Safety Data Sheet

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Issue Date:	17/01/2024	**Supercedes Date:**	23/02/2020

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™ Urethane Adhesive EC-3549 B/A

Product Identification Numbers

62-3549-6440-5	87-2500-0412-1	87-2500-0437-8	87-3300-0131-1	87-3300-0686-4
87-3300-0687-2	87-3300-0692-2	87-3300-0693-0		

1.2. Recommended use and restrictions on use

Recommended use
Two-Component Polyurethane 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:

10-8304-7, 10-8546-3

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:	10-8304-7	**Version Number:**	4.00
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This Safety Data Sheet has been prepared in accordance with the Malaysia Occupational Safety and Health (Chemical Classification, Labelling and Safety Data Sheets) Regulations 2013.

SECTION 1: Identification

1.1. Product identifier
3M™ Scotch-Weld™ Urethane Adhesive EC-3549 B/A Part B

1.2. Recommended use and restrictions on use

Recommended use
Automotive, Base of 2-Part Urethane 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
Not classified as hazardous according to Occupational Safety and Health (Chemical Classification, Labelling and Safety Data Sheets) Regulations 2013.

2.2. Label elements
Signal word
Not applicable

Symbols
Not applicable

Pictograms
Not applicable

2.3. Other hazards
None known

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
Polyester Resin	Trade Secret	30 - 60
Talc	14807-96-6	10 - 30
Polypropylene Glycol	25322-69-4	10 - 30
Polyoxypropylene Triol	25723-16-4	3 - 7
Silica	7631-86-9	< 5
o-Diethylbisaniline	13680-35-8	1 - 5
Zeolites	1318-02-1	< 3
BETA-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE	3388-04-3	< 1
SODIUM OXIDE	1313-59-3	< 0.5

SECTION 4: First aid measures

4.1. Description of first aid measures

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

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

Eye Contact:
If exposed, flush eyes with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms develop, get medical attention.

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

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

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

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

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
In case of fire: Use a carbon dioxide or dry chemical extinguisher to extinguish.

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

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Irritant Vapors or Gases	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 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
Aluminum, insoluble compounds	1318-02-1	ACGIH	TWA(respirable fraction):1 mg/m3	A4: Not class. as human carcin
DUST, INERT OR NUISANCE	14807-96-6	Malaysia OELs	TWA (proposed)(respirable particles)(8 hours):3 mg/m3;TWA (proposed)(Inhalable particulate)(8 hours):10 mg/m3	
Talc	14807-96-6	ACGIH	TWA(respirable fraction):2 mg/m3	A4: Not class. as human carcin
Talc	14807-96-6	Malaysia OELs	TWA(respirable fraction)(8	

			hours):2 mg/m3	
DUST, INERT OR NUISANCE	7631-86-9	Malaysia OELs	TWA (proposed)(respirable particles)(8 hours):3 mg/m3;TWA (proposed)(Inhalable particulate)(8 hours):10 mg/m3	
Particles (insoluble or poorly soluble) not otherwise specified, inhalable particles	7631-86-9	ACGIH	TWA(inhalable particulates):10 mg/m3	
Particles (insoluble or poorly soluble) not otherwise specified, respirable particles	7631-86-9	ACGIH	TWA(respirable particles):3 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
No engineering controls required.

8.2.2. Personal protective equipment (PPE)

Eye/face protection
None required.

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

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

Respiratory protection
None required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Specific Physical Form:	Paste
Color	Off-White
Odor	Slight Odor, Mild Odor
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*Not Applicable*
Boiling point/Initial boiling point/Boiling range	>=178.9 ºC

Flash Point	>=178.9 ºC [*Test Method:*Closed Cup]
Evaporation rate	*Not Applicable*
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*
Vapor Pressure	*No Data Available*
Vapor Density and/or Relative Vapor Density	*Not Applicable*
Density	1.31 g/ml
Relative Density	1.31 [*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	10,000 - 40,000 mPa-s [@ 23 ºC]
Volatile Organic Compounds	<=7 g/l [*Test Method:*calculated SCAQMD rule 443.1]
Percent volatile	*No Data Available*
VOC Less H2O & Exempt Solvents	<=7 g/l [*Test Method:*calculated SCAQMD rule 443.1]
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 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:
No health effects are expected.

