Safety Data Sheet

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

SECTION 1: Identification

1.1. Product identifier
3M(TM) Scotch-Weld(TM) Threadlocker TL62, Red

Product Identification Numbers

62-3495-1060-2	62-3495-1065-1	62-3495-3960-1	62-3495-5060-8	62-3495-8360-9
UU-0015-1097-1	UU-0015-5272-6			

1.2. Recommended use and restrictions on use

Recommended use
Adhesive

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

1.4. Emergency telephone number
+60 03-7884 2888

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Serious Eye Damage/Irritation: Category 2.
Skin Corrosion/Irritation: Category 2.
Skin Sensitizer: Category 1.
Carcinogenicity: Category 1B.
Specific Target Organ Toxicity (repeated exposure): Category 2.
Chronic Aquatic Toxicity: Category 2.

2.2. Label elements
Signal word
Danger

Symbols
Exclamation mark | Health Hazard | Environment |

Pictograms

Hazard Statements

H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H350	May cause cancer.
H373	May cause damage to organs through prolonged or repeated exposure: nervous system | respiratory system |
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements
General:

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

Prevention:

P201	Obtain special instructions before use.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P280B	Wear protective gloves and eye/face protection.
P281	Use personal protective equipment as required.
P273	Avoid release to the environment.

Response:

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

Storage:

P405	Store locked up.

Disposal:

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

2.3. Other hazards
None known

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
Polyethylene Glycol Dimethacrylate	25852-47-5	50 - 80
Polyester Resin (NJTS Reg. No. 04499600-7087)	Trade Secret	10 - 30
Hydroxypropyl Methacrylate	27813-02-1	1 - 10
Amorphous Silica	112945-52-5	1 - 5
Filler	Trade Secret	1 - 5
Saccharin	81-07-2	<= 2
Acrylic Acid	79-10-7	<= 1.5
Cumene Hydroperoxide	80-15-9	< 1.5
2,2'-(p-Tolylimino)diethanol	3077-12-1	< 1
Triethylene Glycol Dimethacrylate	109-16-0	< 1
Ethylene Glycol	107-21-1	<= 0.9
1-Acetyl-2-Phenylhydrazine	114-83-0	<= 0.5
2,6-di-tert-Butyl-p-cresol	128-37-0	<= 0.5
Methyl Methacrylate	80-62-6	<= 0.2
N,N-Dimethyl-p-Toluidine	99-97-8	<= 0.2

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. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

If Swallowed:
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed
See Section 11.1. Information on toxicological effects.

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

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
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

Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Oxides of Nitrogen	During Combustion
Oxides of Sulfur	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
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. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) 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 oxidizing agents.

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
Ethylene Glycol	107-21-1	ACGIH	TWA(Vapor fraction):25 ppm;STEL(Vapor fraction):50 ppm;STEL(Inhalable aerosol):10 mg/m3	A4: Not class. as human carcin
Ethylene Glycol	107-21-1	Malaysia OELs	CEIL(as aerosol):100	

			mg/m3(39.4 ppm)	
2,6-di-tert-Butyl-p-cresol	128-37-0	ACGIH	TWA(inhalable fraction and vapor):2 mg/m3	A4: Not class. as human carcin
2,6-di-tert-Butyl-p-cresol	128-37-0	Malaysia OELs	TWA(8 hours):10 mg/m3	
Acrylic Acid	79-10-7	ACGIH	TWA:2 ppm	A4: Not class. as human carcin, Danger of cutaneous absorption
Acrylic Acid	79-10-7	Malaysia OELs	TWA(8 hours):5.9 mg/m3(2 ppm)	SKIN
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
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Indirect Vented Goggles

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.
Gloves made from the following material(s) are recommended: Polymer laminate

