Safety Data Sheet

Document group:	19-0738-5	**Version number:**	2.00
Issue Date:	30/04/2023	**Supersedes date:**	12/05/2019

This Safety Data Sheet has been prepared in accordance with the New Zealand, Hazardous Substances (Safety Data Sheets) Notice 2017.

IDENTIFICATION:

1.1. Product identifier
3M™ Panel Bonding Adhesive, PN 08116

Product Identification Numbers
60-9801-0901-5

1.2. Recommended use and restrictions on use

Recommended use
Automotive. A two-part structural adhesive used to bond steel or aluminum auto body panels.

1.3. Supplier's details

Address:	3M New Zealand Ltd, 94 Apollo Drive, Rosedale 0632, Auckland
Telephone:	(09) 477 4040
E Mail:	innovation@nz.mmm.com
Website:	3m.co.nz

1.4. Emergency telephone number
24 hr Medical Emergency, National Poisons Centre, 0800 764 766 (0800 POISON)

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

34-3781-1, 19-0736-9

One or more components of this KIT is classified as a hazardous substance in accordance with the relevant criteria of the HSNO Act 1996 and the Hazardous Substances (Hazard Classification) Notice 2020.

TRANSPORT INFORMATION

The Dangerous Goods Classification for the complete Kit is provided below.

UN No.: UN3267
Proper shipping name: CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S., (Alkyl Amines, Bis(3-Aminopropyl) Ether of Diethylene Glycol)

Class/Division: 8
Packing Group: II
Marine Pollutant: Not applicable.

Hazchem Code: 2X
IERG: 37

Land Transport Rule: Dangerous Goods - Road/Rail Transport
Special Instructions: Limited quantity may apply

International Maritime Dangerous Goods Code (IMDG) - Marine Transport
Special Instructions: Limited quantity may apply

Revision information:
Complete document review.

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Safety Data Sheet

Document group:	19-0736-9	**Version number:**	2.00
Issue Date:	19/04/2023	**Supersedes date:**	14/04/2019

This Safety Data Sheet has been prepared in accordance with the New Zealand, Hazardous Substances (Safety Data Sheets) Notice 2017.

SECTION 1: Identification

1.1. Product identifier
3M™ Panel Bonding Adhesive - Part A, PN 08116

1.2. Recommended use and restrictions on use

Recommended use
Automotive. Part A of a two-part structural adhesive used to bond steel or aluminum auto body panels.

For Industrial or Professional use only

1.3. Supplier's details

Address:	3M New Zealand Ltd, 94 Apollo Drive, Rosedale 0632, Auckland
Telephone:	(09) 477 4040
E Mail:	innovation@nz.mmm.com
Website:	3m.co.nz

1.4. Emergency telephone number
24 hr Medical Emergency, National Poisons Centre, 0800 764 766 (0800 POISON)

SECTION 2: Hazard identification

Classified as hazardous in accordance with the relevant criteria of the HSNO Act 1996 and the Hazardous Substances (Hazard Classification) Notice 2020.
Refer to Section 14 of this Safety Data Sheet for product Dangerous Goods Classification.

2.1. Classification of the substance or mixture
Acute Toxicity (oral): Category 4
Acute Toxicity (dermal): Category 4
Acute Toxicity (inhalation): Category 4
Skin Corrosion/Irritation: Category 1B
Serious Eye Damage/Irritation: Category 1
Skin Sensitizer: Category 1A.
Reproductive Toxicity: Category 1B
Specific Target Organ Toxicity (single exposure): Category 2
Specific Target Organ Toxicity (single exposure): Category 3
Acute Aquatic Toxicity: Category 1

Chronic Aquatic Toxicity: Category 1

2.2. Label elements
SIGNAL WORD
Danger

Symbols:
Corrosion |Exclamation mark |Health Hazard |

Pictograms

HAZARD STATEMENTS:

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H360	May damage fertility or the unborn child.
H336	May cause drowsiness or dizziness.
H335	May cause respiratory irritation.
H371	May cause damage to organs: blood or blood-forming organs.
H410	Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS
General

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

Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280D	Wear protective gloves, protective clothing, and eye/face protection.

Response

P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304 + P340	IF INHALED: Remove person to fresh air and keep 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.
P310	Immediately call a POISON CENTER or doctor/physician.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.

P363	Wash contaminated clothing before reuse.
P391	Collect spillage.

Storage

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal

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

2.3. Other hazards

May cause chemical gastrointestinal burns. Persons previously sensitised to amines may develop a cross-sensitisation reaction to certain other amines.

SECTION 3: Composition/information on ingredients

Ingredient	CAS Nbr	% by Weight
Aliphatic diamine polymer	68911-25-1	30 - 60
Silica, vitreous	60676-86-0	10 - 30
Butadiene Acrylonitrile Polymer	68683-29-4	10 - 20
C12-14-tert-alkyl amines	68955-53-3	7 - 13
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	90-72-2	5 - 10
Poly(Oxypropylene)Diamine	9046-10-0	3 - 7
Dimethyl Siloxane, Reaction Product With Silica	67762-90-7	1 - 5
Nitric acid, ammonium calcium salt	15245-12-2	1 - 5
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	< 2
Bis[(Dimethylamino)Methyl]Phenol	71074-89-0	0.1 - 1.5
Poly(Oxypropylene)Triamine	39423-51-3	0.5 - 1.5
Toluene	108-88-3	< 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 flush with large amounts of water for at least 15 minutes. Remove contaminated clothing. Get immediate medical attention. Wash clothing before reuse.

Eye contact

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

A product risk assessment is recommended to determine if eye wash facilities may be required when using this product in the workplace.

If swallowed

Rinse mouth. Do not induce vomiting. Get immediate medical attention.

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

The most important symptoms and effects based on the CLP classification include:

4.3. Indication of any immediate medical attention and special treatment required
Overexposure to this product may result in methemoglobinemia. Methemoglobinemia may be clinically suspected by the presence of clinical "cyanosis" in the presence of a normal PaO2 (as obtained by arterial blood gases). Routine pulse oximetry may be inaccurate for monitoring oxygen saturation in the presence of methemoglobinemia, and should not be used to make the diagnosis of this disorder. If the patient is symptomatic or if the methemoglobin level is >20%, specific therapy with methylene blue should be considered as part of the medical management.

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.

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.

5.4. Hazchem code: 2X

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 dykes to prevent entry into sewer systems or bodies of water.

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

SECTION 7: Handling and storage

Refer to Section 15 - Controls for more information

7.1. Precautions for safe handling
Keep out of reach of children. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Use personal protective equipment (eg. gloves, respirators…) as required.

