



## 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.

## IDENTIFICATION

### 1.1. Product identifier

3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Kit

#### Product Identification Numbers

60-4551-0956-5	62-3546-1430-7	62-3546-1435-6	62-3546-3530-2	62-3546-3830-6
FJ-490N-0400-0	FJ-9251-0561-3	FS-9100-2418-1	FS-9100-2877-8	FS-9100-2878-6
FS-9100-3850-4	FS-9100-4033-6	FS-9100-4034-4	FS-9100-4035-1	FS-9100-4036-9
FS-9100-5074-9	FS-9100-5287-7	FS-9100-5288-5	FS-9100-5289-3	FS-9100-5290-1
UU-0101-3332-8	UU-0101-3333-6	UU-0101-3334-4		

### 1.2. Recommended use and restrictions on use

#### Recommended use

Structural Bonding, 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:**

19-2691-4, 19-2630-2

## 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](http://www.3M.com.my)**



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<b>Document Group:</b>	19-2691-4	<b>Version Number:</b>	8.00
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This Safety Data Sheet has been prepared in accordance with the Malaysia Occupational Safety and Health (Chemical Classification, Labelling and Safety Data Sheets) Regulations 2013.

### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part A

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Part A of 2-Part Epoxy Adhesive, Structural adhesive

For Industrial or Professional use only

#### 1.3. Supplier's details

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

#### 1.4. Emergency telephone number

+60 03-7884 2888

### SECTION 2: Hazard identification

#### 2.1. Classification of the substance or mixture

Skin Corrosion/Irritation: Category 1.

Serious Eye Damage/Irritation: Category 1.

Skin Sensitizer: Category 1.

Acute Aquatic Toxicity: Category 1.

Chronic Aquatic Toxicity: Category 1.

#### 2.2. Label elements

##### Signal word

Danger

##### Symbols

Corrosion | Exclamation mark | Environment |

**Pictograms**



**Hazard Statements:**

- H314 Causes severe skin burns and eye damage.
- H317 May cause an allergic skin reaction.
  
- H410 Very toxic to aquatic life with long lasting effects.

**Precautionary statements**

**Prevention:**

- P260 Do not breathe dust/fume/gas/mist/vapors/spray.
- P273 Avoid release to the environment.
- P280D Wear protective gloves, protective clothing, and eye/face protection.

**Response:**

- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
- 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**

May cause chemical gastrointestinal burns., May cause drowsiness or dizziness., 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
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	68911-25-1	30 - 60
2-PROPENENITRILE, POLYMER WITH 1,3-BUTADIENE, 1-CYANO-1-METHYL-4-OXO-4-[[2-(1-PIPERAZINYL)ETHYL]AMINO]BUTYL-TERMINATED	68683-29-4	5 - 15
BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL	4246-51-9	< 13
Tris(2,4,6-dimethylaminomonomethyl)phenol	90-72-2	7 - 13
Siloxanes and Silicones, di-Me, reaction	67762-90-7	< 10

products with silica		
Titanium Dioxide	13463-67-7	< 2
BIS[(DIMETHYLAMINO)METHYL]PHE NOL	71074-89-0	1 - 2
N-aminoethylpiperazine	140-31-8	< 1

## **SECTION 4: First aid measures**

### **4.1. Description of first aid measures**

**Inhalation:**

Remove person to fresh air. If you feel unwell, get medical attention.

**Skin Contact:**

Immediately flush with large amounts of water for at least 15 minutes. Remove contaminated clothing. Get immediate medical attention. Wash clothing before reuse.

**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. Do not induce vomiting. Get immediate medical attention.

### **4.2. Most important symptoms and effects, both acute and delayed**

Skin burns (localized redness, swelling, itching, intense pain, blistering, and tissue destruction). 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). Central nervous system depression (headache, dizziness, drowsiness, incoordination, nausea, slurred speech, giddiness, and unconsciousness).

### **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**

Amine Compounds  
Carbon monoxide  
Carbon dioxide  
Oxides of Nitrogen  
Toxic Vapor, Gas, Particulate

**Condition**

During Combustion  
During Combustion  
During Combustion  
During Combustion  
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.

## 6.3. Methods and material for containment and cleaning up

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

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 in a well-ventilated place. Keep container tightly closed. 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
DUST, INERT OR NUISANCE	13463-67-7	Malaysia OELs	TWA (proposed)(respirable particles)(8 hours):3 mg/m <sup>3</sup> ;TWA (proposed)(Inhalable particulate)(8 hours):10 mg/m <sup>3</sup>	
Titanium Dioxide	13463-67-7	ACGIH	TWA(Respirable nanoscale particles):0.2 mg/m <sup>3</sup> ;TWA(Respirable finescale particles):2.5 mg/m <sup>3</sup>	A3: Confirmed animal carcin.
Titanium Dioxide	13463-67-7	Malaysia OELs	TWA(8 hours):10 mg/m <sup>3</sup>	

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 ventilated enclosure for curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. 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: Butyl Rubber  
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 – Butyl rubber