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid

Specific Physical Form:	Thixotropic Liquid
Color	Red
Odor	Mild Odor
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*Not Applicable*
Boiling point/Initial boiling point/Boiling range	>=148.9 ºC [@ 101,324.72 Pa]
Flash Point	>=100 ºC [*Test Method:*Tagliabue Closed Cup]
Evaporation rate	Negligible
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*
Vapor Pressure	<=666.6 Pa
Vapor Density and/or Relative Vapor Density	1.01 [*Ref Std:*AIR=1]
Density	1.1 - 1.15 g/ml [@ 20 ºC]
Relative Density	1.1 - 1.15 [@ 20 ºC] [*Ref Std:*WATER=1]
Water solubility	Negligible
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	3,000 - 7,500 mPa-s [@ 20 ºC]
Volatile Organic Compounds	
Percent volatile	
VOC Less H2O & Exempt Solvents	< 5 g/l [*Test Method:*calculated SCAQMD rule 443.1]

Nanoparticles
This material contains nanoparticles.

SECTION 10: Stability and reactivity

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

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Heat
Light

10.5. Incompatible materials
Strong oxidizing agents

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.

May cause additional health effects (see below).

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

Eye Contact:
Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired 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:

Prolonged or repeated exposure may cause target organ effects:
Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate.

Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish colored skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.

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	Inhalation-Vapor(4 hr)		No data available; calculated ATE >50 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg

Polyethylene Glycol Dimethacrylate	Dermal	Rabbit	LD50 15,500 mg/kg
Polyethylene Glycol Dimethacrylate	Ingestion	Rat	LD50 9,400 mg/kg
Hydroxypropyl Methacrylate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Hydroxypropyl Methacrylate	Ingestion	Rat	LD50 > 2,000 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
Saccharin	Dermal		LD50 estimated to be > 5,000 mg/kg
Saccharin	Ingestion	Mouse	LD50 17,000 mg/kg
Acrylic Acid	Dermal	Rabbit	LD50 > 2,000 mg/kg
Acrylic Acid	Inhalation-Dust/Mist (4 hours)	Rat	LC50 3.8 mg/l
Acrylic Acid	Ingestion	Rat	LD50 1,250 mg/kg
Cumene Hydroperoxide	Dermal	Rat	LD50 500 mg/kg
Cumene Hydroperoxide	Inhalation-Vapor (4 hours)	Rat	LC50 1.4 mg/l
Cumene Hydroperoxide	Ingestion	Rat	LD50 382 mg/kg
Triethylene Glycol Dimethacrylate	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
Triethylene Glycol Dimethacrylate	Ingestion	Rat	LD50 10,837 mg/kg
Ethylene Glycol	Ingestion	Human	LD50 1,600 mg/kg
Ethylene Glycol	Inhalation-Dust/Mist (4 hours)	Other	LC50 estimated to be 5 - 12.5 mg/l
Ethylene Glycol	Dermal	Rabbit	9,530 mg/kg
2,6-di-tert-Butyl-p-cresol	Dermal	Rat	LD50 > 2,000 mg/kg
2,6-di-tert-Butyl-p-cresol	Ingestion	Rat	LD50 > 2,930 mg/kg
1-Acetyl-2-Phenylhydrazine	Dermal		LD50 estimated to be 200 - 1,000 mg/kg
1-Acetyl-2-Phenylhydrazine	Ingestion	Mouse	LD50 270 mg/kg
2,2'-(p-Tolylimino)diethanol	Dermal	Rabbit	LD50 > 2,000 mg/kg
2,2'-(p-Tolylimino)diethanol	Ingestion	Rat	LD50 959 mg/kg
N,N-Dimethyl-p-Toluidine	Dermal	Rabbit	LD50 > 2,000 mg/kg
N,N-Dimethyl-p-Toluidine	Inhalation-Dust/Mist (4 hours)	Rat	LC50 1.4 mg/l
N,N-Dimethyl-p-Toluidine	Ingestion	Rat	LD50 1,650 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