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Keep container tightly closed. Store away from acids.

7.3. Certified handler
Not required

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
Toluene	108-88-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcinogen, Ototoxicant
Toluene	108-88-3	New Zealand WES	TWA(8 hours):75 mg/m3(20 ppm);STEL(15 minutes):377 mg/m3(100 ppm)	Skin
Silica, vitreous	60676-86-0	New Zealand WES	TWA(as respirable dust)(8 hours): 0.2 mg/m3	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
New Zealand WES : New Zealand Workplace Exposure Standards.
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
ppm: parts per million
mg/m³: milligrams per cubic metre
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

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

Refer AS/NZS 1336 - Recommended practices for occupational eye protection and for performance specifications AS/NZS 1337, Parts 1 - 6 - Personal eye-protection.

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

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

exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

Respiratory protection

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

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

Refer AS/NZS 1715 - Selection, use and maintenance of respiratory protective equipment and AS/NZS 1716 - Respiratory protective devices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Viscous.
Colour	Amber
Odour	Slight Amine
Odour threshold	*No data available.*
pH	*Not applicable.*
Melting point/Freezing point	*Not applicable.*
Boiling point/Initial boiling point/Boiling range	*No data available.*
Flash point	>=110 ºC [*Test Method:*Closed Cup] [*Details:*Closed Cup SETAFLASH (Based on flammable ingredient at highest %) (ASTM D-3278-96 e-1)]
Evaporation rate	< 1 [*Ref Std:*BUOAC=1]
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	*No data available.*
Flammable Limits(UEL)	*No data available.*
Vapour pressure	*No data available.*
Vapor Density and/or Relative Vapor Density	*No data available.*
Density	1.1 g/ml
Relative density	1.1 [*Test Method:*Estimated] [*Ref Std:*WATER=1]
Water solubility	*No data available.*
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Autoignition temperature	*No data available.*
Decomposition temperature	*No data available.*
Viscosity/Kinematic Viscosity	> 100,000 mPa-s
Volatile organic compounds (VOC)	0.4 % weight [*Test Method:*calculated per CARB title 2]
Volatile organic compounds (VOC)	4 g/l [*Test Method:*calculated SCAQMD rule 443.1]
Percent volatile	*No data available.*
VOC less H2O & exempt solvents	4 g/l [*Test Method:*calculated SCAQMD rule 443.1]

SECTION 10: Stability and reactivity

10.1 Reactivity
This material is considered to be non reactive under normal use conditions

10.2 Chemical stability
Stable.

10.3 Possibility of hazardous reactions
Hazardous polymerisation will not occur.

10.4 Conditions to avoid
None known.

10.5 Incompatible materials
None known.

10.6 Hazardous decomposition products

Substance	Condition
Carbon monoxide.	Not specified.
Carbon dioxide.	Not specified.
Oxides of nitrogen.	Not specified.

SECTION 11: Toxicological information

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

11.1 Information on Toxicological effects

Signs and Symptoms of Exposure

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

Inhalation
Harmful if inhaled. Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. May cause additional health effects (see below).

Skin contact
Harmful in contact with skin. Corrosive (skin burns): Signs/symptoms may include localised redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

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

Ingestion
Harmful if swallowed.
Gastrointestinal corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea; blood in the faeces and/or vomitus may also be seen. May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:
Methemoglobinemia: Signs/symptoms may include headache, dizziness, nausea, difficulty breathing, and generalised

weakness. Central nervous system (CNS) depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Reproductive/Developmental Toxicity:
Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Additional information:
Persons previously sensitised to amines may develop a cross-sensitisation reaction to certain other amines.

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

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >1,000 - =2,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE >10 - =20 mg/l
Overall product	Ingestion		No data available; calculated ATE >300 - =2,000 mg/kg
Aliphatic diamine polymer	Dermal	Rat	LD50 > 2,000 mg/kg
Aliphatic diamine polymer	Ingestion	Rat	LD50 > 2,000 mg/kg
Silica, vitreous	Dermal	Rabbit	LD50 > 5,000 mg/kg
Silica, vitreous	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Silica, vitreous	Ingestion	Rat	LD50 > 5,110 mg/kg
Butadiene Acrylonitrile Polymer	Dermal	Rabbit	LD50 > 3,000 mg/kg
Butadiene Acrylonitrile Polymer	Ingestion	Rat	LD50 > 15,300 mg/kg
C12-14-tert-alkyl amines	Dermal	Rat	LD50 251 mg/kg
C12-14-tert-alkyl amines	Inhalation-Vapor (4 hours)	Rat	LC50 1.2 mg/l
C12-14-tert-alkyl amines	Ingestion	Rat	LD50 320 mg/kg
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Dermal	Rat	LD50 1,280 mg/kg
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Ingestion	Rat	LD50 1,000 mg/kg
Poly(Oxypropylene)Diamine	Dermal	Rabbit	LD50 2,090 mg/kg
Poly(Oxypropylene)Diamine	Ingestion	Rat	LD50 475 mg/kg
Dimethyl Siloxane, Reaction Product With Silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Dimethyl Siloxane, Reaction Product With Silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Dimethyl Siloxane, Reaction Product With Silica	Ingestion	Rat	LD50 > 5,110 mg/kg
Nitric acid, ammonium calcium salt	Ingestion	Rat	LD50 >300, <2000 mg/kg
Nitric acid, ammonium calcium salt	Dermal	similar compounds	LD50 > 2,000 mg/kg
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Dermal	Rabbit	LD50 2,525 mg/kg
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Rat	LD50 2,850 mg/kg
Poly(Oxypropylene)Triamine	Inhalation-Vapor	Professional judgement	LC50 estimated to be > 50 mg/l
Poly(Oxypropylene)Triamine	Dermal	Rat	LD50 > 1,000 mg/kg
Poly(Oxypropylene)Triamine	Ingestion	Rat	LD50 550 mg/kg
Bis[(Dimethylamino)Methyl]Phenol	Ingestion		LD50 estimated to be 300 - 2,000 mg/kg
Toluene	Dermal	Rat	LD50 12,000 mg/kg
Toluene	Inhalation-Vapor (4 hours)	Rat	LC50 30 mg/l
Toluene	Ingestion	Rat	LD50 5,550 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Aliphatic diamine polymer	Rat	Irritant
Silica, vitreous	Rabbit	No significant irritation
Butadiene Acrylonitrile Polymer	Rabbit	Irritant
C12-14-tert-alkyl amines	Rabbit	Corrosive
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Rabbit	Corrosive
Poly(Oxypropylene)Diamine	Rabbit	Corrosive
Dimethyl Siloxane, Reaction Product With Silica	Rabbit	No significant irritation
Nitric acid, ammonium calcium salt	similar compounds	No significant irritation
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Rabbit	Corrosive
Poly(Oxypropylene)Triamine	Rabbit	Mild irritant
Bis[(Dimethylamino)Methyl]Phenol	similar compounds	Corrosive
Toluene	Rabbit	Irritant