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

<b>Physical state</b>	Solid
<b>Specific Physical Form:</b>	Thixotropic paste
<b>Color</b>	Off-White
<b>Odor</b>	Light Amine
<b>Odor threshold</b>	<i>No Data Available</i>
<b>pH</b>	<i>Not Applicable</i>
<b>Melting point/Freezing point</b>	<i>Not Applicable</i>
<b>Boiling point/Initial boiling point/Boiling range</b>	<i>Not Applicable</i>
<b>Flash Point</b>	≥100 °C [ <i>Test Method: Closed Cup</i> ]
<b>Evaporation rate</b>	Negligible
<b>Flammability</b>	Not Applicable
<b>Flammable Limits(LEL)</b>	<i>Not Applicable</i>
<b>Flammable Limits(UEL)</b>	<i>Not Applicable</i>
<b>Vapor Pressure</b>	86,659.3 Pa
<b>Vapor Density and/or Relative Vapor Density</b>	<i>Not Applicable</i>
<b>Density</b>	<i>No Data Available</i>

Relative Density	0.97 - 1.1 [Ref Std:WATER=1]
Water solubility	No Data Available
Solubility- non-water	No Data Available
Partition coefficient: n-octanol/ water	Not Applicable
Autoignition temperature	Not Applicable
Decomposition temperature	No Data Available
Kinematic Viscosity	No Data Available
Volatile Organic Compounds	Not Applicable
Percent volatile	<= 1 % weight [Test Method:Estimated]
VOC Less H2O & Exempt Solvents	Not Applicable
Molecular weight	Not Applicable

Particle Characteristics	Not Applicable
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## 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

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

### 10.5. Incompatible materials

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.

**Skin Contact:**

Corrosive (Skin Burns): Signs/symptoms may include localized redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.

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:**

May be harmful if swallowed.

Gastrointestinal Corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain; nausea; vomiting; and diarrhea; blood in the feces and/or vomitus may also be seen.

May cause additional health effects (see below).

**Additional Health Effects:**

**Single exposure may cause target organ effects:**

Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

**Reproductive/Developmental Toxicity:**

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

**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	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE >2,000 - =5,000 mg/kg
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	Dermal	Rat	LD50 > 2,000 mg/kg
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	Ingestion	Rat	LD50 > 2,000 mg/kg
2-PROPENENITRILE, POLYMER WITH 1,3-BUTADIENE, 1-CYANO-1-METHYL-4-OXO-4-[[2-(1-PIPERAZINYL)ETHYL]AMINO]BUTYL-TERMINATED	Dermal	Rabbit	LD50 > 3,000 mg/kg
2-PROPENENITRILE, POLYMER WITH 1,3-BUTADIENE, 1-CYANO-1-METHYL-4-OXO-4-[[2-(1-PIPERAZINYL)ETHYL]AMINO]BUTYL-TERMINATED	Ingestion	Rat	LD50 > 15,300 mg/kg
Tris(2,4,6-dimethylaminomonomethyl)phenol	Dermal	Rat	LD50 1,280 mg/kg
Tris(2,4,6-dimethylaminomonomethyl)phenol	Ingestion	Rat	LD50 1,000 mg/kg
Siloxanes and Silicones, di-Me, reaction products with silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Siloxanes and Silicones, di-Me, reaction products with silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l

**3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part A**

Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Rat	LD50 > 5,110 mg/kg
BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL	Dermal	Rabbit	LD50 2,525 mg/kg
BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL	Ingestion	Rat	LD50 2,850 mg/kg
BIS[(DIMETHYLAMINO)METHYL]PHENOL	Ingestion		LD50 estimated to be 300 - 2,000 mg/kg
Titanium Dioxide	Dermal	Rabbit	LD50 > 10,000 mg/kg
Titanium Dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l
Titanium Dioxide	Ingestion	Rat	LD50 > 10,000 mg/kg
N-aminoethylpiperazine	Dermal	Rabbit	LD50 865 mg/kg
N-aminoethylpiperazine	Ingestion	Rat	LD50 1,470 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	Rat	Irritant
2-PROPENENITRILE, POLYMER WITH 1,3-BUTADIENE, 1-CYANO-1-METHYL-4-OXO-4-[[2-(1-PIPERAZINYL)ETHYL]AMINO]BUTYL-TERMINATED	Rabbit	Irritant
Tris(2,4,6-dimethylaminomonomethyl)phenol	Rabbit	Corrosive
Siloxanes and Silicones, di-Me, reaction products with silica	Rabbit	No significant irritation
BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL	Rabbit	Corrosive
BIS[(DIMETHYLAMINO)METHYL]PHENOL	similar compounds	Corrosive
Titanium Dioxide	Rabbit	No significant irritation
N-aminoethylpiperazine	Rabbit	Corrosive

**Serious Eye Damage/Irritation**

Name	Species	Value
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	In vitro data	Severe irritant
2-PROPENENITRILE, POLYMER WITH 1,3-BUTADIENE, 1-CYANO-1-METHYL-4-OXO-4-[[2-(1-PIPERAZINYL)ETHYL]AMINO]BUTYL-TERMINATED	Rabbit	Mild irritant
Tris(2,4,6-dimethylaminomonomethyl)phenol	Rabbit	Corrosive
Siloxanes and Silicones, di-Me, reaction products with silica	Rabbit	No significant irritation
BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL	Rabbit	Corrosive
BIS[(DIMETHYLAMINO)METHYL]PHENOL	similar compounds	Corrosive
Titanium Dioxide	Rabbit	No significant irritation
N-aminoethylpiperazine	Rabbit	Corrosive

