



## Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the SS586 Specification for Hazard Communication for Hazardous Chemicals and Dangerous Goods.

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### IDENTIFICATION

#### 1.1. Product identifier

3M™ Scotch-Weld™ Epoxy Adhesive EC-1751 B/A

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

##### Recommended use

Two-Component Structural Epoxy Adhesive, Industrial use.

#### 1.3. Supplier's details

**Address:** 3M Technologies (S) Pte Ltd,10 Ang Mo Kio Street 65, Singapore 569059  
**Telephone:** +65 6450 8888  
**Website:** www.3m.com.sg

#### 1.4. Emergency telephone number

**Company Emergency Hotline:** +65 6591 6601 (8.15am - 5.00pm, Monday - Friday)

**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:**

11-3232-3, 11-3329-7

### TRANSPORT INFORMATION

#### International Regulations

**UN No.:** None assigned

**UN Proper shipping name:** None assigned

**Transportation Class (IMO):** None assigned

**Transportation Class (IATA):** None assigned

**Other Dangerous Goods Descriptions (IMO):** Not restricted, as per IMDG code 2.10.2.7, marine pollutant exception.

**Other Dangerous Goods Descriptions (IATA):** Not restricted, as per Special Provision A197, environmentally hazardous substance exception.

**Packing Group:** None assigned

**Marine pollutant:** None assigned

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**3M Singapore SDSs are available at [www.3m.com.sg](http://www.3m.com.sg)**



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### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Scotch-Weld™ Epoxy Adhesive EC-1751 B/A Part B

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

##### Recommended use

Base for 2-Part Epoxy Adhesive, Industrial use.

#### 1.3. Supplier's details

**Address:** 3M Technologies (S) Pte Ltd,10 Ang Mo Kio Street 65, Singapore 569059  
**Telephone:** +65 6450 8888  
**Website:** www.3m.com.sg

#### 1.4. Emergency telephone number

+65 6591 6601 (8.15am - 5.00pm, Monday - Friday)

### SECTION 2: Hazard identification

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

Serious Eye Damage/Irritation: Category 2A  
Skin Sensitizer: Category 1.  
Reproductive Toxicity: Category 2.  
Carcinogenicity: Category 2.  
Germ Cell Mutagenicity: Category 2.  
Specific Target Organ Toxicity (single exposure): Category 2.  
Chronic Aquatic Toxicity: Category 1.

#### 2.2. Label elements

##### SIGNAL WORD

WARNING!

##### Symbols

Exclamation mark | Health Hazard | Environment |

##### Pictograms



**HAZARD STATEMENTS**

H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H361	Suspected of damaging fertility or the unborn child.
H351	Suspected of causing cancer.
H341	Suspected of causing genetic defects.
H371	May cause damage to organs: nervous system
H410	Very toxic to aquatic life with long lasting effects.

**PRECAUTIONARY STATEMENTS**

**Prevention:**

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280E	Wear protective gloves.
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.
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.
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**2.3. Other hazards**

None known.

**SECTION 3: Composition/information on ingredients**

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
4,4'-isopropylidenediphenol-epichlorohydrin polymer	25068-38-6	35 - 55
Aluminum Pigments	7429-90-5	15 - 40
Clay	68953-58-2	7 - 13
n-Butyl Glycidyl Ether	2426-08-6	< 10
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	1 - 5
Resorcinol	108-46-3	0.5 - 1.5
Quartz	14808-60-7	< 0.5
Copper	7440-50-8	< 0.01

**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). Target organ effects. See Section 11 for additional details.

#### 4.3. Indication of any immediate medical attention and special treatment required

Not applicable

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

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

None inherent in this product.

#### Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Aldehydes.	During combustion.
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.
Hydrogen gas.	During combustion.
Hydrogen Chloride	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

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 authorised person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and Safety Data Sheet. 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/vapours/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 oxidising agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (eg. gloves, respirators...) as required.