Serious Eye Damage/Irritation

Name	Species	Value
Aliphatic diamine polymer	In vitro data	Severe irritant
Silica, vitreous	Rabbit	No significant irritation
Butadiene Acrylonitrile Polymer	Rabbit	Mild irritant
C12-14-tert-alkyl amines	Rabbit	Corrosive
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Rabbit	Corrosive
Poly(Oxypropylene)Diamine	Rabbit	Corrosive
Dimethyl Siloxane, Reaction Product With Silica	Rabbit	No significant irritation
Nitric acid, ammonium calcium salt	Rabbit	Corrosive
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Rabbit	Corrosive
Poly(Oxypropylene)Triamine	In vitro data	Corrosive
Bis[(Dimethylamino)Methyl]Phenol	similar compounds	Corrosive
Toluene	Rabbit	Moderate irritant

Sensitisation:

Skin Sensitisation

Name	Species	Value
Aliphatic diamine polymer	Guinea pig	Sensitising
Silica, vitreous	Human and animal	Not classified
Butadiene Acrylonitrile Polymer	Guinea pig	Sensitising
C12-14-tert-alkyl amines	Guinea pig	Sensitising
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Guinea pig	Not classified
Dimethyl Siloxane, Reaction Product With Silica	Human and animal	Not classified
Nitric acid, ammonium calcium salt	Mouse	Not classified
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Professional	Sensitising

	judgement	
Poly(Oxypropylene)Triamine	Guinea pig	Not classified
Toluene	Guinea pig	Not classified

Respiratory Sensitisation

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

Germ Cell Mutagenicity

Name	Route	Value
Aliphatic diamine polymer	In Vitro	Not mutagenic
Silica, vitreous	In Vitro	Not mutagenic
C12-14-tert-alkyl amines	In vivo	Not mutagenic
C12-14-tert-alkyl amines	In Vitro	Some positive data exist, but the data are not sufficient for classification
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	In Vitro	Not mutagenic
Poly(Oxypropylene)Diamine	In Vitro	Not mutagenic
Poly(Oxypropylene)Diamine	In vivo	Not mutagenic
Dimethyl Siloxane, Reaction Product With Silica	In Vitro	Not mutagenic
Nitric acid, ammonium calcium salt	In Vitro	Not mutagenic
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	In Vitro	Not mutagenic
Poly(Oxypropylene)Triamine	In Vitro	Not mutagenic
Poly(Oxypropylene)Triamine	In vivo	Not mutagenic
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Silica, vitreous	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Dimethyl Siloxane, Reaction Product With Silica	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Toluene	Inhalation	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
Aliphatic diamine polymer	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
Aliphatic diamine polymer	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	29 days
Aliphatic diamine polymer	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
Silica, vitreous	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Silica, vitreous	Inhalation	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Silica, vitreous	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
C12-14-tert-alkyl amines	Ingestion	Not classified for female reproduction	Rat	NOAEL 124	1 generation

				mg/kg/day	
C12-14-tert-alkyl amines	Ingestion	Not classified for male reproduction	Rat	NOAEL 107 mg/kg/day	1 generation
C12-14-tert-alkyl amines	Dermal	Not classified for development	Rat	NOAEL 45 mg/kg/day	during gestation
C12-14-tert-alkyl amines	Ingestion	Not classified for development	Rat	NOAEL 21 mg/kg/day	1 generation
Dimethyl Siloxane, Reaction Product With Silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Dimethyl Siloxane, Reaction Product With Silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Dimethyl Siloxane, Reaction Product With Silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Not classified for female reproduction	Rat	NOAEL 600 mg/kg/day	premating into lactation
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Not classified for male reproduction	Rat	NOAEL 600 mg/kg/day	59 days
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Not classified for development	Rat	NOAEL 600 mg/kg/day	premating into lactation
Poly(Oxypropylene)Triamine	Dermal	Not classified for female reproduction	Rat	NOAEL 100 mg/kg/day	premating into lactation
Poly(Oxypropylene)Triamine	Dermal	Not classified for male reproduction	Rat	NOAEL 100 mg/kg/day	50 days
Poly(Oxypropylene)Triamine	Dermal	Not classified for development	Rat	NOAEL 100 mg/kg/day	premating into lactation
Poly(Oxypropylene)Triamine	Ingestion	Not classified for development	Rat	NOAEL 125 mg/kg/day	during gestation
Toluene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	Not classified for male reproduction	Rat	NOAEL 2.3 mg/l	1 generation
Toluene	Ingestion	Toxic to development	Rat	LOAEL 520 mg/kg/day	during gestation
Toluene	Inhalation	Toxic to development	Human	NOAEL Not available	poisoning and/or abuse

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Aliphatic diamine polymer	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	Irritation Positive	
Aliphatic diamine polymer	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Rat	NOAEL Not available	
Butadiene Acrylonitrile Polymer	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL not available	
C12-14-tert-alkyl amines	Inhalation	respiratory irritation	May cause respiratory irritation	Rat	NOAEL 0.019 mg/l	4 weeks
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Poly(Oxypropylene)Diamine	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Nitric acid, ammonium calcium salt	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Nitric acid, ammonium calcium salt	Ingestion	methemoglobinemia	Causes damage to organs	similar compounds	NOAEL Not available	
3,3'-Oxybis(ethyleneoxy)bis(pr	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for	similar health	NOAEL Not available	

opylamine)			classification	hazards		
Poly(Oxypropylene)Triamine	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Toluene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Toluene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL 0.004 mg/l	3 hours
Toluene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Aliphatic diamine polymer	Ingestion	heart | skin | endocrine system | gastrointestinal tract | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system | vascular system	Not classified	Rat	NOAEL 1,000 mg/kg/day	29 days
Silica, vitreous	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
C12-14-tert-alkyl amines	Dermal	endocrine system | hematopoietic system | liver | muscles | nervous system | kidney and/or bladder	Not classified	Rat	NOAEL 60 mg/kg/day	4 weeks
C12-14-tert-alkyl amines	Inhalation	hematopoietic system | heart | endocrine system | liver | muscles | nervous system | kidney and/or bladder	Not classified	Rat	NOAEL 0.129 mg/l	4 weeks
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Dermal	skin | liver | nervous system | auditory system | hematopoietic system | eyes	Not classified	Rat	NOAEL 125 mg/kg/day	28 days
Dimethyl Siloxane, Reaction Product With Silica	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Ingestion	gastrointestinal tract | heart | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system | vascular system	Not classified	Rat	NOAEL 600 mg/kg/day	59 days
Poly(Oxypropylene)Triami	Dermal	skin | heart |	Not classified	Rat	NOAEL 160	90 days