**Sensitization:**
**Skin Sensitization**

Name	Species	Value
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	Guinea pig	Sensitizing
2-PROPENENITRILE, POLYMER WITH 1,3-BUTADIENE, 1-CYANO-1-METHYL-4-OXO-4-[[2-(1-PIPERAZINYL)ETHYL]AMINO]BUTYL-TERMINATED	Guinea pig	Sensitizing
Tris(2,4,6-dimethylaminomonomethyl)phenol	Guinea pig	Not classified
Siloxanes and Silicones, di-Me, reaction products with silica	Human and animal	Not classified
BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL	Professio	Sensitizing

	nal judgement	
Titanium Dioxide	Human and animal	Not classified
N-aminoethylpiperazine	Guinea pig	Sensitizing

**Respiratory Sensitization**

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

**Germ Cell Mutagenicity**

Name	Route	Value
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	In Vitro	Not mutagenic
Tris(2,4,6-dimethylaminomonomethyl)phenol	In Vitro	Not mutagenic
Siloxanes and Silicones, di-Me, reaction products with silica	In Vitro	Not mutagenic
BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL	In Vitro	Not mutagenic
Titanium Dioxide	In Vitro	Not mutagenic
Titanium Dioxide	In vivo	Not mutagenic
N-aminoethylpiperazine	In vivo	Not mutagenic
N-aminoethylpiperazine	In Vitro	Some positive data exist, but the data are not sufficient for classification

**Carcinogenicity**

Name	Route	Species	Value
Siloxanes and Silicones, di-Me, reaction products with silica	Not Specified	Mouse	Some positive data exist, but the data are not sufficient for classification
Titanium Dioxide	Ingestion	Multiple animal species	Not carcinogenic
Titanium Dioxide	Inhalation	Rat	Carcinogenic

**Reproductive Toxicity**

**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	29 days
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
Tris(2,4,6-dimethylaminomonomethyl)phenol	Ingestion	Not classified for male reproduction	Rat	NOAEL 150 mg/kg/day	2 generation
Tris(2,4,6-dimethylaminomonomethyl)phenol	Ingestion	Not classified for female reproduction	Rat	NOAEL 50 mg/kg/day	2 generation
Tris(2,4,6-dimethylaminomonomethyl)phenol	Ingestion	Not classified for development	Rabbit	NOAEL 15 mg/kg/day	during gestation
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for development	Rat	NOAEL 1,350	during organogenesis

					mg/kg/day	
BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL	Ingestion	Not classified for female reproduction	Rat	NOAEL 600 mg/kg/day	prematuring into lactation	
BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL	Ingestion	Not classified for male reproduction	Rat	NOAEL 600 mg/kg/day	59 days	
BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL	Ingestion	Not classified for development	Rat	NOAEL 600 mg/kg/day	prematuring into lactation	
N-aminoethylpiperazine	Ingestion	Not classified for female reproduction	Rat	NOAEL 598 mg/kg/day	prematuring & during gestation	
N-aminoethylpiperazine	Ingestion	Not classified for male reproduction	Rat	NOAEL 409 mg/kg/day	32 days	
N-aminoethylpiperazine	Ingestion	Toxic to development	Rabbit	NOAEL 75 mg/kg/day	during gestation	

**Target Organ(s)**

**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	Irritation Positive	
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Rat	NOAEL Not available	
2-PROPENENITRILE, POLYMER WITH 1,3-BUTADIENE, 1-CYANO-1-METHYL-4-OXO-4-[[2-(1-PIPERAZINYL)ETHYL]AMINO]BUTYL-TERMINATED	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL not available	
Tris(2,4,6-dimethylaminomonomethyl)phenol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
N-aminoethylpiperazine	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	Ingestion	heart   skin   endocrine system   gastrointestinal tract   bone, teeth, nails, and/or hair   hematopoietic system   liver   immune system   muscles   nervous system   eyes   kidney and/or bladder   respiratory system   vascular system	Not classified	Rat	NOAEL 1,000 mg/kg/day	29 days

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Tris(2,4,6-dimethylaminomonomethyl)phenol	Dermal	skin	Not classified	Rat	NOAEL 25 mg/kg/day	4 weeks
Tris(2,4,6-dimethylaminomonomethyl)phenol	Dermal	liver   nervous system   auditory system   hematopoietic system   eyes	Not classified	Rat	NOAEL 125 mg/kg/day	4 weeks
Tris(2,4,6-dimethylaminomonomethyl)phenol	Ingestion	heart   endocrine system   hematopoietic system   liver   muscles   nervous system   kidney and/or bladder   respiratory system   vascular system   auditory system   skin   gastrointestinal tract   bone, teeth, nails, and/or hair   immune system   eyes	Not classified	Rat	NOAEL 150 mg/kg/day	90 days
Siloxanes and Silicones, di-Me, reaction products with silica	Inhalation	respiratory system   silicosis	Not classified	Human	NOAEL Not available	occupational exposure
BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL	Ingestion	gastrointestinal tract   heart   endocrine system   bone, teeth, nails, and/or hair   hematopoietic system   liver   immune system   muscles   nervous system   eyes   kidney and/or bladder   respiratory system   vascular system	Not classified	Rat	NOAEL 600 mg/kg/day	59 days
Titanium Dioxide	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.01 mg/l	2 years
Titanium Dioxide	Inhalation	pulmonary fibrosis	Not classified	Human	NOAEL Not available	occupational exposure
N-aminoethylpiperazine	Dermal	skin	Not classified	Rat	NOAEL 100 mg/kg/day	29 days
N-aminoethylpiperazine	Dermal	hematopoietic system   nervous system   kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	29 days
N-aminoethylpiperazine	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 0.2 mg/m <sup>3</sup>	13 weeks
N-aminoethylpiperazine	Inhalation	hematopoietic system   eyes   kidney and/or bladder	Not classified	Rat	NOAEL 53.8 mg/m <sup>3</sup>	13 weeks
N-aminoethylpiperazine	Ingestion	heart   endocrine system   hematopoietic system   liver   nervous system   kidney and/or bladder	Not classified	Rat	NOAEL 598 mg/kg/day	28 days

**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 1: Very toxic to aquatic life.

#### Chronic aquatic hazard:

GHS Chronic 1: Very toxic to aquatic life with long lasting effects.