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Polyethylene Glycol Dimethacrylate	Rabbit	Mild irritant
Hydroxypropyl Methacrylate	Rabbit	Minimal irritation
Amorphous Silica	Rabbit	No significant irritation
Acrylic Acid	Rabbit	Corrosive
Cumene Hydroperoxide	Rabbit	Corrosive
Triethylene Glycol Dimethacrylate	Guinea pig	Mild irritant
Ethylene Glycol	Rabbit	Minimal irritation
2,6-di-tert-Butyl-p-cresol	Human and animal	Minimal irritation
2,2'-(p-Tolylimino)diethanol	Rabbit	No significant irritation
Methyl Methacrylate	Human	Mild irritant

	and animal	

Serious Eye Damage/Irritation

Name	Species	Value
Polyethylene Glycol Dimethacrylate	Rabbit	Moderate irritant
Hydroxypropyl Methacrylate	Rabbit	Moderate irritant
Amorphous Silica	Rabbit	No significant irritation
Acrylic Acid	Rabbit	Corrosive
Cumene Hydroperoxide	Rabbit	Corrosive
Triethylene Glycol Dimethacrylate	Professional judgement	Moderate irritant
Ethylene Glycol	Rabbit	Mild irritant
2,6-di-tert-Butyl-p-cresol	Rabbit	Mild irritant
2,2'-(p-Tolylimino)diethanol	Rabbit	Corrosive
Methyl Methacrylate	Rabbit	Moderate irritant

Sensitization:

Skin Sensitization

Name	Species	Value
Polyethylene Glycol Dimethacrylate	Guinea pig	Not classified
Hydroxypropyl Methacrylate	Human and animal	Sensitizing
Amorphous Silica	Human and animal	Not classified
Acrylic Acid	Guinea pig	Not classified
Triethylene Glycol Dimethacrylate	Human and animal	Sensitizing
Ethylene Glycol	Human	Not classified
2,6-di-tert-Butyl-p-cresol	Human	Not classified
2,2'-(p-Tolylimino)diethanol	Mouse	Sensitizing
Methyl Methacrylate	Human and animal	Sensitizing

Respiratory Sensitization

Name	Species	Value
Methyl Methacrylate	Human	Not classified

Germ Cell Mutagenicity

Name	Route	Value
Hydroxypropyl Methacrylate	In vivo	Not mutagenic
Hydroxypropyl Methacrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Amorphous Silica	In Vitro	Not mutagenic
Acrylic Acid	In vivo	Not mutagenic
Acrylic Acid	In Vitro	Some positive data exist, but the data are not sufficient for classification
Cumene Hydroperoxide	In vivo	Not mutagenic
Cumene Hydroperoxide	In Vitro	Some positive data exist, but the data are not sufficient for classification

Triethylene Glycol Dimethacrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Ethylene Glycol	In Vitro	Not mutagenic
Ethylene Glycol	In vivo	Not mutagenic
2,6-di-tert-Butyl-p-cresol	In Vitro	Not mutagenic
2,6-di-tert-Butyl-p-cresol	In vivo	Not mutagenic
2,2'-(p-Tolylimino)diethanol	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

Carcinogenicity

Name	Route	Species	Value
Amorphous Silica	Not Specified	Mouse	Some positive data exist, but the data are not sufficient for classification
Acrylic Acid	Ingestion	Rat	Not carcinogenic
Acrylic Acid	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Triethylene Glycol Dimethacrylate	Dermal	Mouse	Not carcinogenic
Ethylene Glycol	Ingestion	Multiple animal species	Not carcinogenic
2,6-di-tert-Butyl-p-cresol	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
N,N-Dimethyl-p-Toluidine	Ingestion	Multiple animal species	Carcinogenic
Methyl Methacrylate	Ingestion	Rat	Not carcinogenic
Methyl Methacrylate	Inhalation	Human and animal	Not carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Hydroxypropyl Methacrylate	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
Hydroxypropyl Methacrylate	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	49 days
Hydroxypropyl Methacrylate	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during gestation
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
Acrylic Acid	Ingestion	Not classified for female reproduction	Rat	NOAEL 460 mg/kg/day	2 generation
Acrylic Acid	Ingestion	Not classified for male reproduction	Rat	NOAEL 460 mg/kg/day	2 generation
Acrylic Acid	Inhalation	Not classified for development	Rat	NOAEL 1.1 mg/l	during organogenesis
Acrylic Acid	Ingestion	Not classified for development	Rat	NOAEL 53 mg/kg/day	2 generation
Triethylene Glycol Dimethacrylate	Ingestion	Not classified for female reproduction	Mouse	NOAEL 1 mg/kg/day	1 generation
Triethylene Glycol Dimethacrylate	Ingestion	Not classified for male reproduction	Mouse	NOAEL 1 mg/kg/day	1 generation