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

Store away from oxidising 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	CAS Nbr	Agency	Limit type	Additional comments
Resorcinol	108-46-3	ACGIH	TWA:10 ppm,STEL:20 ppm	A4: Not class. as human carcin
Resorcinol	108-46-3	Singapore PELs	TWA(8 hours):45 mg/m <sup>3</sup> (10 ppm);STEL(15 minutes):90 mg/m <sup>3</sup> (20 ppm)	
Quartz	14808-60-7	ACGIH	TWA(respirable fraction):0.025 mg/m <sup>3</sup>	A2: Suspected human carcin.
Quartz	14808-60-7	Singapore PELs	TWA(as respirable dust)(8 hours):0.1 mg/m <sup>3</sup>	
n-Butyl Glycidyl Ether	2426-08-6	ACGIH	TWA:3 ppm	SKIN; Dermal sensitizer
n-Butyl Glycidyl Ether	2426-08-6	Singapore PELs	TWA(8 hours):133 mg/m <sup>3</sup> (25 ppm);STEL(15 minutes):0.1 mg/m <sup>3</sup>	
Aluminum Pigments	7429-90-5	ACGIH	TWA(respirable fraction):1 mg/m <sup>3</sup>	A4: Not class. as human carcin
Aluminum Pigments	7429-90-5	Singapore PELs	TWA(as dust)(8 hours):10 mg/m <sup>3</sup> ;TWA(Al, welding fume)(8 hours):5 mg/m <sup>3</sup> ;TWA(as Al pyrophoric powder)(8 hours):5 mg/m <sup>3</sup>	
Copper	7440-50-8	Singapore PELs	TWA(as fume)(8 hours):0.2 mg/m <sup>3</sup> ;TWA(as Cu dust or mist)(8 hours): 1mg/m <sup>3</sup>	
COPPER, DUSTS AND MISTS, AS CU	7440-50-8	ACGIH	TWA(as Cu dust or mist):1 mg/m <sup>3</sup>	
COPPER, FUME AS CU	7440-50-8	ACGIH	TWA(as Cu, fume):0.2 mg/m <sup>3</sup>	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

Singapore PELs : Singapore. Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order

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/vapours/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:

Safety glasses with side shields.

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 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 vapours 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>	Liquid.
<b>Specific Physical Form:</b>	Paste
<b>Color</b>	Gray
<b>Odor</b>	Minimal Odor
<b>Odour 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>	$\geq 164$ °C [ <i>Details: n-Butyl Glycidyl Ether</i> ]
<b>Flash point</b>	$\geq 93.9$ °C [ <i>Test Method: Closed Cup</i> ]
<b>Evaporation rate</b>	<i>Not applicable.</i>
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Flammable Limits(LEL)</b>	<i>No data available.</i>

Flammable Limits(UEL)	No data available.
Vapour pressure	No data available.
Vapor Density and/or Relative Vapor Density	Not applicable.
Density	1.3 g/ml
Relative density	1.3 [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	100,000 mPa-s [ @ 23 °C ]
Volatile organic compounds (VOC)	<=113 g/l
Percent volatile	<=8.7 % weight
VOC less H2O & exempt solvents	<=113 g/l
Molecular weight	No data available.

## 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 polymerisation will not occur.

### 10.4 Conditions to avoid

Not determined

### 10.5 Incompatible materials

Strong oxidising 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 labelling, 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**

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

**Eye contact**

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 diarrhoea. May cause additional health effects (see below).

**Additional Health Effects:**

**Single 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 changes in blood pressure and heart rate.

**Reproductive/Developmental Toxicity:**

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

**Genotoxicity:**

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

**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
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Dermal	Rat	LD50 > 1,600 mg/kg
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Ingestion	Rat	LD50 > 1,000 mg/kg
Aluminum Pigments	Dermal		LD50 estimated to be > 5,000 mg/kg
Aluminum Pigments	Ingestion		LD50 estimated to be > 5,000 mg/kg
Aluminum Pigments	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.888 mg/l
Clay	Dermal		LD50 estimated to be > 5,000 mg/kg
Clay	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 12.6 mg/l
Clay	Ingestion	Rat	LD50 > 5,000 mg/kg
n-Butyl Glycidyl Ether	Dermal	Professional judgement	LD50 estimated to be 1,000 - 2,000 mg/kg
n-Butyl Glycidyl Ether	Inhalation-	Rat	LC50 14 mg/l

	Dust/Mist (4 hours)		
n-Butyl Glycidyl Ether	Inhalation-Vapor (4 hours)	Rat	LC50 7.7 mg/l
n-Butyl Glycidyl Ether	Ingestion	Rat	LD50 1,530 mg/kg
Silane, trimethoxyoctyl-, hydrolysis products with silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Silane, trimethoxyoctyl-, hydrolysis products with silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Silane, trimethoxyoctyl-, hydrolysis products with silica	Ingestion	Rat	LD50 > 5,110 mg/kg
Resorcinol	Dermal	Rabbit	LD50 3,360 mg/kg
Resorcinol	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 1.95 mg/l
Resorcinol	Ingestion	Rat	LD50 489 mg/kg
Quartz	Dermal		LD50 estimated to be > 5,000 mg/kg
Quartz	Ingestion		LD50 estimated to be > 5,000 mg/kg
Copper	Dermal	Rat	LD50 > 2,000 mg/kg
Copper	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.11 mg/l
Copper	Ingestion	Rat	LD50 > 2,000 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Rabbit	Mild irritant
Aluminum Pigments	Rabbit	No significant irritation
Clay	Rat	No significant irritation
n-Butyl Glycidyl Ether	Rabbit	Mild irritant
Silane, trimethoxyoctyl-, hydrolysis products with silica	Rabbit	No significant irritation
Resorcinol	Rabbit	Minimal irritation
Quartz	Professional judgement	No significant irritation
Copper	Rabbit	No significant irritation

