Safety Data Sheet

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Issue Date:	04/09/2024	**Supercedes Date:**	21/08/2019

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

IDENTIFICATION

1.1. Product identifier
3M™ Scotch-Weld™ Epoxy Adhesive 1751 B/A Gray

Product Identification Numbers
62-1751-0535-2 62-1751-7430-9

1.2. Recommended use and restrictions on use

Recommended use
Structural adhesive

1.3. Supplier's details

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

1.4. Emergency telephone number
+60 03-7884 2888

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

10-3128-5, 10-3135-0

TRANSPORT INFORMATION

This product is a kit that consists of two or more different regulated materials packed in the same outer packaging (ship unit). The transportation classifications of the individual components appear in Section 14 of the attached SDSs.
Transportation classifications are provided as a customer service. As for shipping, YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M's transportation classifications are based on product formulation, packaging, 3M policies and 3M's understanding of applicable current

regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and not the packaging, labeling or marking requirements. The above information is only for reference. If you are shipping by air or ocean, YOU are advised to check & meet applicable regulatory requirements.

DISCLAIMER: The information in this Safety Data Sheet (SDS) is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this SDS or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own evaluation to satisfy themselves as to the suitability of the product for their own intended applications. In addition, this SDS is being provided to convey health and safety information. If you are the importer of record of this product into Malaysia, you are responsible for all applicable regulatory requirements, including, but not limited to, product registrations/notifications, substance volume tracking, and potential substance registration/notification.

3M Malaysia SDSs are available at www.3M.com.my

Safety Data Sheet

Document Group:	10-3135-0	**Version Number:**	7.00
Issue Date:	02/09/2024	**Supercedes Date:**	19/08/2019

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

SECTION 1: Identification

1.1. Product identifier
3M™ Scotch-Weld™ Epoxy Adhesive 1751 Gray Part A

1.2. Recommended use and restrictions on use

Recommended use
Structural adhesive

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

1.4. Emergency telephone number
+60 03-7884 2888

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.

Disposal:

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

2.3. Other hazards

Persons previously sensitized to amines may develop a cross-sensitization reaction to certain other amines., 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	C.A.S. No.	% by Wt
Polyamide Resin	68410-23-1	60 - 90
Triethylenetetramine	112-24-3	1 - 10
Clay	Trade Secret	1 - 10
Amorphous Silica	112945-52-5	1 - 5
Quartz Silica	14808-60-7	< 0.3

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 fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion

5.3. Special protective actions for fire-fighters
Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up
Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
For industrial/occupational use only. Not for consumer sale or use. 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 in a well-ventilated place. Keep container tightly closed. Protect from sunlight. Store away from heat. Store away from acids. Store away from strong bases. 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
Quartz Silica	14808-60-7	ACGIH	TWA(respirable fraction):0.025 mg/m3	A2: Suspected human carcin.
Quartz Silica	14808-60-7	Malaysia OELs	TWA(respirable fraction)(8 hours):0.1 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
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

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

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

Respiratory protection

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

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Specific Physical Form:	Paste
Color	Amber
Odor	Moderate Amine
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*Not Applicable*
Boiling point/Initial boiling point/Boiling range	>=260 ºC
Flash Point	>=260 ºC [*Test Method:*Closed Cup]
Evaporation rate	*Not Applicable*
Flammability	Not Applicable
Flammable Limits(LEL)	*Not Applicable*
Flammable Limits(UEL)	*Not Applicable*
Vapor Pressure	*Not Applicable*
Vapor Density and/or Relative Vapor Density	*Not Applicable*
Density	0.95 g/ml
Relative Density	0.95 [*Ref Std:*WATER=1]
Water solubility	Nil
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*Not Applicable*
Decomposition temperature	*No Data Available*
Kinematic Viscosity	289,474 mm2/sec
Volatile Organic Compounds	*No Data Available*
Percent volatile	*No Data Available*
VOC Less H2O & Exempt Solvents	8.6 g/l [*Test Method:*calculated SCAQMD rule 443.1] [*Details:*when used as intended with Part B]
VOC Less H2O & Exempt Solvents	0 g/l [*Test Method:*calculated SCAQMD rule 443.1] [*Details:*as supplied]
VOC Less H2O & Exempt Solvents	0.7 % [*Test Method:*calculated per CARB title 2] [*Details:*when used as intended with Part B]
Molecular weight	*No Data Available*

Particle Characteristics	*Not Applicable*

SECTION 10: Stability and reactivity

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

10.2. Chemical stability
Stable.

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

10.4. Conditions to avoid
Heat 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 bases
Strong oxidizing agents

10.6. Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

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 diarrhea.