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

Eye Contact:
Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:
May be harmful if swallowed.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE >2,000 - =5,000 mg/kg
Polyester Resin	Ingestion	Rat	LD50 > 15,000 mg/kg
Polypropylene Glycol	Dermal	Rabbit	LD50 > 10,000 mg/kg
Polypropylene Glycol	Ingestion	Rat	LD50 > 1,000 mg/kg
Talc	Dermal		LD50 estimated to be > 5,000 mg/kg
Talc	Ingestion		LD50 estimated to be > 5,000 mg/kg
Polyoxypropylene Triol	Dermal	Rat	LD50 > 2,000 mg/kg
Polyoxypropylene Triol	Ingestion	Rat	LD50 > 2,500 mg/kg
Zeolites	Dermal	Rabbit	LD50 > 2,000 mg/kg
Zeolites	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 4.57 mg/l
Zeolites	Ingestion	Rat	LD50 > 5,000 mg/kg
Silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Silica	Ingestion	Rat	LD50 > 5,110 mg/kg
o-Diethylbisaniline	Dermal	Rat	LD50 > 2,000 mg/kg
o-Diethylbisaniline	Ingestion	Rat	LD50 1,736 mg/kg
BETA-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE	Dermal	Rabbit	LD50 6,700 mg/kg
BETA-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE	Inhalation-Vapor (4 hours)	Rat	LC50 > 7 mg/l
BETA-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE	Ingestion	Rat	LD50 13,100 mg/kg
SODIUM OXIDE	Ingestion	Professional judgement	LD50 estimated to be 50 - 300 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value

Polypropylene Glycol	Not available	No significant irritation
Talc	Rabbit	No significant irritation
Polyoxypropylene Triol	Rabbit	No significant irritation
Zeolites	Rabbit	No significant irritation
Silica	Rabbit	No significant irritation
o-Diethylbisaniline	Rabbit	No significant irritation
BETA-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE	Rabbit	Minimal irritation
SODIUM OXIDE	similar compounds	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Polypropylene Glycol	Not available	Mild irritant
Talc	Rabbit	No significant irritation
Polyoxypropylene Triol	Rabbit	Mild irritant
Zeolites	Rabbit	Mild irritant
Silica	Rabbit	No significant irritation
o-Diethylbisaniline	In vitro data	No significant irritation
BETA-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE	Rabbit	No significant irritation
SODIUM OXIDE	similar compounds	Corrosive

Sensitization:

Skin Sensitization

Name	Species	Value
Polypropylene Glycol	Human and animal	Not classified
Silica	Human and animal	Not classified
o-Diethylbisaniline	Mouse	Not classified
BETA-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE	similar compounds	Sensitizing

Respiratory Sensitization

Name	Species	Value
Talc	Human	Not classified

Germ Cell Mutagenicity

Name	Route	Value
Polypropylene Glycol	In Vitro	Not mutagenic
Talc	In Vitro	Not mutagenic
Talc	In vivo	Not mutagenic
Silica	In Vitro	Not mutagenic
o-Diethylbisaniline	In Vitro	Not mutagenic
BETA-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Talc	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
Silica	Not Specified	Mouse	Some positive data exist, but the data are not sufficient for classification
BETA-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Talc	Ingestion	Not classified for development	Rat	NOAEL 1,600 mg/kg	during organogenesis
Silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
o-Diethylbisaniline	Ingestion	Not classified for development	Rat	NOAEL 15 mg/kg/day	during gestation
BETA-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE	Ingestion	Not classified for development	Rabbit	NOAEL 0.27 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
SODIUM OXIDE	Inhalation	respiratory irritation	May cause respiratory irritation	Professional judgement	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Talc	Inhalation	pneumoconiosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Talc	Inhalation	pulmonary fibrosis | respiratory system	Not classified	Rat	NOAEL 18 mg/m3	113 weeks
Silica	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
o-Diethylbisaniline	Ingestion	liver | heart | endocrine system | hematopoietic system | immune system | nervous system | kidney and/or bladder	Not classified	Rat	NOAEL 50 mg/kg/day	90 days

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

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labeling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

12.1. Toxicity

Acute aquatic hazard:
Not acutely toxic to aquatic life by GHS criteria.

Chronic aquatic hazard:
Not chronically toxic to aquatic life by GHS criteria.