No product test data available

Material	Cas #	Organism	Type	Exposure	Test Endpoint	Test Result
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	68911-25-1	Fathead Minnow	Experimental	96 hours	LL50	2.16 mg/l
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	68911-25-1	Green algae	Experimental	72 hours	EL50	0.43 mg/l
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	68911-25-1	Water flea	Experimental	48 hours	EL50	0.57 mg/l
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	68911-25-1	Green algae	Experimental	72 hours	NOEL	0.28 mg/l
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	68911-25-1	Activated sludge	Experimental	3 hours	EC50	410.3 mg/l

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[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]						
2-PROPENENITRILE, POLYMER WITH 1,3-BUTADIENE, 1-CYANO-1-METHYL-4-OXO-4-[[2-(1-PIPERAZINYL)ETHYL]AMINO]BUTYL-TERMINATED	68683-29-4	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
BIS(3-AMINOPROPYL)ETHER OF DIETHYLENE GLYCOL	4246-51-9	Bacteria	Experimental	17 hours	EC50	4,000 mg/l
BIS(3-AMINOPROPYL)ETHER OF DIETHYLENE GLYCOL	4246-51-9	Golden Orfe	Experimental	96 hours	LC50	>1,000 mg/l
BIS(3-AMINOPROPYL)ETHER OF DIETHYLENE GLYCOL	4246-51-9	Green algae	Experimental	72 hours	EC50	>500 mg/l
BIS(3-AMINOPROPYL)ETHER OF DIETHYLENE GLYCOL	4246-51-9	Water flea	Experimental	48 hours	EC50	218.16 mg/l
BIS(3-AMINOPROPYL)ETHER OF DIETHYLENE GLYCOL	4246-51-9	Green algae	Experimental	72 hours	EC10	5.4 mg/l
Tris(2,4,6-dimethylaminomethyl)phenol	90-72-2	N/A	Experimental	96 hours	LC50	718 mg/l
Tris(2,4,6-dimethylaminomethyl)phenol	90-72-2	Common Carp	Experimental	96 hours	LC50	>100 mg/l
Tris(2,4,6-dimethylaminomethyl)phenol	90-72-2	Green algae	Experimental	72 hours	EC50	46.7 mg/l
Tris(2,4,6-dimethylaminomethyl)phenol	90-72-2	Water flea	Experimental	48 hours	EC50	>100 mg/l
Tris(2,4,6-dimethylaminomethyl)phenol	90-72-2	Green algae	Experimental	72 hours	NOEC	6.44 mg/l
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
BIS[(DIMETHYLAMINO)METHYL]PHENOL	71074-89-0	N/A	Data not available or insufficient for classification	N/A	N/A	NA
Titanium Dioxide	13463-67-7	Activated sludge	Experimental	3 hours	NOEC	>=1,000 mg/l
Titanium Dioxide	13463-67-7	Diatom	Experimental	72 hours	EC50	>10,000 mg/l
Titanium Dioxide	13463-67-7	Fathead Minnow	Experimental	96 hours	LC50	>100 mg/l
Titanium Dioxide	13463-67-7	Water flea	Experimental	48 hours	EC50	>100 mg/l
Titanium Dioxide	13463-67-7	Diatom	Experimental	72 hours	NOEC	5,600 mg/l

**3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part A**

N-aminoethylpiperazine	140-31-8	Bacteria	Experimental	17 hours	EC10	100 mg/l
N-aminoethylpiperazine	140-31-8	Golden Orfe	Experimental	96 hours	LC50	368 mg/l
N-aminoethylpiperazine	140-31-8	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
N-aminoethylpiperazine	140-31-8	Water flea	Experimental	48 hours	EC50	58 mg/l
N-aminoethylpiperazine	140-31-8	Green algae	Experimental	72 hours	NOEC	31 mg/l

**12.2. Persistence and degradability**

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	68911-25-1	Experimental Biodegradation	28 days	Biological Oxygen Demand	0 %BOD/ThOD	OECD 301F - Manometric Respiro
2-PROPENENITRILE, POLYMER WITH 1,3-BUTADIENE, 1-CYANO-1-METHYL-4-OXO-4-[[2-(1-PIPERAZINYL)ETHYL]AMINO]BUTYL-TERMINATED	68683-29-4	Data not available - insufficient	N/A	N/A	N/A	N/A
BIS(3-AMINOPROPYL)ETHER OF DIETHYLENE GLYCOL	4246-51-9	Experimental Biodegradation	25 days	Carbon dioxide evolution	-8 %CO <sub>2</sub> evolution/THCO <sub>2</sub> evolution	OECD 301B - Mod. Sturm or CO <sub>2</sub>
BIS(3-AMINOPROPYL)ETHER OF DIETHYLENE GLYCOL	4246-51-9	Estimated Photolysis		Photolytic half-life (in air)	2.96 hours (t 1/2)	
Tris(2,4,6-dimethylaminomethyl)phenol	90-72-2	Experimental Biodegradation	28 days	Biological Oxygen Demand	4 %BOD/ThOD	OECD 301D - Closed Bottle Test
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	Data not available - insufficient	N/A	N/A	N/A	N/A
BIS[(DIMETHYLAMINO)METHYL]PHENOL	71074-89-0	Modeled Biodegradation	28 days	Biological Oxygen Demand	41 %CO <sub>2</sub> evolution/THCO <sub>2</sub> evolution	Catalogic™
Titanium Dioxide	13463-67-7	Data not available - insufficient	N/A	N/A	N/A	N/A
N-aminoethylpiperazine	140-31-8	Experimental Biodegradation	28 days	Biological Oxygen Demand	0 %BOD/ThOD	OECD 301C - MITI (I)