Triethylene Glycol Dimethacrylate	Ingestion	Not classified for development	Mouse	NOAEL 1 mg/kg/day	1 generation
Ethylene Glycol	Dermal	Not classified for development	Mouse	NOAEL 3,549 mg/kg/day	during organogenesis
Ethylene Glycol	Ingestion	Not classified for development	Mouse	LOAEL 750 mg/kg/day	during organogenesis
Ethylene Glycol	Inhalation	Not classified for development	Mouse	NOAEL 1,000 mg/kg/day	during organogenesis
2,6-di-tert-Butyl-p-cresol	Ingestion	Not classified for female reproduction	Rat	NOAEL 500 mg/kg/day	2 generation
2,6-di-tert-Butyl-p-cresol	Ingestion	Not classified for male reproduction	Rat	NOAEL 500 mg/kg/day	2 generation
2,6-di-tert-Butyl-p-cresol	Ingestion	Not classified for development	Rat	NOAEL 100 mg/kg/day	2 generation
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

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Polyethylene Glycol Dimethacrylate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Hydroxypropyl Methacrylate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Acrylic Acid	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Cumene Hydroperoxide	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	occupational exposure
Cumene Hydroperoxide	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	occupational exposure
Cumene Hydroperoxide	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
Ethylene Glycol	Ingestion	heart | nervous system | kidney and/or bladder | respiratory system	Causes damage to organs	Human	NOAEL Not available	poisoning and/or abuse
Ethylene Glycol	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
Ethylene Glycol	Ingestion	liver	Not classified	Human	NOAEL Not available	poisoning and/or abuse
2,2'-(p-Tolylimino)diethanol	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

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Hydroxypropyl Methacrylate	Inhalation	blood	Not classified	Rat	NOAEL 0.5 mg/l	21 days
Hydroxypropyl Methacrylate	Ingestion	hematopoietic system | heart | endocrine system | liver | immune	Not classified	Rat	NOAEL 1,000 mg/kg/day	41 days

		system | nervous system | kidney and/or bladder				
Amorphous Silica	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Cumene Hydroperoxide	Inhalation	nervous system | respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.2 mg/l	7 days
Cumene Hydroperoxide	Inhalation	heart | liver | kidney and/or bladder	Not classified	Rat	NOAEL 0.03 mg/l	90 days
Triethylene Glycol Dimethacrylate	Dermal	kidney and/or bladder | blood	Not classified	Mouse	NOAEL 833 mg/kg/day	78 weeks
Ethylene Glycol	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 200 mg/kg/day	2 years
Ethylene Glycol	Ingestion	vascular system	Not classified	Rat	NOAEL 200 mg/kg/day	2 years
Ethylene Glycol	Ingestion	heart | hematopoietic system | liver | immune system | muscles	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
Ethylene Glycol	Ingestion	respiratory system	Not classified	Mouse	NOAEL 12,000 mg/kg/day	2 years
Ethylene Glycol	Ingestion	skin | endocrine system | bone, teeth, nails, and/or hair | nervous system | eyes	Not classified	Multiple animal species	NOAEL 1,000 mg/kg/day	2 years
2,6-di-tert-Butyl-p-cresol	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 250 mg/kg/day	28 days
2,6-di-tert-Butyl-p-cresol	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 500 mg/kg/day	2 generation
2,6-di-tert-Butyl-p-cresol	Ingestion	blood	Not classified	Rat	LOAEL 420 mg/kg/day	40 days
2,6-di-tert-Butyl-p-cresol	Ingestion	endocrine system	Not classified	Rat	NOAEL 25 mg/kg/day	2 generation
2,6-di-tert-Butyl-p-cresol	Ingestion	heart	Not classified	Mouse	NOAEL 3,480 mg/kg/day	10 weeks
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