No product test data available

Material	Cas #	Organism	Type	Exposure	Test Endpoint	Test Result
Polyester Resin	Trade Secret	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Polypropylene Glycol	25322-69-4	Green algae	Analogous Compound	72 hours	ErC50	>100 mg/l
Polypropylene Glycol	25322-69-4	Water flea	Analogous Compound	48 hours	EC50	105.8 mg/l
Polypropylene Glycol	25322-69-4	Zebra Fish	Analogous Compound	96 hours	LC50	>100 mg/l
Polypropylene Glycol	25322-69-4	Green algae	Analogous Compound	72 hours	NOEC	100 mg/l
Polypropylene Glycol	25322-69-4	Water flea	Analogous Compound	21 days	NOEC	>=10 mg/l
Polypropylene Glycol	25322-69-4	Activated sludge	Analogous Compound	3 hours	EC50	>1,000 mg/l
Talc	14807-96-6	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Polyoxypropylene Triol	25723-16-4	Activated sludge	Experimental	3 hours	EC10	>10,000 mg/l
Polyoxypropylene Triol	25723-16-4	Green algae	Experimental	72 hours	EC50	>100 mg/l
Polyoxypropylene Triol	25723-16-4	Water flea	Experimental	48 hours	EC50	>100 mg/l
Polyoxypropylene Triol	25723-16-4	Zebra Fish	Experimental	96 hours	LC50	>100 mg/l
Polyoxypropylene Triol	25723-16-4	Green algae	Experimental	72 hours	NOEC	100 mg/l
Polyoxypropylene Triol	25723-16-4	Water flea	Experimental	21 days	NOEC	8.5 mg/l
o-Diethylbisaniline	13680-35-8	Green algae	Endpoint not reached	72 hours	EC50	>100 mg/l
o-Diethylbisaniline	13680-35-8	Activated sludge	Experimental	3 hours	NOEC	1,000 mg/l
o-Diethylbisaniline	13680-35-8	Water flea	Experimental	48 hours	No tox obs at lmt of water sol	>100 mg/l
o-Diethylbisaniline	13680-35-8	Zebra Fish	Experimental	96 hours	LC50	1.32 mg/l
o-Diethylbisaniline	13680-35-8	Green algae	Experimental	72 hours	NOEC	0.19 mg/l
Silica	7631-86-9	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Zeolites	1318-02-1	African clawed frog	Analogous Compound	96 hours	LC50	1,800 mg/l
Zeolites	1318-02-1	Fathead Minnow	Analogous Compound	96 hours	LC50	>680 mg/l
Zeolites	1318-02-1	Green algae	Analogous Compound	72 hours	EC50	130 mg/l
Zeolites	1318-02-1	Sediment organism	Analogous	22 days	EC50	364.9 mg/l

			Compound			
Zeolites	1318-02-1	Water flea	Analogous Compound	48 hours	EC50	>100 mg/l
Zeolites	1318-02-1	Fathead Minnow	Analogous Compound	30 days	NOEC	86.7 mg/l
Zeolites	1318-02-1	Green algae	Analogous Compound	72 hours	NOEC	18 mg/l
Zeolites	1318-02-1	Water flea	Analogous Compound	21 days	NOEC	32 mg/l
Zeolites	1318-02-1	Bacteria	Experimental	16 hours	EC50	950 mg/l
Zeolites	1318-02-1	Radish	Experimental	23 days	EC50	4,000 mg/kg (Dry Weight)
BETA-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE	3388-04-3	Activated sludge	Estimated	30 minutes	IC50	>100 mg/l
BETA-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE	3388-04-3	Green algae	Estimated	72 hours	EC50	280 mg/l
BETA-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE	3388-04-3	Rainbow Trout	Estimated	96 hours	LC50	180 mg/l
BETA-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE	3388-04-3	Water flea	Estimated	48 hours	EC50	20 mg/l
BETA-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE	3388-04-3	Green algae	Estimated	72 hours	NOEC	1 mg/l
SODIUM OXIDE	1313-59-3	N/A	Data not available or insufficient for classification	N/A	N/A	N/A

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Polyester Resin	Trade Secret	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Polypropylene Glycol	25322-69-4	Experimental Biodegradation	28 days	Biological Oxygen Demand	93.6 %BOD/ThOD	OECD 301F - Manometric Respiro
Talc	14807-96-6	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Polyoxypropylene Triol	25723-16-4	Experimental Biodegradation	28 days	Biological Oxygen Demand	84 %BOD/ThOD	
o-Diethylbisaniline	13680-35-8	Experimental Biodegradation	28 days	Biological Oxygen Demand	4.18 %BOD/ThOD	OECD 301C - MITI (I)
Silica	7631-86-9	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Zeolites	1318-02-1	Analogous Compound Hydrolysis		Hydrolytic half-life	60 days (t 1/2)	
BETA-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE	3388-04-3	Estimated Biodegradation	28 days	Biological Oxygen Demand	28 %BOD/ThOD	OECD 301D - Closed Bottle Test