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 >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
Amorphous Silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Amorphous Silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Amorphous Silica	Ingestion	Rat	LD50 > 5,110 mg/kg
Quartz Silica	Dermal		LD50 estimated to be > 5,000 mg/kg
Quartz Silica	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
Amorphous Silica	Rabbit	No significant irritation
Quartz Silica	Professional judgement	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Polyamide Resin	Rabbit	Corrosive
Triethylenetetramine	Rabbit	Corrosive
Clay	Rabbit	No significant irritation
Amorphous Silica	Rabbit	No significant irritation

Sensitization:

Skin Sensitization

Name	Species	Value
Polyamide Resin	Mouse	Sensitizing
Triethylenetetramine	Guinea pig	Sensitizing
Amorphous Silica	Human and animal	Not classified

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
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
Amorphous Silica	In Vitro	Not mutagenic
Quartz Silica	In Vitro	Some positive data exist, but the data are not sufficient for classification
Quartz Silica	In vivo	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Triethylenetetramine	Dermal	Mouse	Not carcinogenic
Amorphous Silica	Not Specified	Mouse	Some positive data exist, but the data are not sufficient for classification
Quartz Silica	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
Amorphous Silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Amorphous Silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Amorphous Silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
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 |	Not classified	Rat	NOAEL 1,000 mg/kg/day	6 weeks

		respiratory system | vascular system				
Amorphous Silica	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Quartz Silica	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 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
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	Trade Secret	Activated sludge	Estimated	3 hours	EC50	>300 mg/l
Clay	Trade Secret	Green algae	Estimated	72 hours	EC50	>100 mg/l
Clay	Trade Secret	Water flea	Estimated	48 hours	EC50	>100 mg/l
Clay	Trade Secret	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)
Amorphous Silica	112945-52-5	Green algae	Analogous Compound	72 hours	ErC50	>173.1 mg/l

Amorphous Silica	112945-52-5	Sediment organism	Analogous Compound	96 hours	EC50	8,500 mg/kg (Dry Weight)
Amorphous Silica	112945-52-5	Water flea	Analogous Compound	24 hours	EL50	>10,000 mg/l
Amorphous Silica	112945-52-5	Zebra Fish	Analogous Compound	96 hours	LL50	>10,000 mg/l
Amorphous Silica	112945-52-5	Green algae	Analogous Compound	72 hours	NOEC	173.1 mg/l
Amorphous Silica	112945-52-5	Water flea	Analogous Compound	21 days	NOEC	68 mg/l
Amorphous Silica	112945-52-5	Activated sludge	Experimental	3 hours	EC50	>1,000 mg/l
Quartz Silica	14808-60-7	Green algae	Estimated	72 hours	EC50	440 mg/l
Quartz Silica	14808-60-7	Water flea	Estimated	48 hours	EC50	7,600 mg/l
Quartz Silica	14808-60-7	Zebra Fish	Estimated	96 hours	LC50	5,000 mg/l
Quartz Silica	14808-60-7	Green algae	Estimated	72 hours	NOEC	60 mg/l

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Polyamide Resin	68410-23-1	Estimated Biodegradation	28 days	Biological Oxygen Demand	15 %BOD/ThOD	OECD 301D - Closed Bottle Test
Clay	Trade Secret	Estimated Biodegradation	28 days	Biological Oxygen Demand	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
Amorphous Silica	112945-52-5	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Quartz Silica	14808-60-7	Data not availbl-insufficient	N/A	N/A	N/A	N/A

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Polyamide Resin	68410-23-1	Estimated Bioconcentration		Log of Octanol/H2O part. coeff	≤3.55	
Clay	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Triethylenetetramine	112-24-3	Estimated Bioconcentration		Log of Octanol/H2O part. coeff	<-2	
Amorphous Silica	112945-52-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Quartz Silica	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

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:UN1993
Proper Shipping Name:FLAMMABLE LIQUID, N.O.S.
Technical Name: None assigned.
Hazard Class/Division:3
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:UN1993
Proper Shipping Name:FLAMMABLE LIQUID, N.O.S.
Technical Name: None assigned.
Hazard Class/Division:3
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 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.