**Serious Eye Damage/Irritation**

Name	Species	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Rabbit	Moderate irritant
Aluminum Pigments	Rabbit	No significant irritation
Clay	Rabbit	No significant irritation
n-Butyl Glycidyl Ether	Rabbit	Severe irritant
Silane, trimethoxyoctyl-, hydrolysis products with silica	Rabbit	No significant irritation
Resorcinol	Rabbit	Corrosive
Copper	Rabbit	Mild irritant

**Sensitization:**

**Skin Sensitisation**

Name	Species	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Human and animal	Sensitising
Aluminum Pigments	Guinea pig	Not classified
n-Butyl Glycidyl Ether	Multiple animal	Sensitising

	species	
Silane, trimethoxyoctyl-, hydrolysis products with silica	Human and animal	Not classified
Resorcinol	Multiple animal species	Sensitising

### Respiratory Sensitisation

Name	Species	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Human	Not classified
Aluminum Pigments	Human	Not classified

### Germ Cell Mutagenicity

Name	Route	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer	In vivo	Not mutagenic
4,4'-isopropylidenediphenol-epichlorohydrin polymer	In Vitro	Some positive data exist, but the data are not sufficient for classification
Aluminum Pigments	In Vitro	Not mutagenic
n-Butyl Glycidyl Ether	In Vitro	Some positive data exist, but the data are not sufficient for classification
n-Butyl Glycidyl Ether	In vivo	Mutagenic
Silane, trimethoxyoctyl-, hydrolysis products with silica	In Vitro	Not mutagenic
Resorcinol	In vivo	Not mutagenic
Resorcinol	In Vitro	Some positive data exist, but the data are not sufficient for classification
Quartz	In Vitro	Some positive data exist, but the data are not sufficient for classification
Quartz	In vivo	Some positive data exist, but the data are not sufficient for classification

### Carcinogenicity

Name	Route	Species	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
n-Butyl Glycidyl Ether	Ingestion	Multiple animal species	Carcinogenic.
Silane, trimethoxyoctyl-, hydrolysis products with silica	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Resorcinol	Ingestion	Multiple animal species	Not carcinogenic
Quartz	Inhalation	Human and animal	Carcinogenic.

### Reproductive Toxicity

#### Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
n-Butyl Glycidyl Ether	Inhalation	Not classified for male reproduction	Rat	NOAEL 0.2 mg/l	10 weeks

n-Butyl Glycidyl Ether	Ingestion	Toxic to development	Rat	NOAEL 100 mg/kg/day	during gestation
Silane, trimethoxyoctyl-, hydrolysis products with silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Silane, trimethoxyoctyl-, hydrolysis products with silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Silane, trimethoxyoctyl-, hydrolysis products with silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
Resorcinol	Ingestion	Not classified for female reproduction	Rat	NOAEL 304 mg/kg/day	2 generation
Resorcinol	Ingestion	Not classified for male reproduction	Rat	NOAEL 223 mg/kg/day	2 generation
Resorcinol	Ingestion	Not classified for development	Rat	NOAEL 250 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
n-Butyl Glycidyl Ether	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
Resorcinol	Dermal	heart   endocrine system   blood   methemoglobinemia   liver   nervous system   kidney and/or bladder   respiratory system	Not classified	Human	NOAEL Not available	
Resorcinol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Resorcinol	Ingestion	nervous system	Causes damage to organs	Rat	NOAEL 27.5 mg/kg	
Resorcinol	Ingestion	methemoglobinemia	Not classified	Human	NOAEL Not available	