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**12.3. Bioaccumulative potential**

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	68911-25-1	Modeled Bioconcentration		Bioaccumulation Factor	42	Catalogic™
FATTY ACIDS, C18-UNSATD., DIMERS, POLYMERS WITH 3,3'-[OXYBIS(2,1-ETHANEDIYLOXY)]BIS[1-PROPANAMINE]	68911-25-1	Modeled Bioconcentration		Log of Octanol/H2O part. coeff	11.7	Episuite™
2-PROPENENITRILE, POLYMER WITH 1,3-BUTADIENE, 1-CYANO-1-METHYL-4-OXO-4-[[2-(1-PIPERAZINYLETHTYL)AMINO]BUTYL-TERMINATED	68683-29-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
BIS(3-AMINOPROPYL)ETHER OF DIETHYLENE GLYCOL	4246-51-9	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	-1.25	
Tris(2,4,6-dimethylaminomethyl)phenol	90-72-2	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	-0.66	830.7550 Part.Coef Shake Flask
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
BIS[(DIMETHYLAMINO)METHYL]PHENOL	71074-89-0	Modeled Bioconcentration		Log of Octanol/H2O part. coeff	-2.34	ACD/Labs ChemSketch™
Titanium Dioxide	13463-67-7	Experimental BCF - Fish	42 days	Bioaccumulation Factor	9.6	
N-aminoethylpiperazine	140-31-8	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	0.3	

**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:**UN3263  
**Proper Shipping Name:**CORROSIVE SOLID, BASIC, ORGANIC, N.O.S.  
**Technical Name:**None assigned.  
**Hazard Class/Division:**8  
**Subsidiary Risk:**None assigned.  
**Packing Group:**II  
**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:**UN3263  
**Proper Shipping Name:**CORROSIVE SOLID, BASIC, ORGANIC, N.O.S.  
**Technical Name:**None assigned.  
**Hazard Class/Division:**8  
**Subsidiary Risk:**None assigned.  
**Packing Group:**II  
**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 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](http://www.3M.com.my)**



## Safety Data Sheet

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

### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part B

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Part B of 2-Part Epoxy Adhesive, Structural adhesive

#### 1.3. Supplier's details

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

#### 1.4. Emergency telephone number

+60 03-7884 2888

### SECTION 2: Hazard identification

#### 2.1. Classification of the substance or mixture

Skin Corrosion/Irritation: Category 2.

Serious Eye Damage/Irritation: Category 2.

Skin Sensitizer: Category 1.

Chronic Aquatic Toxicity: Category 2.

#### 2.2. Label elements

##### Signal word

Warning

##### Symbols

Exclamation mark |Environment |

##### Pictograms



**Hazard Statements:**

H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H317 May cause an allergic skin reaction.  
  
 H411 Toxic to aquatic life with long lasting effects.

**Precautionary statements**

**Prevention:**

P273 Avoid release to the environment.  
 P280E Wear protective gloves.

**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.  
 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
Bisphenol A Diglycidyl Ether	1675-54-3	40 - 70
MBS POLYMER (METHYL METHACRYLATE-BUTADIENE-STYRENE POLYMER)	Trade Secret	10 - 20
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	14228-73-0	5 - 15
Oxide glass chemicals	65997-17-3	1 - 5
Carbon Black	1333-86-4	1 - 5
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	1 - 5
3-(trimethoxysilyl)propyl glycidyl ether	2530-83-8	0.5 - 1.5
Titanium Dioxide	13463-67-7	0.5 - 1.5

**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**

Allergic skin reaction (redness, swelling, blistering, and itching).

**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 carbon dioxide or dry chemical extinguisher to extinguish.

**5.2. Special hazards arising from the substance or mixture**

None inherent in this product.

**Hazardous Decomposition or By-Products**

Substance

Aldehydes  
Carbon monoxide  
Carbon dioxide  
Hydrogen Chloride

Condition

During Combustion  
During Combustion  
During Combustion  
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.

**6.3. Methods and material for containment and cleaning up**

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

For industrial/occupational use only. Not for consumer sale or use. Decontaminate work surfaces frequently to avoid exposure by contact. 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. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.)