SECTION 16: Other information

DISCLAIMER: The information in this Safety Data Sheet (SDS) is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this SDS or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own evaluation to satisfy themselves as to the suitability of the product for their own intended applications. In addition, this SDS is being provided to convey health and safety information. If you are the importer of record of this product into Malaysia, you are responsible for all applicable regulatory requirements, including, but not limited to, product registrations/notifications, substance volume tracking, and potential substance registration/notification.

3M Malaysia SDSs are available at www.3M.com.my

Safety Data Sheet

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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™ Epoxy Adhesive 1751 Gray Part B

1.2. Recommended use and restrictions on use

Recommended use
Structural adhesive

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

1.4. Emergency telephone number
+60 03-7884 2888

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Serious Eye Damage/Irritation: Category 2.
Skin Sensitizer: Category 1.
Germ Cell Mutagenicity: Category 2.
Carcinogenicity: Category 2.
Reproductive Toxicity: 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.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
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/vapors/spray.
P273	Avoid release to the environment.
P280E	Wear protective gloves.
P281	Use personal protective equipment as required.

Response:

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
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
Epoxy Resin	25068-38-6	35 - 70
Aluminum Pigments	7429-90-5	15 - 40
n-Butyl Glycidyl Ether	2426-08-6	1 - 10
Clay	Trade Secret	1 - 10
Amorphous Silica	112945-52-5	1 - 5
Resorcinol	108-46-3	0.5 - 1.5
Quartz Silica	14808-60-7	< 0.3
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

Substance	Condition
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. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up
Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed

container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
For industrial/occupational use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight. Store away from heat. 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
Resorcinol	108-46-3	ACGIH	TWA:10 ppm;STEL:20 ppm	A4: Not class. as human carcin
Resorcinol	108-46-3	Malaysia OELs	TWA(8 hours):45 mg/m3(10 ppm)	
Quartz Silica	14808-60-7	ACGIH	TWA(respirable fraction):0.025 mg/m3	A2: Suspected human carcin.
Quartz Silica	14808-60-7	Malaysia OELs	TWA(respirable fraction)(8 hours):0.1 mg/m3	
n-Butyl Glycidyl Ether	2426-08-6	ACGIH	TWA:3 ppm	SKIN; Dermal sensitizer
n-Butyl Glycidyl Ether	2426-08-6	Malaysia OELs	TWA(8 hours):133 mg/m3(25 ppm)	
Aluminum Pigments	7429-90-5	ACGIH	TWA(respirable fraction):1 mg/m3	A4: Not class. as human carcin
Aluminum Pigments	7429-90-5	Malaysia OELs	TWA(as dust)(8 hours):10 mg/m3;TWA(Al, welding fume)(8 hours):5 mg/m3;TWA(as Al pyrophoric powder)(8 hours):5 mg/m3	
DUST, INERT OR NUISANCE	7429-90-5	Malaysia OELs	TWA (proposed)(respirable particles)(8 hours):3 mg/m3;TWA (proposed)(Inhalable particulate)(8 hours):10 mg/m3	
COPPER	7440-50-8	Malaysia OELs	TWA(as fume)(8 hours):0.2 mg/m3;TWA(as Cu dust or mist)(8 hours):1 mg/m3	
COPPER, DUSTS AND MISTS,	7440-50-8	ACGIH	TWA(as Cu dust or mist):1	

AS CU			mg/m3	
COPPER, FUME AS CU	7440-50-8	ACGIH	TWA(as Cu, fume):0.2 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
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:
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

Respiratory protection

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

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Specific Physical Form:	Paste
Color	Gray
Odor	Mild Epoxy
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*Not Applicable*
Boiling point/Initial boiling point/Boiling range	>=164 ºC [*Details:*n-Butyl Glycidyl Ether]
Flash Point	93.9 ºC [*Test Method:*Closed Cup]
Evaporation rate	*No Data Available*
Flammability	Not Applicable