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
4,4'-isopropylidenediphenol-epichlorohydrin polymer	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
Aluminum Pigments	Inhalation	nervous system   respiratory system	Not classified	Human	NOAEL Not available	occupational exposure
n-Butyl Glycidyl Ether	Dermal	liver	Not classified	Rat	LOAEL 100 mg/kg/day	28 days
n-Butyl Glycidyl Ether	Inhalation	kidney and/or bladder   respiratory system	Not classified	Rat	NOAEL 1.6 mg/l	50 days
n-Butyl Glycidyl Ether	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 1 mg/l	28 days
n-Butyl Glycidyl Ether	Inhalation	liver	Not classified	Rat	NOAEL 0.8 mg/l	50 days

Silane, trimethoxyoctyl-, hydrolysis products with silica	Inhalation	respiratory system   silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Resorcinol	Inhalation	respiratory system	Not classified	Rat	NOAEL 1 mg/l	14 days
Resorcinol	Ingestion	heart   skin   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 250 mg/kg/day	13 weeks
Quartz	Inhalation	silicosis	Causes damage to organs through prolonged or repeated exposure	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 labelling, 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 1: Very toxic to aquatic life with long lasting effects.

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
4,4'-isopropylidenediph enol-epichlorohydrin polymer	25068-38-6	Activated sludge	Estimated	3 hours	IC50	>100 mg/l
4,4'-isopropylidenediph enol-epichlorohydrin polymer	25068-38-6	Green algae	Estimated	72 hours	EC50	>11 mg/l
4,4'-isopropylidenediph enol-epichlorohydrin polymer	25068-38-6	Rainbow trout	Estimated	96 hours	LC50	2 mg/l
4,4'-	25068-38-6	Water flea	Estimated	48 hours	EC50	1.8 mg/l

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isopropylidenediph enol-epichlorohydrin polymer						
4,4'-isopropylidenediph enol-epichlorohydrin polymer	25068-38-6	Green algae	Estimated	72 hours	NOEC	4.2 mg/l
4,4'-isopropylidenediph enol-epichlorohydrin polymer	25068-38-6	Water flea	Estimated	21 days	NOEC	0.3 mg/l
Aluminum Pigments	7429-90-5	Fish	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
Aluminum Pigments	7429-90-5	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
Aluminum Pigments	7429-90-5	Water flea	Experimental	48 hours	No tox obs at lmt of water sol	>100 mg/l
Aluminum Pigments	7429-90-5	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	100 mg/l
Aluminum Pigments	7429-90-5	Water flea	Experimental	21 days	NOEC	0.076 mg/l
Clay	68953-58-2	Activated sludge	Estimated	3 hours	EC50	>300 mg/l
Clay	68953-58-2	Green algae	Estimated	72 hours	EC50	>100 mg/l
Clay	68953-58-2	Water flea	Estimated	48 hours	EC50	>100 mg/l
Clay	68953-58-2	Zebra Fish	Estimated	96 hours	LC50	>100 mg/l
n-Butyl Glycidyl Ether	2426-08-6	Green algae	Experimental	96 hours	ErC50	35 mg/l
n-Butyl Glycidyl Ether	2426-08-6	Rainbow trout	Experimental	96 hours	LC50	65 mg/l
n-Butyl Glycidyl Ether	2426-08-6	Water flea	Experimental	48 hours	EC50	9.2 mg/l
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Green algae	Analogous Compound	72 hours	ErC50	>173.1 mg/l
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Sediment organism	Analogous Compound	96 hours	EC50	8,500 mg/kg (Dry Weight)
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Water flea	Analogous Compound	24 hours	EL50	>10,000 mg/l
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Zebra Fish	Analogous Compound	96 hours	LL50	>10,000 mg/l
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Green algae	Analogous Compound	72 hours	NOEC	173.1 mg/l
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Water flea	Analogous Compound	21 days	NOEC	68 mg/l
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Activated sludge	Experimental	3 hours	EC50	>1,000 mg/l
Resorcinol	108-46-3	Activated sludge	Experimental	3 hours	EC50	79 mg/l
Resorcinol	108-46-3	Fathead minnow	Experimental	96 hours	LC50	26.8 mg/l
Resorcinol	108-46-3	Grass Shrimp	Experimental	96 hours	LC50	42.2 mg/l
Resorcinol	108-46-3	Green algae	Experimental	72 hours	ErC50	97 mg/l
Resorcinol	108-46-3	Water flea	Experimental	48 hours	EC50	1 mg/l
Resorcinol	108-46-3	Green algae	Experimental	72 hours	NOEC	97 mg/l