BETA-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE	3388-04-3	Estimated Hydrolysis		Hydrolytic half-life	6.5 hours (t 1/2)	
SODIUM OXIDE	1313-59-3	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
Polyester Resin	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Polypropylene Glycol	25322-69-4	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	≤1.13	EC A.8 Partition Coefficient
Talc	14807-96-6	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Polyoxypropylene Triol	25723-16-4	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.8	
o-Diethylbisaniline	13680-35-8	Modeled Bioconcentration		Bioaccumulation Factor	2300	Catalogic™
o-Diethylbisaniline	13680-35-8	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	4.4	EC A.8 Partition Coefficient
Silica	7631-86-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Zeolites	1318-02-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
BETA-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE	3388-04-3	Estimated Bioconcentration		Bioaccumulation Factor	2.3	
SODIUM OXIDE	1313-59-3	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

Not hazardous for transportation.

Marine Transport (IMDG)

UN Number: None assigned.
Proper Shipping Name: None assigned.
Technical Name: None assigned.
Hazard Class/Division: None assigned.
Subsidiary Risk: None assigned.
Packing Group: None assigned.
Limited Quantity: None assigned.
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
None assigned.

Air Transport (IATA)

UN Number: None assigned.
Proper Shipping Name: None assigned.
Technical Name: None assigned.
Hazard Class/Division: None assigned.
Subsidiary Risk: None assigned.
Packing Group: None assigned.
Limited Quantity: None assigned.
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
None assigned.

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

SECTION 15: Regulatory information

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

Global inventory status
Contact 3M for more information. The components of this material are in compliance with the provisions of 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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Issue Date:	17/01/2024	**Supercedes Date:**	23/02/2020

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™ Urethane Adhesive EC-3549 B/A Part A

Product Identification Numbers
62-3649-8540-8

1.2. Recommended use and restrictions on use

Recommended use
Accelerator of 2-Part Urethane Adhesive, Industrial use

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

1.4. Emergency telephone number
+60 03-7884 2888

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Skin Corrosion/Irritation: Category 2.
Serious Eye Damage/Irritation: Category 2.
Respiratory Sensitizer: Category 1.
Skin Sensitizer: Category 1.
Specific Target Organ Toxicity (repeated exposure): Category 1.
Specific Target Organ Toxicity (single exposure): Category 3.

2.2. Label elements
Signal word
Danger

Symbols

Exclamation mark |Health Hazard |

Pictograms

Hazard Statements:

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.
H372	Causes damage to organs through prolonged or repeated exposure: respiratory system.

Precautionary statements

Prevention:

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P280E	Wear protective gloves.
P285	In case of inadequate ventilation wear respiratory protection.

Response:

P304 + P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
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.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

2.3. Other hazards

Persons previously sensitized to isocyanates may develop a cross-sensitization reaction to other isocyanates.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
Urethane Prepolymer - NJTS Reg. No. 04499600-5770P	Trade Secret	15 - 40
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	10 - 30
Polymethylene Polyphenylene Isocyanate	9016-87-9	10 - 30
Talc	14807-96-6	10 - 30
Diphenylmethane Diisocyanate (MDI)	26447-40-5	< 10
Zeolite	1318-02-1	1 - 5

SECTION 4: First aid measures

4.1. Description of first aid measures

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

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

Eye Contact:
Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

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

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

Irritating to the respiratory tract (coughing, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain). Allergic respiratory reaction (difficulty breathing, wheezing, cough, and tightness of chest). Allergic skin reaction (redness, swelling, blistering, and itching). Target organ effects following prolonged or repeated exposure. 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 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	Condition
Isocyanates	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Cyanide	During Combustion
Oxides of Nitrogen	During Combustion

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

SECTION 6: Accidental release measures

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

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

6.3. Methods and material for containment and cleaning up
Contain spill. Pour isocyanate decontaminant solution (90% water, 8% concentrated ammonia, 2% detergent) on spill and allow to react for 10 minutes. Or pour water on spill and allow to react for more than 30 minutes. Cover with absorbent

material. 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 container approved for transportation by appropriate authorities, but do not seal the container for 48 hours to avoid pressure build-up. 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. 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 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.)