**7.2. Conditions for safe storage including any incompatibilities**

Store away from acids. 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
Carbon Black	1333-86-4	ACGIH	TWA(inhalable fraction):3 mg/m3	A3: Confirmed animal carcin.
Carbon Black	1333-86-4	Malaysia OELs	TWA(8 hours):3.5 mg/m3	
DUST, INERT OR NUISANCE	1333-86-4	Malaysia OELs	TWA (proposed)(respirable particles)(8 hours):3 mg/m3;TWA (proposed)(Inhalable particulate)(8 hours):10 mg/m3	
DUST, INERT OR NUISANCE	13463-67-7	Malaysia OELs	TWA (proposed)(respirable particles)(8 hours):3 mg/m3;TWA (proposed)(Inhalable particulate)(8 hours):10 mg/m3	
Titanium Dioxide	13463-67-7	ACGIH	TWA(Respirable nanoscale particles):0.2 mg/m3;TWA(Respirable finescale particles):2.5 mg/m3	A3: Confirmed animal carcin.
Titanium Dioxide	13463-67-7	Malaysia OELs	TWA(8 hours):10 mg/m3	
GLASS FILAMENTS	65997-17-3	Malaysia OELs	TWA(inhalable fraction)(8 hours):5 mg/m3;TWA(as fiber)(8 hours):1 fibers/ml	
Oxide glass chemicals	65997-17-3	Manufacturer determined	TWA(as non-fibrous, respirable)(8 hours):3 mg/m3;TWA(as non-fibrous, inhalable fraction)(8 hours):10 mg/m3	

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 ventilated enclosure for curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. 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

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**

<b>Physical state</b>	Solid
<b>Specific Physical Form:</b>	Thixotropic paste
<b>Color</b>	Black
<b>Odor</b>	Mild Epoxy
<b>Odor threshold</b>	No Data Available
<b>pH</b>	No Data Available
<b>Melting point/Freezing point</b>	No Data Available
<b>Boiling point/Initial boiling point/Boiling range</b>	No Data Available
<b>Flash Point</b>	>=93.3 °C [Test Method:Closed Cup]
<b>Evaporation rate</b>	Not Applicable
<b>Flammability (solid, gas)</b>	Not Classified
<b>Flammable Limits(LEL)</b>	No Data Available
<b>Flammable Limits(UEL)</b>	No Data Available
<b>Vapor Pressure</b>	< 0.01 Pa [ @ 20 °C ]
<b>Vapor Density and/or Relative Vapor Density</b>	Not Applicable
<b>Density</b>	No Data Available
<b>Relative Density</b>	0.97 - 1.1 [ @ 23 °C ] [Ref Std: WATER=1]
<b>Water solubility</b>	No Data Available



<b>Solubility- non-water</b>	<i>No Data Available</i>
<b>Partition coefficient: n-octanol/ water</b>	<i>Not Applicable</i>
<b>Autoignition temperature</b>	<i>No Data Available</i>
<b>Decomposition temperature</b>	<i>No Data Available</i>
<b>Viscosity/Kinematic Viscosity</b>	300 - 900 Pa-s [ <i>@ 23 °C</i> ] [ <i>Test Method: Brookfield</i> ]
<b>Volatile Organic Compounds</b>	0 g/l [ <i>Test Method: calculated SCAQMD rule 443.1</i> ] [ <i>Details: as supplied</i> ]
<b>Percent volatile</b>	1 % [ <i>Test Method: Estimated</i> ]
<b>VOC Less H2O &amp; Exempt Solvents</b>	<i>No Data Available</i>
<b>Molecular weight</b>	<i>Not Applicable</i>

## 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 is generated during cure. Do not cure a mass larger than 50 grams in a confined space to prevent a premature exothermic reaction with production of intense heat and smoke.

### 10.5. Incompatible materials

Strong acids

Strong oxidizing agents

### 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.

**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.

**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
Bisphenol A Diglycidyl Ether	Dermal	Rat	LD50 > 1,600 mg/kg
Bisphenol A Diglycidyl Ether	Ingestion	Rat	LD50 > 1,000 mg/kg
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	Dermal	Rabbit	LD50 > 2,000 mg/kg
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.19 mg/l
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	Ingestion	Rat	LD50 1,098 mg/kg
Siloxanes and Silicones, di-Me, reaction products with silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Siloxanes and Silicones, di-Me, reaction products with silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Rat	LD50 > 5,110 mg/kg
Carbon Black	Dermal	Rabbit	LD50 > 3,000 mg/kg
Carbon Black	Ingestion	Rat	LD50 > 8,000 mg/kg
Oxide glass chemicals	Dermal		LD50 estimated to be > 5,000 mg/kg
Oxide glass chemicals	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Titanium Dioxide	Dermal	Rabbit	LD50 > 10,000 mg/kg
Titanium Dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l
Titanium Dioxide	Ingestion	Rat	LD50 > 10,000 mg/kg
3-(trimethoxysilyl)propyl glycidyl ether	Dermal	Rabbit	LD50 4,000 mg/kg
3-(trimethoxysilyl)propyl glycidyl ether	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.3 mg/l
3-(trimethoxysilyl)propyl glycidyl ether	Ingestion	Rat	LD50 7,010 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
Bisphenol A Diglycidyl Ether	Rabbit	Mild irritant
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	In vitro data	Irritant
Siloxanes and Silicones, di-Me, reaction products with silica	Rabbit	No significant irritation
Carbon Black	Rabbit	No significant irritation
Oxide glass chemicals	Professional judgement	No significant irritation
Titanium Dioxide	Rabbit	No significant irritation
3-(trimethoxysilyl)propyl glycidyl ether	Rabbit	Mild irritant

**Serious Eye Damage/Irritation**

Name	Species	Value
Bisphenol A Diglycidyl Ether	Rabbit	Moderate irritant
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	In vitro data	No significant irritation
Siloxanes and Silicones, di-Me, reaction products with silica	Rabbit	No significant irritation
Carbon Black	Rabbit	No significant irritation
Oxide glass chemicals	Professional judgement	No significant irritation
Titanium Dioxide	Rabbit	No significant irritation
3-(trimethoxysilyl)propyl glycidyl ether	Rabbit	Corrosive