ne		endocrine system | gastrointestinal tract | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system | vascular system			mg/kg/day	
Poly(Oxypropylene)Triamine	Ingestion	heart | skin | endocrine system | gastrointestinal tract | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system | vascular system	Not classified	Rat	NOAEL 75 mg/kg/day	90 days
Toluene	Inhalation	auditory system | eyes | olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	nervous system	May cause damage to organs though prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 2.3 mg/l	15 months
Toluene	Inhalation	heart | liver | kidney and/or bladder	Not classified	Rat	NOAEL 11.3 mg/l	15 weeks
Toluene	Inhalation	endocrine system	Not classified	Rat	NOAEL 1.1 mg/l	4 weeks
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL Not available	20 days
Toluene	Inhalation	bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 1.1 mg/l	8 weeks
Toluene	Inhalation	hematopoietic system | vascular system	Not classified	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	gastrointestinal tract	Not classified	Multiple animal species	NOAEL 11.3 mg/l	15 weeks
Toluene	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 625 mg/kg/day	13 weeks
Toluene	Ingestion	heart	Not classified	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	liver | kidney and/or bladder	Not classified	Multiple animal species	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	hematopoietic system	Not classified	Mouse	NOAEL 600 mg/kg/day	14 days
Toluene	Ingestion	endocrine system	Not classified	Mouse	NOAEL 105 mg/kg/day	28 days
Toluene	Ingestion	immune system	Not classified	Mouse	NOAEL 105 mg/kg/day	4 weeks

Aspiration Hazard

Name	Value

Poly(Oxypropylene)Diamine	Some positive data exist, but the data are not sufficient for classification
Toluene	Aspiration hazard

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

SECTION 12: Ecological information

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

12.1. Toxicity
Ecotoxic to the aquatic environment.
Acute Aquatic Toxicity: Category 1
Chronic Aquatic Toxicity: Category 1

No product test data available.

Material	CAS Number	Organism	Type	Exposure	Test endpoint	Test result
Aliphatic diamine polymer	68911-25-1	Fathead minnow	Experimental	96 hours	LL50	2.16 mg/l
Aliphatic diamine polymer	68911-25-1	Green algae	Experimental	72 hours	EL50	0.43 mg/l
Aliphatic diamine polymer	68911-25-1	Water flea	Experimental	48 hours	EL50	0.57 mg/l
Aliphatic diamine polymer	68911-25-1	Green algae	Experimental	72 hours	NOEL	0.28 mg/l
Aliphatic diamine polymer	68911-25-1	Activated sludge	Experimental	3 hours	EC50	410.3 mg/l
Silica, vitreous	60676-86-0	Common Carp	Experimental	72 hours	LC50	>10,000 mg/l
Butadiene Acrylonitrile Polymer	68683-29-4	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
C12-14-tert-alkyl amines	68955-53-3	Activated sludge	Experimental	30 minutes	EC50	63.5 mg/l
C12-14-tert-alkyl amines	68955-53-3	Activated sludge	Experimental	30 minutes	EC50	63.5 mg/l
C12-14-tert-alkyl amines	68955-53-3	Green algae	Experimental	72 hours	EC50	0.44 mg/l
C12-14-tert-alkyl amines	68955-53-3	Rainbow trout	Experimental	96 hours	LC50	1.3 mg/l
C12-14-tert-alkyl amines	68955-53-3	Water flea	Experimental	48 hours	EC50	2.5 mg/l
C12-14-tert-alkyl amines	68955-53-3	Green algae	Experimental	72 hours	NOEC	0.05 mg/l

C12-14-tert-alkyl amines	68955-53-3	Rainbow trout	Experimental	96 days	NOEC	0.078 mg/l
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	90-72-2	N/A	Experimental	96 hours	LC50	718 mg/l
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	90-72-2	Common Carp	Experimental	96 hours	LC50	>100 mg/l
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	90-72-2	Green algae	Experimental	72 hours	EC50	46.7 mg/l
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	90-72-2	Water flea	Experimental	48 hours	EC50	>100 mg/l
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	90-72-2	Green algae	Experimental	72 hours	NOEC	6.44 mg/l
Poly(Oxypropylene)Diamine	9046-10-0	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Dimethyl Siloxane, Reaction Product With Silica	67762-90-7	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Nitric acid, ammonium calcium salt	15245-12-2	Green algae	Experimental	72 hours	EC50	>100 mg/l
Nitric acid, ammonium calcium salt	15245-12-2	Water flea	Experimental	48 hours	EC50	>100 mg/l
Nitric acid, ammonium calcium salt	15245-12-2	Fathead minnow	Estimated	32 days	NOEC	157 mg/l
Nitric acid, ammonium calcium salt	15245-12-2	Green algae	Experimental	72 hours	NOEC	100 mg/l
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Golden Orfe	Experimental	96 hours	LC50	>1,000 mg/l
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Green algae	Experimental	72 hours	ErC50	>500 mg/l
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Water flea	Experimental	48 hours	EC50	218.16 mg/l