Flammable Limits(LEL)	*Not Applicable*
Flammable Limits(UEL)	*Not Applicable*
Vapor Pressure	*Not Applicable*
Vapor Density and/or Relative Vapor Density	*Not Applicable*
Density	1.3 g/ml
Relative Density	1.3 [*Ref Std:*WATER=1]
Water solubility	Nil
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*No Data Available*
Kinematic Viscosity	76,923 mm2/sec
Volatile Organic Compounds	*No Data Available*
Percent volatile	*No Data Available*
VOC Less H2O & Exempt Solvents	8.6 g/l [*Test Method:*calculated SCAQMD rule 443.1] [*Details:*when used as intended with Part A]
VOC Less H2O & Exempt Solvents	231 g/l [*Test Method:*calculated SCAQMD rule 443.1] [*Details:*as supplied]
VOC Less H2O & Exempt Solvents	0.7 % [*Test Method:*calculated SCAQMD rule 443.1] [*Details:*when used as intended with Part A]
Molecular weight	*No Data Available*

Particle Characteristics	*Not Applicable*

SECTION 10: Stability and reactivity

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

10.2. Chemical stability
Stable.

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

10.4. Conditions to avoid
Heat 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 oxidizing agents

10.6. Hazardous decomposition products

Substance	**Condition**
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be

reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

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 diarrhea.

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/or 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
Epoxy Resin	Dermal	Rat	LD50 > 1,600 mg/kg
Epoxy Resin	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-Dust/Mist (4 hours)	Rat	LC50 14 mg/l
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
Amorphous Silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Amorphous Silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Amorphous Silica	Ingestion	Rat	LD50 > 5,110 mg/kg
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 Silica	Dermal		LD50 estimated to be > 5,000 mg/kg
Quartz Silica	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
Epoxy Resin	Rabbit	Mild irritant
Aluminum Pigments	Rabbit	No significant irritation
Clay	Rat	No significant irritation
n-Butyl Glycidyl Ether	Rabbit	Mild irritant
Amorphous Silica	Rabbit	No significant irritation
Resorcinol	Rabbit	Minimal irritation
Quartz Silica	Professional judgement	No significant irritation
COPPER	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Epoxy Resin	Rabbit	Moderate irritant
Aluminum Pigments	Rabbit	No significant irritation
Clay	Rabbit	No significant irritation
n-Butyl Glycidyl Ether	Rabbit	Severe irritant
Amorphous Silica	Rabbit	No significant irritation
Resorcinol	Rabbit	Corrosive
COPPER	Rabbit	Mild irritant

Sensitization:

Skin Sensitization

Name	Species	Value
Epoxy Resin	Human and animal	Sensitizing
Aluminum Pigments	Guinea pig	Not classified
n-Butyl Glycidyl Ether	Multiple animal species	Sensitizing
Amorphous Silica	Human and animal	Not classified
Resorcinol	Multiple animal species	Sensitizing

Respiratory Sensitization

Name	Species	Value
Epoxy Resin	Human	Not classified
Aluminum Pigments	Human	Not classified

Germ Cell Mutagenicity

Name	Route	Value
Epoxy Resin	In vivo	Not mutagenic
Epoxy Resin	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
Amorphous 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 Silica	In Vitro	Some positive data exist, but the data are not sufficient for classification
Quartz Silica	In vivo	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Epoxy Resin	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
n-Butyl Glycidyl Ether	Ingestion	Multiple animal species	Carcinogenic
Amorphous Silica	Not Specified	Mouse	Some positive data exist, but the data are not sufficient for classification
Resorcinol	Ingestion	Multiple animal species	Not carcinogenic
Quartz Silica	Inhalation	Human and animal	Carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Epoxy Resin	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
Epoxy Resin	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
Epoxy Resin	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
Epoxy Resin	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
Amorphous Silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Amorphous Silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Amorphous Silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
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
Epoxy Resin	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
Epoxy Resin	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Epoxy Resin	Ingestion	auditory system | heart | endocrine system | hematopoietic system | liver | eyes |	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days

		kidney and/or bladder				
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
Amorphous 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 Silica	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 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 1: Very toxic to aquatic life with long lasting effects.