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Resorcinol	108-46-3	Water flea	Experimental	21 days	NOEC	0.172 mg/l
Quartz	14808-60-7	Green algae	Estimated	72 hours	EC50	440 mg/l
Quartz	14808-60-7	Water flea	Estimated	48 hours	EC50	7,600 mg/l
Quartz	14808-60-7	Zebra Fish	Estimated	96 hours	LC50	5,000 mg/l
Quartz	14808-60-7	Green algae	Estimated	72 hours	NOEC	60 mg/l
Copper	7440-50-8	Green algae	Analogous Compound	72 hours	ErC50	0.1049 mg/l
Copper	7440-50-8	Water flea	Analogous Compound	48 hours	EC50	0.0126 mg/l
Copper	7440-50-8	Zebra Fish	Analogous Compound	96 hours	LC50	0.0117 mg/l
Copper	7440-50-8	Fathead minnow	Analogous Compound	32 days	EC10	0.0059 mg/l
Copper	7440-50-8	Green algae	Analogous Compound	N/A	NOEC	0.022 mg/l
Copper	7440-50-8	Water flea	Analogous Compound	7 days	NOEC	0.004 mg/l
Copper	7440-50-8	Activated sludge	Analogous Compound	N/A	EC50	7 mg/l

**12.2. Persistence and degradability**

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
4,4'-isopropylidenediph enol-epichlorohydrin polymer	25068-38-6	Estimated Biodegradation	28 days	BOD	5 %BOD/COD	OECD 301F - Manometric respirometry
4,4'-isopropylidenediph enol-epichlorohydrin polymer	25068-38-6	Estimated Hydrolysis		Hydrolytic half-life	117 hours (t 1/2)	
Aluminum Pigments	7429-90-5	Data not available-insufficient	N/A	N/A	N/A	N/A
Clay	68953-58-2	Estimated Biodegradation	28 days	BOD	3 %BOD/ThOD	OECD 301D - Closed bottle test
n-Butyl Glycidyl Ether	2426-08-6	Experimental Biodegradation	28 days	BOD	25 %BOD/ThOD	OECD 301D - Closed bottle test
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Data not available-insufficient	N/A	N/A	N/A	N/A
Resorcinol	108-46-3	Experimental Aquatic Inherent Biodegrad.	4 days	Dissolv. Organic Carbon Deplet	97 %removal of DOC	
Resorcinol	108-46-3	Experimental Biodegradation	14 days	BOD	66.7 %BOD/ThOD	OECD 301C - MITI test (I)
Quartz	14808-60-7	Data not available-insufficient	N/A	N/A	N/A	N/A
Copper	7440-50-8	Data not available-insufficient	N/A	N/A	N/A	N/A

**12.3 : Bioaccumulative potential**

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
4,4'-isopropylidenediph enol-	25068-38-6	Estimated Bioconcentration		Log Kow	3.242	

epichlorohydrin polymer						
Aluminum Pigments	7429-90-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Clay	68953-58-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
n-Butyl Glycidyl Ether	2426-08-6	Experimental Bioconcentration		Log Kow	0.63	
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Resorcinol	108-46-3	Experimental Bioconcentration		Log Kow	0.8	
Quartz	14808-60-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Copper	7440-50-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

**12.4. Mobility in soil**

Please contact manufacturer for more details

**12.5 Other adverse effects**

No information available.

**SECTION 13: Disposal considerations**

**13.1. Disposal methods**

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

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

**SECTION 14: Transport Information**

**International Regulations**

UN No.: None assigned

UN Proper shipping name: None assigned

Transportation Class (IMO): None assigned

Transportation Class (IATA): None assigned

Other Dangerous Goods Descriptions (IMO): None assigned

Other Dangerous Goods Descriptions (IATA): None assigned

Packing Group: None assigned

Marine pollutant: None assigned

**SECTION 15: Regulatory information**

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

### **Global inventory status**

Contact 3M for more information. The components of this material are in compliance with the provisions of the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Japan Chemical Substance Control Law. Certain restrictions may apply. Contact the selling division for additional information. 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.

### **This product may contain component(s) that are regulated by the following:**

Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations: this product is subject to SDS, labelling, PEL and other requirements in the Act/Regulations.

Environmental Protection and Management (Hazardous Substances) Regulations: This product is subject to the requirements in the Regulations

## **SECTION 16: Other information**

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

**3M Singapore SDSs are available at [www.3m.com.sg](http://www.3m.com.sg)**



## Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the SS586 Specification for Hazard Communication for Hazardous Chemicals and Dangerous Goods.

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### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Scotch-Weld™ Epoxy Adhesive EC-1751 B/A Part A

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

##### Recommended use

Accelerator for 2-Part Epoxy Adhesive, Industrial use.