3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Green algae	Experimental	72 hours	ErC10	5.4 mg/l
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Bacteria	Experimental	17 hours	EC50	4,000 mg/l
Bis[(Dimethylamino)Methyl]Phenol	71074-89-0	N/A	Data not available or insufficient for classification	N/A	N/A	NA
Poly(Oxypropylene)Triamine	39423-51-3	Activated sludge	Experimental	30 minutes	EC20	130 mg/l
Poly(Oxypropylene)Triamine	39423-51-3	Green algae	Experimental	72 hours	EC50	4.4 mg/l
Poly(Oxypropylene)Triamine	39423-51-3	Rainbow trout	Experimental	96 hours	LC50	>100 mg/l
Poly(Oxypropylene)Triamine	39423-51-3	Water flea	Experimental	48 hours	EC50	13 mg/l
Poly(Oxypropylene)Triamine	39423-51-3	Green algae	Experimental	72 hours	NOEC	1 mg/l
Toluene	108-88-3	Coho Salmon	Experimental	96 hours	LC50	5.5 mg/l
Toluene	108-88-3	Grass Shrimp	Experimental	96 hours	LC50	9.5 mg/l
Toluene	108-88-3	Green algae	Experimental	72 hours	EC50	12.5 mg/l
Toluene	108-88-3	Leopard frog	Experimental	9 days	LC50	0.39 mg/l
Toluene	108-88-3	Pink Salmon	Experimental	96 hours	LC50	6.41 mg/l
Toluene	108-88-3	Water flea	Experimental	48 hours	EC50	3.78 mg/l
Toluene	108-88-3	Coho Salmon	Experimental	40 days	NOEC	1.39 mg/l
Toluene	108-88-3	Diatom	Experimental	72 hours	NOEC	10 mg/l
Toluene	108-88-3	Water flea	Experimental	7 days	NOEC	0.74 mg/l
Toluene	108-88-3	Activated sludge	Experimental	12 hours	IC50	292 mg/l
Toluene	108-88-3	Bacteria	Experimental	16 hours	NOEC	29 mg/l
Toluene	108-88-3	Bacteria	Experimental	24 hours	EC50	84 mg/l
Toluene	108-88-3	Redworm	Experimental	28 days	LC50	>150 mg per kg of bodyweight
Toluene	108-88-3	Soil microbes	Experimental	28 days	NOEC	<26 mg/kg (Dry Weight)

12.2. Persistence and degradability

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
Aliphatic diamine polymer	68911-25-1	Experimental Biodegradation	28 days	BOD	0 %BOD/ThOD	OECD 301F - Manometric respirometry
Silica, vitreous	60676-86-0	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Butadiene Acrylonitrile Polymer	68683-29-4	Data not availbl-insufficient	N/A	N/A	N/A	N/A
C12-14-tert-alkyl amines	68955-53-3	Experimental Biodegradation	28 days	BOD	22 %BOD/ThOD	OECD 301D - Closed bottle test

Tris(2,4,6-Dimethylamino monomethyl)Phenol	90-72-2	Experimental Biodegradation	28 days	BOD	4 %BOD/ThOD	OECD 301D - Closed bottle test
Poly(Oxypropylene)Diamine	9046-10-0	Analogous Compound Biodegradation	28 days	CO2 evolution	0 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
Dimethyl Siloxane, Reaction Product With Silica	67762-90-7	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Nitric acid, ammonium calcium salt	15245-12-2	Data not availbl-insufficient	N/A	N/A	N/A	N/A
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Experimental Biodegradation	25 days	CO2 evolution	-8 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
Bis[(Dimethylamino)Methyl]Phenol	71074-89-0	Modeled Biodegradation	28 days	BOD	41 %CO2 evolution/THCO2 evolution	Catalogic™
Poly(Oxypropylene)Triamine	39423-51-3	Experimental Biodegradation	28 days	BOD	<5 %BOD/ThOD	OECD 301F - Manometric respirometry
Toluene	108-88-3	Experimental Biodegradation	20 days	BOD	80 %BOD/ThOD	APHA Std Meth Water/Wastewater
Toluene	108-88-3	Experimental Photolysis		Photolytic half-life (in air)	5.2 days (t 1/2)	

12.3 : Bioaccumulative potential

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
Aliphatic diamine polymer	68911-25-1	Modeled Bioconcentration		Bioaccumulation factor	42	Catalogic™
Aliphatic diamine polymer	68911-25-1	Modeled Bioconcentration		Log Kow	11.7	Episuite™
Silica, vitreous	60676-86-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Butadiene Acrylonitrile Polymer	68683-29-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
C12-14-tert-alkyl amines	68955-53-3	Estimated Bioconcentration		Log Kow	2.9	
Tris(2,4,6-Dimethylamino monomethyl)Phenol	90-72-2	Experimental Bioconcentration		Log Kow	-0.66	830.7550 Part.Coef Shake Flask
Poly(Oxypropy	9046-10-0	Data not	N/A	N/A	N/A	N/A

lene)Diamine		available or insufficient for classification				
Dimethyl Siloxane, Reaction Product With Silica	67762-90-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Nitric acid, ammonium calcium salt	15245-12-2	Estimated Bioconcentration		Log Kow	-3.1	OECD 107 log Kow shke flsk mtd
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Experimental Bioconcentration		Log Kow	-1.25	
Bis[(Dimethylamino)Methyl]Phenol	71074-89-0	Modeled Bioconcentration		Log Kow	-2.34	ACD/Labs ChemSketch™
Poly(Oxypropylene)Triamine	39423-51-3	Experimental Bioconcentration		Log Kow	-1.13	
Toluene	108-88-3	Experimental BCF - Other	72 hours	Bioaccumulation factor	90	
Toluene	108-88-3	Experimental Bioconcentration		Log Kow	2.73	

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
In accordance with the Hazardous Substances (Disposal) Notice 2017 and the relevant criteria of the HSNO Act 1996.

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. If no other disposal options are available, waste product that has been completely cured or polymerized may be placed in a landfill properly designed for industrial waste. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

Packaging (that may or may not contain any residual substance) may be lawfully disposed of by householders or other consumers through public or commercial waste collection services.

SECTION 14: Transport Information

New Zealand Land Transport Rule: Dangerous Goods - Road/Rail Transport
UN No.: UN3267

Proper Shipping Name: CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. , (Alkyl Amines, Bis(3-Aminopropyl) Ether of Diethylene Glycol)
Class/Division: 8
Sub Risk: Not applicable.
Packing Group: II
Special Instructions: Limited quantity may apply
Hazchem Code: 2X
IERG: 37

International Air Transport Association (IATA) - Air Transport
UN No.: UN3267
Proper Shipping Name: CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. , (Alkyl Amines, Bis(3-Aminopropyl) Ether of Diethylene Glycol)
Class/Division: 8
Sub Risk: Not applicable.
Packing Group: II

International Maritime Dangerous Goods Code (IMDG) - Marine Transport
UN No.: UN3267
Proper Shipping Name: CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. , (Alkyl Amines, Bis(3-Aminopropyl) Ether of Diethylene Glycol)
Class/Division: 8
Sub Risk: Not applicable.
Packing Group: II
Marine Pollutant: Not applicable.
Special Instructions: Limited quantity may apply

SECTION 15: Regulatory information

HSNO Approval number	HSR002658
Group standard name	Surface Coatings and Colourants (Corrosive) Group Standard 2020
HSNO Hazard classification	Refer to Section 2: Hazard identification

NZ Inventory of Chemicals (NZIoC) Status
All applicable chemical ingredients in this material are in compliance with NZIoC listing requirements.