**Sensitization:**

**Skin Sensitization**

Name	Species	Value
Bisphenol A Diglycidyl Ether	Human and animal	Sensitizing
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	Mouse	Sensitizing
Siloxanes and Silicones, di-Me, reaction products with silica	Human and animal	Not classified
Titanium Dioxide	Human and animal	Not classified
3-(trimethoxysilyl)propyl glycidyl ether	Guinea pig	Not classified

**Respiratory Sensitization**

Name	Species	Value
Bisphenol A Diglycidyl Ether	Human	Not classified

**Germ Cell Mutagenicity**

Name	Route	Value
Bisphenol A Diglycidyl Ether	In vivo	Not mutagenic
Bisphenol A Diglycidyl Ether	In Vitro	Some positive data exist, but the data are not sufficient for classification
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	In vivo	Not mutagenic
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	In Vitro	Some positive data exist, but the data are not sufficient for classification
Siloxanes and Silicones, di-Me, reaction products with silica	In Vitro	Not mutagenic
Carbon Black	In Vitro	Not mutagenic
Carbon Black	In vivo	Some positive data exist, but the data are not sufficient for classification
Oxide glass chemicals	In Vitro	Some positive data exist, but the data are not sufficient for classification
Titanium Dioxide	In Vitro	Not mutagenic
Titanium Dioxide	In vivo	Not mutagenic
3-(trimethoxysilyl)propyl glycidyl ether	In vivo	Not mutagenic
3-(trimethoxysilyl)propyl glycidyl ether	In Vitro	Some positive data exist, but the data are not sufficient for classification

**Carcinogenicity**

Name	Route	Species	Value
Bisphenol A Diglycidyl Ether	Dermal	Mouse	Some positive data exist, but the data are not

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			sufficient for classification
Siloxanes and Silicones, di-Me, reaction products with silica	Not Specified	Mouse	Some positive data exist, but the data are not sufficient for classification
Carbon Black	Dermal	Mouse	Not carcinogenic
Carbon Black	Ingestion	Mouse	Not carcinogenic
Carbon Black	Inhalation	Rat	Carcinogenic
Oxide glass chemicals	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Titanium Dioxide	Ingestion	Multiple animal species	Not carcinogenic
Titanium Dioxide	Inhalation	Rat	Carcinogenic
3-(trimethoxysilyl)propyl glycidyl ether	Dermal	Mouse	Not carcinogenic

**Reproductive Toxicity**
**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
Bisphenol A Diglycidyl Ether	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
Bisphenol A Diglycidyl Ether	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
Bisphenol A Diglycidyl Ether	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
Bisphenol A Diglycidyl Ether	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	Ingestion	Not classified for female reproduction	Rat	NOAEL 300 mg/kg/day	premating into lactation
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	Ingestion	Not classified for male reproduction	Rat	NOAEL 300 mg/kg/day	33 days
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	Ingestion	Not classified for development	Rat	NOAEL 300 mg/kg/day	premating into lactation
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
3-(trimethoxysilyl)propyl glycidyl ether	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
3-(trimethoxysilyl)propyl glycidyl ether	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
3-(trimethoxysilyl)propyl glycidyl ether	Ingestion	Not classified for development	Rat	NOAEL 3,000 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
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure
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						<b>Duration</b>
Bisphenol A Diglycidyl Ether	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
Bisphenol A Diglycidyl Ether	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Bisphenol A Diglycidyl Ether	Ingestion	auditory system   heart   endocrine system   hematopoietic system   liver   eyes   kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	Ingestion	endocrine system   gastrointestinal tract   liver   heart   hematopoietic system   immune system   nervous system   kidney and/or bladder	Not classified	Rat	NOAEL 300 mg/kg/day	33 days
Siloxanes and Silicones, di-Me, reaction products with silica	Inhalation	respiratory system   silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Carbon Black	Inhalation	pneumoconiosis	Not classified	Human	NOAEL Not available	occupational exposure
Oxide glass chemicals	Inhalation	respiratory system	Not classified	Human	NOAEL not available	occupational exposure
Titanium Dioxide	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.01 mg/l	2 years
Titanium Dioxide	Inhalation	pulmonary fibrosis	Not classified	Human	NOAEL Not available	occupational exposure
3-(trimethoxysilyl)propyl glycidyl ether	Ingestion	heart   endocrine system   bone, teeth, nails, and/or hair   hematopoietic system   liver   immune system   nervous system   kidney and/or bladder   respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days