7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep container tightly closed to prevent contamination with water or air. If contamination is suspected, do not reseal container. Store away from acids. Store away from strong bases. Store away from oxidizing agents. Store away from amines.

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
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	ACGIH	TWA:0.005 ppm	
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	Malaysia OELs	TWA(8 hours):0.051 mg/m3(0.005 ppm)	
Aluminum, insoluble compounds	1318-02-1	ACGIH	TWA(respirable fraction):1 mg/m3	A4: Not class. as human carcin
DUST, INERT OR NUISANCE	14807-96-6	Malaysia OELs	TWA (proposed)(respirable particles)(8 hours):3 mg/m3;TWA (proposed)(Inhalable particulate)(8 hours):10 mg/m3	
Talc	14807-96-6	ACGIH	TWA(respirable fraction):2 mg/m3	A4: Not class. as human carcin
Talc	14807-96-6	Malaysia OELs	TWA(respirable fraction)(8 hours):2 mg/m3	
Polymethylene Polyphenylene Isocyanate	9016-87-9	Manufacturer determined	TWA(inhalable fraction)(8 hours):0.05 mg/m3;CEIL(inhalable fraction):0.1 mg/m3	Dermal Sensitizer, Respiratory Sensitizer

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.
Gloves made from the following material(s) are recommended: Butyl Rubber
Neoprene
Nitrile Rubber

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron – Butyl rubber
Apron - Neoprene
Apron – Nitrile

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	Brown
Odor	Slight Odor
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*Not Applicable*
Boiling point/Initial boiling point/Boiling range	>=186 ºC
Flash Point	>=186.1 ºC [*Test Method:*Closed Cup]
Evaporation rate	*Not Applicable*
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	*Not Applicable*

Flammable Limits(UEL)	*Not Applicable*
Vapor Density and/or Relative Vapor Density	*No Data Available*
Density	1.34 g/ml
Relative Density	1.34 [*Ref Std:*WATER=1]
Water solubility	Negligible
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*Not Applicable*
Decomposition temperature	*No Data Available*
Viscosity/Kinematic Viscosity	15,000 - 32,000 mPa-s [@ 23 ºC] [*Test Method:*Brookfield]
Volatile Organic Compounds	0 g/l [*Test Method:*calculated SCAQMD rule 443.1]
Percent volatile	0 % weight
VOC Less H2O & Exempt Solvents	0 g/l [*Test Method:*calculated SCAQMD rule 443.1]
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 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
Amines
Alcohols
Water
Reaction with water, alcohols, and amines is not hazardous if container can vent to the atmosphere to prevent pressure buildup.
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.

Allergic Respiratory Reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest.

May cause additional health effects (see below).

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

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

Ingestion:
Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Additional Health Effects:

Prolonged or repeated exposure may cause target organ effects:
Pneumoconiosis: Sign/symptoms may include persistent cough, breathlessness, chest pain, increased amounts of sputum, and changes in lung function tests.

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

Additional Information:
Persons previously sensitized to isocyanates may develop a cross-sensitization reaction to other isocyanates.

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	Ingestion		No data available; calculated ATE >5,000 mg/kg
Urethane Prepolymer - NJTS Reg. No. 04499600-5770P	Dermal		LD50 estimated to be > 5,000 mg/kg
Urethane Prepolymer - NJTS Reg. No. 04499600-5770P	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Polymethylene Polyphenylene Isocyanate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Polymethylene Polyphenylene Isocyanate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.368 mg/l
Polymethylene Polyphenylene Isocyanate	Ingestion	Rat	LD50 31,600 mg/kg
Talc	Dermal		LD50 estimated to be > 5,000 mg/kg
Talc	Ingestion		LD50 estimated to be > 5,000 mg/kg
P,P'-Methylenebis(phenyl isocyanate)	Dermal	Rabbit	LD50 > 5,000 mg/kg
P,P'-Methylenebis(phenyl isocyanate)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.368 mg/l