Controls in accordance with The Health and Safety at Work Act 2015, Health and Safety at Work (Hazardous Substances) Regulations 2017 and the HSNO Act 1996, Hazardous Substances (Hazardous Property Controls) Notice 2017

Certified handler	Not required
Location Compliance Certificate	Not required
Hazardous atmosphere zone	Not required
Fire extinguishers	Not required
Emergency response plan	100 L or 100 kg (for Hazardous to the aquatic environment Category 1 substances); or 1 000 L or 1 000 kg (for Acute toxicity Category 4, Skin sensitisation Category 1, Respiratory sensitisation Category 1, Skin corrosion Category 1B, Hazardous to the aquatic environment Category 2 or Hazardous to the aquatic environment Category 3 substances); or 10 000 L or 10 000 kg (for all other substances)
Secondary containment	100 L or 100 kg (for Hazardous to the aquatic environment Category 1 substances); or 1 000 L or 1 000 kg (for Acute toxicity Category 4, Skin sensitisation Category 1, Respiratory sensitisation Category 1, Skin corrosion Category 1B, Hazardous to the aquatic environment Category 2 or Hazardous to the aquatic environment Category 3 substances); or 10 000 L or 10 000 kg (for all other substances)

Tracking	Not required
Warning signage	100 L or 100 kg (for Hazardous to the aquatic environment Category 1 substances); or 250 L or 250 kg (for Skin corrosion Category 1B substances); or 1 000 L or 1 000 kg (for all other substances)

SECTION 16: Other information

Revision information:
Complete document review.

Document group:	19-0736-9	**Version number:**	2.00
Issue Date:	19/04/2023	**Supersedes date:**	14/04/2019

Key to abbreviations and acronyms
GHS refers to the Globally Harmonised System of Classification and Labelling of Chemicals, 7th revised edition of 2017
HSNO means Hazardous Substances and New Organisms Act 1996

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Safety Data Sheet

Document group:	34-3781-1	**Version number:**	2.00
Issue Date:	30/04/2023	**Supersedes date:**	14/04/2019

This Safety Data Sheet has been prepared in accordance with the New Zealand, Hazardous Substances (Safety Data Sheets) Notice 2017.

SECTION 1: Identification

1.1. Product identifier
3M™ Panel Bonding Adhesive 08116 (Base) Part B

1.2. Recommended use and restrictions on use

Recommended use
Automotive. Panel Bonding Adhesive

For Industrial or Professional use only

1.3. Supplier's details

Address:	3M New Zealand Ltd, 94 Apollo Drive, Rosedale 0632, Auckland
Telephone:	(09) 477 4040
E Mail:	innovation@nz.mmm.com
Website:	3m.co.nz

1.4. Emergency telephone number
24 hr Medical Emergency, National Poisons Centre, 0800 764 766 (0800 POISON)

SECTION 2: Hazard identification

Classified as hazardous in accordance with the relevant criteria of the HSNO Act 1996 and the Hazardous Substances (Hazard Classification) Notice 2020.
Refer to Section 14 of this Safety Data Sheet for product Dangerous Goods Classification.

2.1. Classification of the substance or mixture
Skin Corrosion/Irritation: Category 2
Serious Eye Damage/Irritation: Category 2
Skin Sensitiser: Category 1
Germ Cell Mutagenicity: Category 2
Carcinogenicity: Category 2
Reproductive Toxicity: Category 1B
Chronic Aquatic Toxicity: Category 2

2.2. Label elements
SIGNAL WORD

Danger

Symbols:
Exclamation mark |Health Hazard |Environment |

Pictograms

HAZARD STATEMENTS:

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H411	Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

General

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

Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280K	Wear protective gloves and respiratory protection.

Response

P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313	IF eye irritation persists: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.

Storage

P405	Store locked up.

Disposal

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

SECTION 3: Composition/information on ingredients

Ingredient	CAS Nbr	% by Weight
4,4'-isopropylidenediphenol-epichlorohydrin polymer	25068-38-6	30 - 60
Glass beads	Trade Secret	10 - 30
Acrylate polymer	Trade Secret	< 15
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	7 - 13
Silica, vitreous	60676-86-0	7 - 13
Glass	Trade Secret	3 - 7
Silicon dioxide	7631-86-9	1 - 5
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	2530-83-8	0.5 - 1.5
Carbon black	1333-86-4	0.1 - 1
Toluene	108-88-3	< 0.2

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.
A product risk assessment is recommended to determine if eye wash facilities may be required when using this product in the workplace.

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

4.2. Most important symptoms and effects, both acute and delayed
The most important symptoms and effects based on the CLP classification include:

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.

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.

5.4. Hazchem code: Not applicable.

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 dykes to prevent entry into sewer systems or bodies of water.

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

SECTION 7: Handling and storage

Refer to Section 15 - Controls for more information

7.1. Precautions for safe handling
Keep out of reach of children. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Use personal protective equipment (eg. gloves, respirators…) as required.

7.2. Conditions for safe storage including any incompatibilities
No special storage requirements.

7.3. Certified handler
Not required

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
Toluene	108-88-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcinogen, Ototoxicant
Toluene	108-88-3	New Zealand WES	TWA(8 hours):75 mg/m3(20 ppm);STEL(15 minutes):377 mg/m3(100 ppm)	Skin
Carbon black	1333-86-4	ACGIH	TWA(inhalable fraction):3 mg/m3	A3: Confirmed animal carcinogen.
Carbon black	1333-86-4	New Zealand WES	TWA(8 hours): 3 mg/m3	Suspected human carcinogen.
Silica, vitreous	60676-86-0	New Zealand WES	TWA(as respirable dust)(8 hours): 0.2 mg/m3	
Dust, inert or nuisance	7631-86-9	New Zealand	TWA(as respirable dust)(8	

		WES	hours):3 mg/m3;TWA(as inhalable dust)(8 hours):10 mg/m3	
Glass	Trade Secret	New Zealand WES	TWA(8 hours):10 mg/m3	
Glass beads	Trade Secret	Manufacturer determined	TWA(as non-fibrous, respirable)(8 hours):3 mg/m3;TWA(as non-fibrous, inhalable fraction)(8 hours):10 mg/m3	
Glass beads	Trade Secret	ACGIH	TWA(as fiber):0.2 fiber/cc	A2: Suspected human carcin.
Glass beads	Trade Secret	ACGIH	TWA(as fiber):1 fiber/cc	A3: Confirmed animal carcinogen.
Glass beads	Trade Secret	ACGIH	TWA(as fiber):1 fiber/cc	A4: Not class. as human carcinogin
Glass beads	Trade Secret	ACGIH	TWA(inhalable fraction):5 mg/m3	A4: Not class. as human carcinogin
Glass beads	Trade Secret	New Zealand WES	TWA(Respirable fibers)(8 hours):1 f/mL;TWA(as respirable dust)(8 hours):1 f/mL;TWA(as inhalable dust)(8 hours):5 mg/m3	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
New Zealand WES : New Zealand Workplace Exposure Standards.
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
ppm: parts per million
mg/m³: milligrams per cubic metre
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

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

Refer AS/NZS 1336 - Recommended practices for occupational eye protection and for performance specifications AS/NZS 1337, Parts 1 - 6 - Personal eye-protection.