No product test data available

Material	Cas #	Organism	Type	Exposure	Test Endpoint	Test Result
Epoxy Resin	25068-38-6	Activated sludge	Estimated	3 hours	IC50	>100 mg/l
Epoxy Resin	25068-38-6	Green algae	Estimated	72 hours	EC50	>11 mg/l
Epoxy Resin	25068-38-6	Rainbow Trout	Estimated	96 hours	LC50	2 mg/l
Epoxy Resin	25068-38-6	Water flea	Estimated	48 hours	EC50	1.8 mg/l

Epoxy Resin	25068-38-6	Green algae	Estimated	72 hours	NOEC	4.2 mg/l
Epoxy Resin	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	Trade Secret	Activated sludge	Estimated	3 hours	EC50	>300 mg/l
Clay	Trade Secret	Green algae	Estimated	72 hours	EC50	>100 mg/l
Clay	Trade Secret	Water flea	Estimated	48 hours	EC50	>100 mg/l
Clay	Trade Secret	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
Amorphous Silica	112945-52-5	Green algae	Analogous Compound	72 hours	ErC50	>173.1 mg/l
Amorphous Silica	112945-52-5	Sediment organism	Analogous Compound	96 hours	EC50	8,500 mg/kg (Dry Weight)
Amorphous Silica	112945-52-5	Water flea	Analogous Compound	24 hours	EL50	>10,000 mg/l
Amorphous Silica	112945-52-5	Zebra Fish	Analogous Compound	96 hours	LL50	>10,000 mg/l
Amorphous Silica	112945-52-5	Green algae	Analogous Compound	72 hours	NOEC	173.1 mg/l
Amorphous Silica	112945-52-5	Water flea	Analogous Compound	21 days	NOEC	68 mg/l
Amorphous 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
Resorcinol	108-46-3	Water flea	Experimental	21 days	NOEC	0.172 mg/l
Quartz Silica	14808-60-7	Green algae	Estimated	72 hours	EC50	440 mg/l
Quartz Silica	14808-60-7	Water flea	Estimated	48 hours	EC50	7,600 mg/l
Quartz Silica	14808-60-7	Zebra Fish	Estimated	96 hours	LC50	5,000 mg/l
Quartz Silica	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 No.	Test Type	Duration	Study Type	Test Result	Protocol
Epoxy Resin	25068-38-6	Estimated Biodegradation	28 days	Biological Oxygen Demand	5 %BOD/COD	OECD 301F - Manometric Respiro
Epoxy Resin	25068-38-6	Estimated Hydrolysis		Hydrolytic half-life	117 hours (t 1/2)	
Aluminum Pigments	7429-90-5	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Clay	Trade Secret	Estimated Biodegradation	28 days	Biological Oxygen Demand	3 %BOD/ThOD	OECD 301D - Closed Bottle Test
n-Butyl Glycidyl Ether	2426-08-6	Experimental Biodegradation	28 days	Biological Oxygen Demand	25 %BOD/ThOD	OECD 301D - Closed Bottle Test
Amorphous Silica	112945-52-5	Data not availbl-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	Biological Oxygen Demand	66.7 %BOD/ThOD	OECD 301C - MITI (I)
Quartz Silica	14808-60-7	Data not availbl-insufficient	N/A	N/A	N/A	N/A
COPPER	7440-50-8	Data not availbl-insufficient	N/A	N/A	N/A	N/A

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Epoxy Resin	25068-38-6	Estimated Bioconcentration		Log of Octanol/H2O part. coeff	3.242	
Aluminum Pigments	7429-90-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Clay	Trade Secret	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 of Octanol/H2O part. coeff	0.63	
Amorphous 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 of Octanol/H2O part. coeff	0.8	
Quartz Silica	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

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:UN3082
Proper Shipping Name:ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name: None assigned.
Hazard Class/Division:9
Subsidiary Risk: None assigned.
Packing Group:III
Limited Quantity: None assigned.
Marine Pollutant: Yes
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
None assigned.

Air Transport (IATA)

UN Number:UN3082
Proper Shipping Name:ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name: None assigned.
Hazard Class/Division:9
Subsidiary Risk: None assigned.
Packing Group:III
Limited Quantity: None assigned.
Marine Pollutant: Yes
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
None assigned.

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

SECTION 15: Regulatory information

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

Global inventory status
Contact 3M for more information. The components of this material are in compliance with the provisions of 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.

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