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
Polyethylene Glycol Dimethacrylate	25852-47-5		Data not available or insufficient for classification			
Hydroxypropyl Methacrylate	27813-02-1	Golden Orfe	Experimental	48 hours	Effect Concentration 50%	493 mg/l
Hydroxypropyl Methacrylate	27813-02-1	Green Algae	Experimental	72 hours	Effect Concentration 50%	>97.2 mg/l
Hydroxypropyl Methacrylate	27813-02-1	Water flea	Experimental	48 hours	Effect Concentration 50%	>143 mg/l
Hydroxypropyl Methacrylate	27813-02-1	Green Algae	Experimental	72 hours	No obs Effect Conc	97.2 mg/l
Hydroxypropyl Methacrylate	27813-02-1	Water flea	Experimental	21 days	No obs Effect Conc	45.2 mg/l
Amorphous Silica	112945-52-5	Green Algae	Experimental	72 hours	Effect Concentration 50%	>100 mg/l
Amorphous Silica	112945-52-5	Water flea	Experimental	24 hours	Effect Concentration 50%	>100 mg/l
Amorphous Silica	112945-52-5	Zebra Fish	Experimental	96 hours	Lethal Concentration 50%	>100 mg/l
Amorphous Silica	112945-52-5	Green Algae	Experimental	72 hours	No obs Effect Conc	60 mg/l
Saccharin	81-07-2	Guppy	Estimated	96 hours	Lethal Concentration 50%	>100 mg/l
Saccharin	81-07-2	Green algae	Experimental	72 hours	Effect Concentration 50%	>200 mg/l
Saccharin	81-07-2	Water flea	Experimental	48 hours	Effect Concentration 50%	>1,000 mg/l
Acrylic Acid	79-10-7	Green algae	Experimental	72 hours	Effect Concentration 50%	0.13 mg/l
Acrylic Acid	79-10-7	Rainbow Trout	Experimental	96 hours	Lethal	27 mg/l

					Concentration 50%	
Acrylic Acid	79-10-7	Water flea	Experimental	48 hours	Effect Concentration 50%	95 mg/l
Acrylic Acid	79-10-7	Green algae	Experimental	72 hours	Effect Concentration 10%	0.03 mg/l
Acrylic Acid	79-10-7	Water flea	Experimental	21 days	No obs Effect Conc	3.8 mg/l
Cumene Hydroperoxide	80-15-9	Green algae	Experimental	72 hours	Effect Concentration 50%	3.1 mg/l
Cumene Hydroperoxide	80-15-9	Rainbow Trout	Experimental	96 hours	Lethal Concentration 50%	3.9 mg/l
Cumene Hydroperoxide	80-15-9	Water flea	Experimental	48 hours	Effect Concentration 50%	18.84 mg/l
Cumene Hydroperoxide	80-15-9	Green algae	Experimental	72 hours	No obs Effect Conc	1 mg/l
2,2'-(p-Tolylimino)diethanol	3077-12-1	Common Carp	Estimated	96 hours	Lethal Concentration 50%	>100 mg/l
2,2'-(p-Tolylimino)diethanol	3077-12-1	Green Algae	Estimated	72 hours	Effect Concentration 50%	>100 mg/l
2,2'-(p-Tolylimino)diethanol	3077-12-1	Water flea	Estimated	48 hours	Effect Concentration 50%	48 mg/l
2,2'-(p-Tolylimino)diethanol	3077-12-1	Green Algae	Estimated	72 hours	No obs Effect Conc	100 mg/l
Triethylene Glycol Dimethacrylate	109-16-0	Green Algae	Experimental	72 hours	Effect Concentration 50%	>100 mg/l
Triethylene Glycol Dimethacrylate	109-16-0	Zebra Fish	Experimental	96 hours	Lethal Concentration 50%	16.4 mg/l
Triethylene Glycol Dimethacrylate	109-16-0	Green algae	Experimental	72 hours	No obs Effect Conc	18.6 mg/l
Triethylene Glycol Dimethacrylate	109-16-0	Water flea	Experimental	21 days	No obs Effect Conc	32 mg/l
Ethylene Glycol	107-21-1	Fathead Minnow	Experimental	96 hours	Lethal Concentration 50%	8,050 mg/l
Ethylene Glycol	107-21-1	Green algae	Experimental	72 hours	Effect Concentration 50%	>1,000 mg/l
Ethylene Glycol	107-21-1	Water flea	Experimental	48 hours	Effect Concentration 50%	>1,100 mg/l