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

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

Respiratory protection

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

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

Refer AS/NZS 1715 - Selection, use and maintenance of respiratory protective equipment and AS/NZS 1716 - Respiratory protective devices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Viscous.
Colour	Black
Odour	Characteristic Odour
Odour threshold	*No data available.*
pH	*Not applicable.*
Melting point/Freezing point	*Not applicable.*
Boiling point/Initial boiling point/Boiling range	> 148.9 ºC
Flash point	Flash point > 93 °C (200 °F)
Evaporation rate	< 1 [*Ref Std:*BUOAC=1]
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	*No data available.*
Flammable Limits(UEL)	*No data available.*
Vapour pressure	< 666.6 Pa [@ 20 ºC]
Vapor Density and/or Relative Vapor Density	*No data available.*
Density	1.2 g/ml
Relative density	1.2 [*Ref Std:*WATER=1]
Water solubility	*No data available.*
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Autoignition temperature	*No data available.*
Decomposition temperature	*No data available.*
Viscosity/Kinematic Viscosity	> 100,000 mPa-s
Volatile organic compounds (VOC)	1.4 % weight [*Test Method:*calculated per CARB title 2]
Volatile organic compounds (VOC)	17 g/l [*Test Method:*calculated SCAQMD rule 443.1]
Percent volatile	*No data available.*
VOC less H2O & exempt solvents	17 g/l [*Test Method:*calculated SCAQMD rule 443.1]

SECTION 10: Stability and reactivity

10.1 Reactivity
This material is considered to be non reactive under normal use conditions

10.2 Chemical stability
Stable.

10.3 Possibility of hazardous reactions
Hazardous polymerisation will not occur.

10.4 Conditions to avoid
None known.

10.5 Incompatible materials
None known.

10.6 Hazardous decomposition products

Substance	Condition
Aldehydes.	Not specified.
Carbon monoxide.	Not specified.
Carbon dioxide.	Not specified.
Hydrogen Chloride	Not specified.

SECTION 11: Toxicological information

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

11.1 Information on Toxicological effects

Signs and Symptoms of Exposure

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

Inhalation
Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. 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. May cause additional health effects (see below).

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

Ingestion
Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea. May cause additional health effects (see below).

Additional Health Effects:

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	Ingestion		No data available; calculated ATE >5,000 mg/kg
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Dermal	Rat	LD50 > 1,600 mg/kg
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Ingestion	Rat	LD50 > 1,000 mg/kg
Glass beads	Dermal		LD50 estimated to be > 5,000 mg/kg
Glass beads	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Silica, vitreous	Dermal	Rabbit	LD50 > 5,000 mg/kg
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Ingestion	Rat	LD50 1,000 mg/kg
Silica, vitreous	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Silica, vitreous	Ingestion	Rat	LD50 > 5,110 mg/kg
Acrylate polymer	Dermal	Rabbit	LD50 > 5,000 mg/kg
Acrylate polymer	Ingestion	Rat	LD50 > 5,000 mg/kg
Glass	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
Glass	Ingestion	Professional judgement	LD50 estimated to be > 5,000 mg/kg
Silicon dioxide	Dermal	Rabbit	LD50 > 5,000 mg/kg
Silicon dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Silicon dioxide	Ingestion	Rat	LD50 > 5,110 mg/kg
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Dermal	Rabbit	LD50 4,000 mg/kg
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.3 mg/l
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Ingestion	Rat	LD50 7,010 mg/kg
Carbon black	Dermal	Rabbit	LD50 > 3,000 mg/kg
Carbon black	Ingestion	Rat	LD50 > 8,000 mg/kg
Toluene	Dermal	Rat	LD50 12,000 mg/kg
Toluene	Inhalation-Vapor (4 hours)	Rat	LC50 30 mg/l
Toluene	Ingestion	Rat	LD50 5,550 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Rabbit	Mild irritant
Glass beads	Professional judgement	No significant irritation

1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	In vitro data	Irritant
Silica, vitreous	Rabbit	No significant irritation
Acrylate polymer	Professional judgement	Minimal irritation
Silicon dioxide	Rabbit	No significant irritation
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Rabbit	Mild irritant
Carbon black	Rabbit	No significant irritation
Toluene	Rabbit	Irritant

Serious Eye Damage/Irritation

Name	Species	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Rabbit	Moderate irritant
Glass beads	Professional judgement	No significant irritation
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	In vitro data	No significant irritation
Silica, vitreous	Rabbit	No significant irritation
Acrylate polymer	Professional judgement	Mild irritant
Silicon dioxide	Rabbit	No significant irritation
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Rabbit	Corrosive
Carbon black	Rabbit	No significant irritation
Toluene	Rabbit	Moderate irritant

Sensitisation:

Skin Sensitisation

Name	Species	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Human and animal	Sensitising
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	similar compounds	Sensitising
Silica, vitreous	Human and animal	Not classified
Silicon dioxide	Human and animal	Not classified
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Guinea pig	Not classified
Toluene	Guinea pig	Not classified

Respiratory Sensitisation

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

Germ Cell Mutagenicity

Name	Route	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer	In vivo	Not mutagenic