#### 1.3. Supplier's details

**Address:** 3M Technologies (S) Pte Ltd, 10 Ang Mo Kio Street 65, Singapore 569059  
**Telephone:** +65 6450 8888  
**Website:** www.3m.com.sg

#### 1.4. Emergency telephone number

+65 6591 6601 (8.15am - 5.00pm, Monday - Friday)

### SECTION 2: Hazard identification

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

Skin Corrosion/Irritation: Category 2.

Serious Eye Damage/Irritation: Category 1.

Skin Sensitizer: Category 1.

Chronic Aquatic Toxicity: Category 2.

#### 2.2. Label elements

##### SIGNAL WORD

DANGER!

##### Symbols

Corrosion | Exclamation mark | Environment |

##### Pictograms



**HAZARD STATEMENTS**

- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- 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.
- P280B Wear protective gloves and eye/face protection.

**Response:**

- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 Immediately call a POISON CENTER or doctor/physician.
- P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
- P391 Collect spillage.

**2.3. Other hazards**

Persons previously sensitised to amines may develop a cross-sensitisation reaction to certain other amines. The principle of dilution was used to bridge test results for skin corrosion/irritation. The test results are reflected in the assigned classification.

**SECTION 3: Composition/information on ingredients**

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
Polyamide Resin	68410-23-1	60 - 90
Clay	68953-58-2	7 - 13
Triethylenetetramine	112-24-3	2 - 10
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	1 - 5
Quartz	14808-60-7	<= 0.25

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**Inhalation**

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

**Skin contact**

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

**Eye contact**

Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

**If swallowed**

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

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

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

**4.3. Indication of any immediate medical attention and special treatment required**

Not applicable

**SECTION 5: Fire-fighting measures**

**5.1. Suitable extinguishing media**

In case of fire: Use a 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

Carbon monoxide.  
Carbon dioxide.

Condition

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**

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 authorised person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and Safety Data Sheet. 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**

Avoid breathing dust/fume/gas/mist/vapours/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 oxidising agents (eg. chlorine, chromic acid etc.)

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

Store away from acids. Store away from strong bases. Store away from oxidising 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	CAS Nbr	Agency	Limit type	Additional comments
Triethylenetetramine	112-24-3	AIHA	TWA:6 mg/m <sup>3</sup> (1 ppm)	SKIN
Quartz	14808-60-7	ACGIH	TWA(respirable fraction):0.025 mg/m <sup>3</sup>	A2: Suspected human carcin.
Quartz	14808-60-7	Singapore PELs	TWA(as respirable dust)(8 hours):0.1 mg/m <sup>3</sup>	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

Singapore PELs : Singapore. Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CELL: 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/vapours/spray. If ventilation is not adequate, use respiratory protection equipment.

#### 8.2.2. Personal protective equipment (PPE)

##### Eye/face protection

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

Full face shield.

Indirect vented goggles.

##### Skin/hand protection

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

Gloves made from the following material(s) are recommended: Polymer laminate

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an 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 vapours and particulates

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

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Paste
Color	Orange-Amber
Odor	Pungent Amine
Odour threshold	<i>No data available.</i>
pH	<i>Not applicable.</i>
Melting point/Freezing point	<i>Not applicable.</i>
Boiling point/Initial boiling point/Boiling range	$\geq 260$ °C
Flash point	$\geq 260$ °C [Test Method: Closed Cup]
Evaporation rate	<i>Not applicable.</i>
Flammability	Not applicable.
Flammable Limits(LEL)	<i>No data available.</i>
Flammable Limits(UEL)	<i>No data available.</i>
Vapour pressure	<i>No data available.</i>
Vapor Density and/or Relative Vapor Density	<i>Not applicable.</i>
Density	0.95 g/ml
Relative density	0.95 [Ref Std: WATER=1]
Water solubility	Slight (less than 10%)
Solubility- non-water	<i>No data available.</i>
Partition coefficient: n-octanol/water	<i>No data available.</i>
Autoignition temperature	<i>Not applicable.</i>
Decomposition temperature	<i>No data available.</i>
Kinematic Viscosity	289,474 mm <sup>2</sup> /sec
Percent volatile	0 % weight
Molecular weight	<i>No data available.</i>

Particle Characteristics	<i>Not applicable.</i>
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## 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 polymerisation will not occur.

### 10.4 Conditions to avoid

Not determined

### 10.5 Incompatible materials

Strong acids.

Strong bases.

Strong oxidising 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 labelling, 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**

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

**Ingestion**

Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea.