Ethylene Glycol	107-21-1	Green Algae	Experimental	72 hours	No obs Effect Conc	1,000 mg/l
Ethylene Glycol	107-21-1	Water flea	Experimental	21 days	No obs Effect Conc	100 mg/l
1-Acetyl-2-Phenylhydrazine	114-83-0	Water flea	Estimated	24 hours	Effect Concentration 50%	2 mg/l
1-Acetyl-2-Phenylhydrazine	114-83-0	Zebra Fish	Estimated	96 hours	Lethal Concentration 50%	0.16 mg/l
1-Acetyl-2-Phenylhydrazine	114-83-0	Zebra Fish	Estimated	16 days	No obs Effect Conc	0.00049 mg/l
2,6-di-tert-Butyl-p-cresol	128-37-0	Green algae	Experimental	72 hours	Effect Concentration 50%	>0.4 mg/l
2,6-di-tert-Butyl-p-cresol	128-37-0	Water flea	Experimental	48 hours	Effect Concentration 50%	0.48 mg/l
2,6-di-tert-Butyl-p-cresol	128-37-0	Zebra Fish	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
2,6-di-tert-Butyl-p-cresol	128-37-0	Green algae	Experimental	72 hours	Effect Concentration 10%	0.4 mg/l
2,6-di-tert-Butyl-p-cresol	128-37-0	Ricefish	Experimental	42 days	No obs Effect Conc	0.053 mg/l
2,6-di-tert-Butyl-p-cresol	128-37-0	Water flea	Experimental	21 days	No obs Effect Conc	0.023 mg/l
Methyl Methacrylate	80-62-6	Green Algae	Experimental	72 hours	Effect Concentration 50%	>110 mg/l
Methyl Methacrylate	80-62-6	Rainbow Trout	Experimental	96 hours	Lethal Concentration 50%	>79 mg/l
Methyl Methacrylate	80-62-6	Water flea	Experimental	48 hours	Effect Concentration 50%	69 mg/l
Methyl Methacrylate	80-62-6	Green algae	Experimental	72 hours	No obs Effect Conc	110 mg/l
Methyl Methacrylate	80-62-6	Water flea	Experimental	21 days	No obs Effect Conc	37 mg/l
N,N-Dimethyl-p-Toluidine	99-97-8	Green Algae	Estimated	72 hours	Effect Concentration 50%	22 mg/l
N,N-Dimethyl-p-Toluidine	99-97-8	Water flea	Estimated	48 hours	Effect Concentration 50%	13.7 mg/l
N,N-Dimethyl-p-Toluidine	99-97-8	Fathead Minnow	Experimental	96 hours	Lethal Concentration 50%	46 mg/l