**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
Bisphenol A Diglycidyl Ether	1675-54-3	Activated sludge	Estimated	3 hours	IC50	>100 mg/l
Bisphenol A Diglycidyl Ether	1675-54-3	Rainbow Trout	Estimated	96 hours	LC50	2 mg/l
Bisphenol A Diglycidyl Ether	1675-54-3	Water flea	Estimated	48 hours	EC50	1.8 mg/l
Bisphenol A Diglycidyl Ether	1675-54-3	Green algae	Experimental	72 hours	EC50	>11 mg/l
Bisphenol A Diglycidyl Ether	1675-54-3	Green algae	Experimental	72 hours	NOEC	4.2 mg/l
Bisphenol A Diglycidyl Ether	1675-54-3	Water flea	Experimental	21 days	NOEC	0.3 mg/l
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	14228-73-0	Bacteria	Estimated	18 hours	EC50	10,264 mg/l
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	14228-73-0	Green algae	Estimated	72 hours	EC50	26.7 mg/l
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	14228-73-0	Rainbow Trout	Estimated	96 hours	LC50	10.1 mg/l
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	14228-73-0	Water flea	Estimated	48 hours	EC50	16.3 mg/l
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	14228-73-0	Green algae	Estimated	72 hours	EC10	21.4 mg/l
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	14228-73-0	Water flea	Estimated	21 days	NOEC	11.7 mg/l
Carbon Black	1333-86-4	Activated sludge	Experimental	3 hours	EC50	>=100 mg/l
Carbon Black	1333-86-4	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Oxide glass chemicals	65997-17-3	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
Oxide glass chemicals	65997-17-3	Water flea	Experimental	72 hours	EC50	>1,000 mg/l
Oxide glass chemicals	65997-17-3	Zebra Fish	Experimental	96 hours	LC50	>1,000 mg/l
Oxide glass chemicals	65997-17-3	Green algae	Experimental	72 hours	NOEC	>=1,000 mg/l
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
3-(trimethoxysilyl)propyl glycidyl ether	2530-83-8	Common Carp	Experimental	96 hours	LC50	55 mg/l
3-(trimethoxysilyl)propyl glycidyl ether	2530-83-8	Green algae	Experimental	96 hours	ErC50	350 mg/l
3-	2530-83-8	Invertebrate	Experimental	48 hours	LC50	324 mg/l

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(trimethoxysilyl)propyl glycidyl ether						
3-(trimethoxysilyl)propyl glycidyl ether	2530-83-8	Green algae	Experimental	96 hours	NOEC	130 mg/l
3-(trimethoxysilyl)propyl glycidyl ether	2530-83-8	Water flea	Experimental	21 days	NOEC	100 mg/l
3-(trimethoxysilyl)propyl glycidyl ether	2530-83-8	Activated sludge	Experimental	3 hours	EC50	>100 mg/l
Titanium Dioxide	13463-67-7	Activated sludge	Experimental	3 hours	NOEC	≥1,000 mg/l
Titanium Dioxide	13463-67-7	Diatom	Experimental	72 hours	EC50	>10,000 mg/l
Titanium Dioxide	13463-67-7	Fathead Minnow	Experimental	96 hours	LC50	>100 mg/l
Titanium Dioxide	13463-67-7	Water flea	Experimental	48 hours	EC50	>100 mg/l
Titanium Dioxide	13463-67-7	Diatom	Experimental	72 hours	NOEC	5,600 mg/l

**12.2. Persistence and degradability**

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Bisphenol A Diglycidyl Ether	1675-54-3	Experimental Biodegradation	28 days	Biological Oxygen Demand	5 %BOD/COD	OECD 301F - Manometric Respiro
Bisphenol A Diglycidyl Ether	1675-54-3	Experimental Hydrolysis		Hydrolytic half-life	117 hours (t 1/2)	
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	14228-73-0	Estimated Biodegradation	28 days	Dissolv. Organic Carbon Deplet	16.6 %removal of DOC	OECD 301F - Manometric Respiro
Carbon Black	1333-86-4	Data not available - insufficient	N/A	N/A	N/A	N/A
Oxide glass chemicals	65997-17-3	Data not available - insufficient	N/A	N/A	N/A	N/A
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	Data not available - insufficient	N/A	N/A	N/A	N/A
3-(trimethoxysilyl)propyl glycidyl ether	2530-83-8	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	37 %removal of DOC	EC C.4.A. DOC Die-Away Test
3-(trimethoxysilyl)propyl glycidyl ether	2530-83-8	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	6.5 hours (t 1/2)	OECD 111 Hydrolysis func of pH
Titanium Dioxide	13463-67-7	Data not available - insufficient	N/A	N/A	N/A	N/A

**12.3. Bioaccumulative potential**

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Bisphenol A Diglycidyl Ether	1675-54-3	Experimental Bioconcentration		Log of Octanol/H <sub>2</sub> O part. coeff	3.242	
1,4-BIS[(2,3-EPOXYPROPOXY)METHYL]CYCLOHEXANE	14228-73-0	Estimated Bioconcentration		Bioaccumulation Factor	3	
Carbon Black	1333-86-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Oxide glass chemicals	65997-17-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Siloxanes and	67762-90-7	Data not available	N/A	N/A	N/A	N/A

Silicones, di-Me, reaction products with silica		or insufficient for classification				
3-(trimethoxysilyl)propyl glycidyl ether	2530-83-8	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	0.5	Episuite™
Titanium Dioxide	13463-67-7	Experimental BCF - Fish	42 days	Bioaccumulation Factor	9.6	

**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:**UN3077

**Proper Shipping Name:**ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

**Technical Name:**(Epoxy Resin)

**Hazard Class/Division:**9

**Subsidiary Risk:**None assigned.

**Packing Group:**III

**Limited Quantity:**None assigned.

**Marine Pollutant:** Yes

**Marine Pollutant Technical Name:** (Epoxy Resin)

**Other Dangerous Goods Descriptions:**

None assigned.

**Air Transport (IATA)**

**UN Number:**UN3077

**Proper Shipping Name:**ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

**Technical Name:**(Epoxy Resin)

**Hazard Class/Division:**9

**Subsidiary Risk:**None assigned.

**Packing Group:**III

**Limited Quantity:**None assigned.

**Marine Pollutant:** Yes

**Marine Pollutant Technical Name:** (Epoxy Resin)

**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 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](http://www.3M.com.my)**