P,P'-Methylenebis(phenyl isocyanate)	Ingestion	Rat	LD50 31,600 mg/kg
Diphenylmethane Diisocyanate (MDI)	Dermal	Rabbit	LD50 > 5,000 mg/kg
Diphenylmethane Diisocyanate (MDI)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.368 mg/l
Diphenylmethane Diisocyanate (MDI)	Ingestion	Rat	LD50 31,600 mg/kg
Zeolite	Dermal	Rabbit	LD50 > 2,000 mg/kg
Zeolite	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 4.57 mg/l
Zeolite	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Polymethylene Polyphenylene Isocyanate	official classification	Irritant
Talc	Rabbit	No significant irritation
P,P'-Methylenebis(phenyl isocyanate)	official classification	Irritant
Diphenylmethane Diisocyanate (MDI)	official classification	Irritant
Zeolite	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Polymethylene Polyphenylene Isocyanate	official classification	Severe irritant
Talc	Rabbit	No significant irritation
P,P'-Methylenebis(phenyl isocyanate)	official classification	Severe irritant
Diphenylmethane Diisocyanate (MDI)	official classification	Severe irritant
Zeolite	Rabbit	Mild irritant

Sensitization:

Skin Sensitization

Name	Species	Value
Polymethylene Polyphenylene Isocyanate	official classification	Sensitizing
P,P'-Methylenebis(phenyl isocyanate)	official classification	Sensitizing
Diphenylmethane Diisocyanate (MDI)	official classification	Sensitizing

Respiratory Sensitization

Name	Species	Value
Polymethylene Polyphenylene Isocyanate	Human	Sensitizing
Talc	Human	Not classified

P,P'-Methylenebis(phenyl isocyanate)	Human	Sensitizing
Diphenylmethane Diisocyanate (MDI)	Human	Sensitizing

Germ Cell Mutagenicity

Name	Route	Value
Polymethylene Polyphenylene Isocyanate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Talc	In Vitro	Not mutagenic
Talc	In vivo	Not mutagenic
P,P'-Methylenebis(phenyl isocyanate)	In Vitro	Some positive data exist, but the data are not sufficient for classification
Diphenylmethane Diisocyanate (MDI)	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Polymethylene Polyphenylene Isocyanate	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
Talc	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
P,P'-Methylenebis(phenyl isocyanate)	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
Diphenylmethane Diisocyanate (MDI)	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Polymethylene Polyphenylene Isocyanate	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
Talc	Ingestion	Not classified for development	Rat	NOAEL 1,600 mg/kg	during organogenesis
P,P'-Methylenebis(phenyl isocyanate)	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
Diphenylmethane Diisocyanate (MDI)	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Polymethylene Polyphenylene Isocyanate	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
P,P'-Methylenebis(phenyl isocyanate)	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
Diphenylmethane Diisocyanate (MDI)	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Polymethylene Polyphenylene Isocyanate	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks
Talc	Inhalation	pneumoconiosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Talc	Inhalation	pulmonary fibrosis |	Not classified	Rat	NOAEL 18	113 weeks

		respiratory system			mg/m3	
P,P'-Methylenebis(phenyl isocyanate)	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks
Diphenylmethane Diisocyanate (MDI)	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks

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:
Not acutely toxic to aquatic life by GHS criteria.

Chronic aquatic hazard:
Not chronically toxic to aquatic life by GHS criteria.

No product test data available

Material	Cas #	Organism	Type	Exposure	Test Endpoint	Test Result
Urethane Prepolymer - NJTS Reg. No. 04499600-5770P	Trade Secret	Water flea	Estimated	24 hours	EC50	>100 mg/l
Urethane Prepolymer - NJTS Reg. No. 04499600-5770P	Trade Secret	Zebra Fish	Estimated	24 hours	LC50	>100 mg/l
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	Activated sludge	Analogous Compound	3 hours	EC50	>100 mg/l
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	Water flea	Analogous Compound	24 hours	EC50	>1,000 mg/l
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	Zebra Fish	Analogous Compound	96 hours	LC50	>1,000 mg/l
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	Water flea	Analogous Compound	21 days	NOEC	>=10 mg/l
Polymethylene Polyphenylene Isocyanate	9016-87-9	Green algae	Analogous Compound	72 hours	No tox obs at lmt of water sol	>100 mg/l
Polymethylene Polyphenylene Isocyanate	9016-87-9	Water flea	Analogous Compound	24 hours	No tox obs at lmt of water sol	>100 mg/l
Polymethylene Polyphenylene Isocyanate	9016-87-9	Green algae	Analogous Compound	72 hours	No tox obs at lmt of water sol	>100 mg/l
Polymethylene Polyphenylene	9016-87-9	Activated sludge	Analogous Compound	3 hours	EC50	>100 mg/l