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol

Polyethylene Glycol Dimethacrylate	25852-47-5	Data not availbl-insufficient			N/A	
Hydroxypropyl Methacrylate	27813-02-1	Experimental Biodegradation	28 days	Biological Oxygen Demand	81 % BOD/ThBOD	OECD 301C - MITI (I)
Amorphous Silica	112945-52-5	Data not availbl-insufficient			N/A	
Saccharin	81-07-2	Estimated Biodegradation	28 days	Biological Oxygen Demand	32.09 % BOD/ThBOD	OECD 301F - Manometric Respiro
Acrylic Acid	79-10-7	Estimated Photolysis		Photolytic half-life (in air)	3.2 days (t 1/2)	Other methods
Acrylic Acid	79-10-7	Experimental Biodegradation	28 days	Biological Oxygen Demand	81 % BOD/ThBOD	OECD 301D - Closed Bottle Test
Cumene Hydroperoxide	80-15-9	Experimental Biodegradation	28 days	Biological Oxygen Demand	0 % BOD/ThBOD	OECD 301C - MITI (I)
2,2'-(p-Tolylimino)diethanol	3077-12-1	Estimated Biodegradation	29 days	Carbon dioxide evolution	1.5 %CO2 evolution/THCO2 evolution	OECD 301B - Mod. Sturm or CO2
Triethylene Glycol Dimethacrylate	109-16-0	Experimental Biodegradation	28 days	Carbon dioxide evolution	85 % weight	OECD 301B - Mod. Sturm or CO2
Ethylene Glycol	107-21-1	Experimental Biodegradation	14 days	Biological Oxygen Demand	90 % BOD/ThBOD	OECD 301C - MITI (I)
1-Acetyl-2-Phenylhydrazine	114-83-0	Estimated Biodegradation	28 days	Dissolv. Organic Carbon Deplet	97 % weight	OECD 301E - Modified OECD Scre
2,6-di-tert-Butyl-p-cresol	128-37-0	Data not availbl-insufficient			N/A	
Methyl Methacrylate	80-62-6	Experimental Biodegradation	14 days	Biological Oxygen Demand	94 % BOD/ThBOD	OECD 301C - MITI (I)
N,N-Dimethyl-p-Toluidine	99-97-8	Estimated Biodegradation	14 days	Biological Oxygen Demand	0 % BOD/ThBOD	OECD 301C - MITI (I)

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Polyethylene Glycol Dimethacrylate	25852-47-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Hydroxypropyl Methacrylate	27813-02-1	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	0.97	Other methods
Amorphous Silica	112945-52-5	Data not available or insufficient for	N/A	N/A	N/A	N/A

		classification				
Saccharin	81-07-2	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	0.3	Other methods
Acrylic Acid	79-10-7	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	0.46	Other methods
Cumene Hydroperoxide	80-15-9	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.82	Other methods
2,2'-(p-Tolylimino)diethanol	3077-12-1	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.0	Other methods
Triethylene Glycol Dimethacrylate	109-16-0	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.3	Other methods
Ethylene Glycol	107-21-1	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	-1.36	Other methods
1-Acetyl-2-Phenylhydrazine	114-83-0	Estimated BCF - Other		Bioaccumulation Factor	5	Est: Bioconcentration factor
2,6-di-tert-Butyl-p-cresol	128-37-0	Experimental BCF-Carp	56 days	Bioaccumulation Factor	1277	OECD 305E-Bioaccum Fl-thru fis
Methyl Methacrylate	80-62-6	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.38	Other methods
N,N-Dimethyl-p-Toluidine	99-97-8	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.73	Other methods

12.4. Mobility in soil
Please contact manufacturer for more details

12.5 Other adverse effects
No information available

SECTION 13: Disposal considerations

13.1. Disposal methods

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

SECTION 14: Transport Information

Marine Transport (IMDG)

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

Packing Group: None assigned.
Limited Quantity: None assigned.
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
Not restricted, as per IMDG code 2.10.2.7, marine pollutant exception.

Air Transport (IATA)

UN Number: None assigned.
Proper Shipping Name: None assigned.
Technical Name: None assigned.
Hazard Class/Division: None assigned.
Subsidiary Risk: None assigned.
Packing Group: None assigned.
Limited Quantity: None assigned.
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
Not restricted, as per Special Provision A197, environmentally hazardous substance exception.

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

SECTION 15: Regulatory information

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

Global inventory status
Contact 3M for more information. The components of this material are in compliance with the provisions of the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the new substance notification requirements of CEPA. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory. The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

SECTION 16: Other information

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications.

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