

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

D 11 C 1

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		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			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

Dagg. 12 of 1

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

## **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

		I	classification			
Copper	1338-02-9	Green algae	Estimated	72 hours	EC50	0.629 mg/l
Naphthenates	1330 02 9	Green uigue	Estimated	72 Hours	Leso	0.029 mg/1
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
Alcohol	97-99-4	Green algae	Experimental	72 hours	EC50	>100 mg/l
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		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	_	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