Isocyanate						
Talc	14807-96-6	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Diphenylmethane Diisocyanate (MDI)	26447-40-5	Green algae	Estimated	72 hours	EC50	>1,640 mg/l
Diphenylmethane Diisocyanate (MDI)	26447-40-5	Water flea	Estimated	24 hours	EC50	>1,000 mg/l
Diphenylmethane Diisocyanate (MDI)	26447-40-5	Zebra Fish	Estimated	96 hours	LC50	>1,000 mg/l
Diphenylmethane Diisocyanate (MDI)	26447-40-5	Green algae	Estimated	72 hours	NOEL	1,640 mg/l
Diphenylmethane Diisocyanate (MDI)	26447-40-5	Water flea	Estimated	21 days	NOEC	>=10 mg/l
Zeolite	1318-02-1	African clawed frog	Analogous Compound	96 hours	LC50	1,800 mg/l
Zeolite	1318-02-1	Fathead Minnow	Analogous Compound	96 hours	LC50	>680 mg/l
Zeolite	1318-02-1	Green algae	Analogous Compound	72 hours	EC50	130 mg/l
Zeolite	1318-02-1	Sediment organism	Analogous Compound	22 days	EC50	364.9 mg/l
Zeolite	1318-02-1	Water flea	Analogous Compound	48 hours	EC50	>100 mg/l
Zeolite	1318-02-1	Fathead Minnow	Analogous Compound	30 days	NOEC	86.7 mg/l
Zeolite	1318-02-1	Green algae	Analogous Compound	72 hours	NOEC	18 mg/l
Zeolite	1318-02-1	Water flea	Analogous Compound	21 days	NOEC	32 mg/l
Zeolite	1318-02-1	Bacteria	Experimental	16 hours	EC50	950 mg/l
Zeolite	1318-02-1	Radish	Experimental	23 days	EC50	4,000 mg/kg (Dry Weight)

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Urethane Prepolymer - NJTS Reg. No. 04499600-5770P	Trade Secret	Data not availbl-insufficient	N/A	N/A	N/A	N/A
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	Analogous Compound Hydrolysis		Hydrolytic half-life	<2 hours (t 1/2)	
Polymethylene Polyphenylene Isocyanate	9016-87-9	Analogous Compound Aquatic Inherent Biodegrad.	28 days	Biological Oxygen Demand	0 %BOD/ThOD	OECD 302C - Modified MITI (II)
Polymethylene Polyphenylene Isocyanate	9016-87-9	Analogous Compound Hydrolysis		Hydrolytic half-life	20 hours (t 1/2)	
Talc	14807-96-6	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Diphenylmethane Diisocyanate (MDI)	26447-40-5	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Zeolite	1318-02-1	Analogous Compound Hydrolysis		Hydrolytic half-life	60 days (t 1/2)	

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Urethane Prepolymer - NJTS Reg. No. 04499600-5770P	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Polymethylene Polyphenylene Isocyanate	9016-87-9	Analogous Compound BCF - Fish	28 days	Bioaccumulation Factor	200	OECD305-Bioconcentration
Polymethylene Polyphenylene Isocyanate	9016-87-9	Analogous Compound Bioconcentration		Log of Octanol/H2O part. coeff	4.51	
Talc	14807-96-6	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Diphenylmethane Diisocyanate (MDI)	26447-40-5	Estimated BCF - Fish	28 days	Bioaccumulation Factor	200	
Zeolite	1318-02-1	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

Not hazardous for transportation.

Marine Transport (IMDG)

UN Number: None assigned.
Proper Shipping Name: None assigned.
Technical Name: None assigned.
Hazard Class/Division: None assigned.
Subsidiary Risk: None assigned.
Packing Group: None assigned.
Limited Quantity: None assigned.
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
None assigned.

Air Transport (IATA)

UN Number: None assigned.
Proper Shipping Name: None assigned.
Technical Name: None assigned.
Hazard Class/Division: None assigned.
Subsidiary Risk: None assigned.
Packing Group: None assigned.
Limited Quantity: None assigned.
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
None assigned.

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

SECTION 15: Regulatory information

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

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

SECTION 16: Other information

DISCLAIMER: The information 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