**Additional information:**

Persons previously sensitised to amines may develop a cross-sensitisation 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 >5,000 mg/kg
Polyamide Resin	Dermal	Rat	LD50 > 2,000 mg/kg
Polyamide Resin	Ingestion	Rat	LD50 > 2,000 mg/kg
Triethylenetetramine	Dermal	Rabbit	LD50 1,465 mg/kg
Triethylenetetramine	Ingestion	Rat	LD50 1,591 mg/kg
Clay	Dermal		LD50 estimated to be > 5,000 mg/kg
Clay	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 12.6 mg/l
Clay	Ingestion	Rat	LD50 > 5,000 mg/kg

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Silane, trimethoxyoctyl-, hydrolysis products with silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Silane, trimethoxyoctyl-, hydrolysis products with silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Silane, trimethoxyoctyl-, hydrolysis products with silica	Ingestion	Rat	LD50 > 5,110 mg/kg
Quartz	Dermal		LD50 estimated to be > 5,000 mg/kg
Quartz	Ingestion		LD50 estimated to be > 5,000 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
Polyamide Resin	In vitro data	Irritant
Triethylenetetramine	Rabbit	Corrosive
Clay	Rat	No significant irritation
Silane, trimethoxyoctyl-, hydrolysis products with silica	Rabbit	No significant irritation
Quartz	Professional judgement	No significant irritation

**Serious Eye Damage/Irritation**

Name	Species	Value
Polyamide Resin	Rabbit	Corrosive
Triethylenetetramine	Rabbit	Corrosive
Clay	Rabbit	No significant irritation
Silane, trimethoxyoctyl-, hydrolysis products with silica	Rabbit	No significant irritation

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

Name	Species	Value
Polyamide Resin	Mouse	Sensitising
Triethylenetetramine	Guinea pig	Sensitising
Silane, trimethoxyoctyl-, hydrolysis products with silica	Human and animal	Not classified

**Respiratory Sensitisation**

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

**Germ Cell Mutagenicity**

Name	Route	Value
Polyamide Resin	In Vitro	Not mutagenic
Triethylenetetramine	In vivo	Not mutagenic
Triethylenetetramine	In Vitro	Some positive data exist, but the data are not sufficient for classification
Silane, trimethoxyoctyl-, hydrolysis products with silica	In Vitro	Not mutagenic
Quartz	In Vitro	Some positive data exist, but the data are not sufficient for classification
Quartz	In vivo	Some positive data exist, but the data are not sufficient for classification

**Carcinogenicity**

Name	Route	Species	Value
Triethylenetetramine	Dermal	Mouse	Not carcinogenic

Silane, trimethoxyoctyl-, hydrolysis products with silica	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Quartz	Inhalation	Human and animal	Carcinogenic.

**Reproductive Toxicity**

**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test result	Exposure Duration
Polyamide Resin	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
Polyamide Resin	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	6 weeks
Polyamide Resin	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
Triethylenetetramine	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	during organogenesis
Silane, trimethoxyoctyl-, hydrolysis products with silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Silane, trimethoxyoctyl-, hydrolysis products with silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Silane, trimethoxyoctyl-, hydrolysis products with silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis

**Target Organ(s)**

**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Polyamide Resin	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Triethylenetetramine	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Polyamide Resin	Ingestion	heart   liver   immune system   endocrine system   gastrointestinal tract   bone, teeth, nails, and/or hair   hematopoietic system   nervous system   kidney and/or bladder   respiratory system   vascular system	Not classified	Rat	NOAEL 1,000 mg/kg/day	6 weeks
Silane, trimethoxyoctyl-, hydrolysis products with silica	Inhalation	respiratory system   silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Quartz	Inhalation	silicosis	Causes damage to organs through prolonged or repeated exposure	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 labelling, 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 Nbr	Organism	Type	Exposure	Test endpoint	Test result
Polyamide Resin	68410-23-1	Green algae	Estimated	72 hours	EC50	4.34 mg/l
Polyamide Resin	68410-23-1	Water flea	Estimated	48 hours	EC50	7.07 mg/l
Polyamide Resin	68410-23-1	Zebra Fish	Estimated	96 hours	LC50	7.07 mg/l
Polyamide Resin	68410-23-1	Activated sludge	Experimental	3 hours	EC50	314 mg/l
Polyamide Resin	68410-23-1	Bacteria	Experimental	N/A	NOEC	>100 mg/l
Polyamide Resin	68410-23-1	Green algae	Estimated	72 hours	EC10	1.78 mg/l
Polyamide Resin	68410-23-1	Water flea	Estimated	48 hours	EC50	7.07 mg/l
Clay	68953-58-2	Activated sludge	Estimated	3 hours	EC50	>300 mg/l
Clay	68953-58-2	Green algae	Estimated	72 hours	EC50	>100 mg/l
Clay	68953-58-2	Water flea	Estimated	48 hours	EC50	>100 mg/l
Clay	68953-58-2	Zebra Fish	Estimated	96 hours	LC50	>100 mg/l
Triethylenetetramine	112-24-3	Fathead minnow	Experimental	96 hours	LC50	330 mg/l
Triethylenetetramine	112-24-3	Green algae	Experimental	72 hours	ErC50	20 mg/l
Triethylenetetramine	112-24-3	Water flea	Experimental	48 hours	EC50	31.1 mg/l
Triethylenetetramine	112-24-3	Green algae	Experimental	72 hours	ErC10	1.34 mg/l
Triethylenetetramine	112-24-3	Water flea	Experimental	21 days	EC10	1.9 mg/l
Triethylenetetramine	112-24-3	Bacteria	Experimental	2 hours	EC50	15.7 mg/l
Triethylenetetramine	112-24-3	Redworm	Experimental	56 days	EC10	31.1 mg/l
Triethylenetetramine	112-24-3	Soil microbes	Experimental	28 days	EC50	>100 mg/kg (Dry Weight)
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Green algae	Analogous Compound	72 hours	ErC50	>173.1 mg/l
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Sediment organism	Analogous Compound	96 hours	EC50	8,500 mg/kg (Dry Weight)
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Water flea	Analogous Compound	24 hours	EL50	>10,000 mg/l

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Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Zebra Fish	Analogous Compound	96 hours	LL50	>10,000 mg/l
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Green algae	Analogous Compound	72 hours	NOEC	173.1 mg/l
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Water flea	Analogous Compound	21 days	NOEC	68 mg/l
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Activated sludge	Experimental	3 hours	EC50	>1,000 mg/l
Quartz	14808-60-7	Green algae	Estimated	72 hours	EC50	440 mg/l
Quartz	14808-60-7	Water flea	Estimated	48 hours	EC50	7,600 mg/l
Quartz	14808-60-7	Zebra Fish	Estimated	96 hours	LC50	5,000 mg/l
Quartz	14808-60-7	Green algae	Estimated	72 hours	NOEC	60 mg/l

**12.2. Persistence and degradability**

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Polyamide Resin	68410-23-1	Estimated Biodegradation	28 days	BOD	15 %BOD/ThOD	OECD 301D - Closed bottle test
Clay	68953-58-2	Estimated Biodegradation	28 days	BOD	3 %BOD/ThOD	OECD 301D - Closed bottle test
Triethylenetetramine	112-24-3	Experimental Aquatic Inherent Biodegrad.	84 days	Dissolv. Organic Carbon Deplet	20 %removal of DOC	OECD 302A - Modified SCAS Test
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Data not available-insufficient	N/A	N/A	N/A	N/A
Quartz	14808-60-7	Data not available-insufficient	N/A	N/A	N/A	N/A

**12.3 : Bioaccumulative potential**

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Polyamide Resin	68410-23-1	Estimated Bioconcentration		Log Kow	≤3.55	
Clay	68953-58-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Triethylenetetramine	112-24-3	Estimated Bioconcentration		Log Kow	<-2	
Silane, trimethoxyoctyl-, hydrolysis products with silica	112945-52-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Quartz	14808-60-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

**12.4. Mobility in soil**

Please contact manufacturer for more details

**12.5 Other adverse effects**

No information available.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

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

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

## SECTION 14: Transport Information

### International Regulations

UN No.: None assigned

UN Proper shipping name: None assigned

Transportation Class (IMO): None assigned

Transportation Class (IATA): None assigned

Other Dangerous Goods Descriptions (IMO): None assigned

Other Dangerous Goods Descriptions (IATA): None assigned

Packing Group: None assigned

Marine pollutant: None assigned

## 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 Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Japan Chemical Substance Control Law. Certain restrictions may apply. Contact the selling division for additional information. 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.

#### This product may contain component(s) that are regulated by the following:

Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations: this product is subject to SDS, labelling, PEL and other requirements in the Act/Regulations.

## SECTION 16: Other information

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

satisfy themselves as to the suitability of the product for their own intended applications.

**3M Singapore SDSs are available at [www.3m.com.sg](http://www.3m.com.sg)**