4,4'-isopropylidenediphenol-epichlorohydrin polymer	In Vitro	Some positive data exist, but the data are not sufficient for classification
Glass beads	In Vitro	Some positive data exist, but the data are not sufficient for classification
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	In Vitro	Mutagenic; structurally related to germ cell mutagens
Silica, vitreous	In Vitro	Not mutagenic
Silicon dioxide	In Vitro	Not mutagenic
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	In vivo	Not mutagenic
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	In Vitro	Some positive data exist, but the data are not sufficient for classification
Carbon black	In Vitro	Not mutagenic
Carbon black	In vivo	Some positive data exist, but the data are not sufficient for classification
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Glass beads	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Silica, vitreous	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Silicon dioxide	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Dermal	Mouse	Not carcinogenic
Carbon black	Dermal	Mouse	Not carcinogenic
Carbon black	Ingestion	Mouse	Not carcinogenic
Carbon black	Inhalation	Rat	Carcinogenic.
Toluene	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Toluene	Inhalation	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
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
Silica, vitreous	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Silica, vitreous	Inhalation	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Silica, vitreous	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
Silicon dioxide	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Silicon dioxide	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Silicon dioxide	Ingestion	Not classified for development	Rat	NOAEL 1,350	during organogenesis

				mg/kg/day	
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Ingestion	Not classified for development	Rat	NOAEL 3,000 mg/kg/day	during organogenesis
Toluene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	Not classified for male reproduction	Rat	NOAEL 2.3 mg/l	1 generation
Toluene	Ingestion	Toxic to development	Rat	LOAEL 520 mg/kg/day	during gestation
Toluene	Inhalation	Toxic to development	Human	NOAEL Not available	poisoning and/or abuse

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Toluene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Toluene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL 0.004 mg/l	3 hours
Toluene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Ingestion	auditory system | heart | endocrine system | hematopoietic system | liver | eyes | kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Glass beads	Inhalation	respiratory system	Not classified	Human	NOAEL not available	occupational exposure
Silica, vitreous	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Silicon dioxide	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Ingestion	heart | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | nervous system |	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days

		kidney and/or bladder | respiratory system				
Carbon black	Inhalation	pneumoconiosis	Not classified	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	auditory system | eyes | olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	nervous system	May cause damage to organs though prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 2.3 mg/l	15 months
Toluene	Inhalation	heart | liver | kidney and/or bladder	Not classified	Rat	NOAEL 11.3 mg/l	15 weeks
Toluene	Inhalation	endocrine system	Not classified	Rat	NOAEL 1.1 mg/l	4 weeks
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL Not available	20 days
Toluene	Inhalation	bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 1.1 mg/l	8 weeks
Toluene	Inhalation	hematopoietic system | vascular system	Not classified	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	gastrointestinal tract	Not classified	Multiple animal species	NOAEL 11.3 mg/l	15 weeks
Toluene	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 625 mg/kg/day	13 weeks
Toluene	Ingestion	heart	Not classified	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	liver | kidney and/or bladder	Not classified	Multiple animal species	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	hematopoietic system	Not classified	Mouse	NOAEL 600 mg/kg/day	14 days
Toluene	Ingestion	endocrine system	Not classified	Mouse	NOAEL 105 mg/kg/day	28 days
Toluene	Ingestion	immune system	Not classified	Mouse	NOAEL 105 mg/kg/day	4 weeks

Aspiration Hazard

Name	Value
Toluene	Aspiration hazard

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

SECTION 12: Ecological information

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

12.1. Toxicity
Ecotoxic to the aquatic environment.
Acute Aquatic Toxicity: Category 2
Chronic Aquatic Toxicity: Category 2

No product test data available.

Material	CAS Number	Organism	Type	Exposure	Test endpoint	Test result
4,4'-isopropylidenediphenol-epichlorohydrin polymer	25068-38-6	Activated sludge	Estimated	3 hours	IC50	>100 mg/l
4,4'-isopropylidenediphenol-epichlorohydrin polymer	25068-38-6	Green algae	Estimated	72 hours	EC50	>11 mg/l
4,4'-isopropylidenediphenol-epichlorohydrin polymer	25068-38-6	Rainbow trout	Estimated	96 hours	LC50	2 mg/l
4,4'-isopropylidenediphenol-epichlorohydrin polymer	25068-38-6	Water flea	Estimated	48 hours	EC50	1.8 mg/l
4,4'-isopropylidenediphenol-epichlorohydrin polymer	25068-38-6	Green algae	Estimated	72 hours	NOEC	4.2 mg/l
4,4'-isopropylidenediphenol-epichlorohydrin polymer	25068-38-6	Water flea	Estimated	21 days	NOEC	0.3 mg/l
Glass beads	Trade Secret	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
Glass beads	Trade Secret	Water flea	Experimental	72 hours	EC50	>1,000 mg/l
Glass beads	Trade Secret	Zebra Fish	Experimental	96 hours	LC50	>1,000 mg/l
Glass beads	Trade Secret	Green algae	Experimental	72 hours	NOEC	>=1,000 mg/l
Acrylate polymer	Trade Secret	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	Bacteria	Estimated	18 hours	EC50	10,264 mg/l
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	N/A	Experimental	72 hours	EC50	38 mg/l
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	Water flea	Experimental	48 hours	EC50	71 mg/l
1,4-Bis[(2,3-	14228-73-0	N/A	Experimental	72 hours	EC10	18 mg/l

epoxypropoxy) methyl]cyclohexane						
Silica, vitreous	60676-86-0	Common Carp	Experimental	72 hours	LC50	>10,000 mg/l
Glass	Trade Secret	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Silicon dioxide	7631-86-9	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
[3-(2,3-Epoxypropoxy) propyl] trimethoxysilane	2530-83-8	Common Carp	Experimental	96 hours	LC50	55 mg/l
[3-(2,3-Epoxypropoxy) propyl] trimethoxysilane	2530-83-8	Green algae	Experimental	96 hours	ErC50	350 mg/l
[3-(2,3-Epoxypropoxy) propyl] trimethoxysilane	2530-83-8	Invertebrate	Experimental	48 hours	LC50	324 mg/l
[3-(2,3-Epoxypropoxy) propyl] trimethoxysilane	2530-83-8	Green algae	Experimental	96 hours	NOEC	130 mg/l
[3-(2,3-Epoxypropoxy) propyl] trimethoxysilane	2530-83-8	Water flea	Experimental	21 days	NOEC	100 mg/l
[3-(2,3-Epoxypropoxy) propyl] trimethoxysilane	2530-83-8	Activated sludge	Experimental	3 hours	EC50	>100 mg/l
Carbon black	1333-86-4	Activated sludge	Experimental	3 hours	EC50	>=100 mg/l
Carbon black	1333-86-4	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Toluene	108-88-3	Coho Salmon	Experimental	96 hours	LC50	5.5 mg/l
Toluene	108-88-3	Grass Shrimp	Experimental	96 hours	LC50	9.5 mg/l
Toluene	108-88-3	Green algae	Experimental	72 hours	EC50	12.5 mg/l
Toluene	108-88-3	Leopard frog	Experimental	9 days	LC50	0.39 mg/l
Toluene	108-88-3	Pink Salmon	Experimental	96 hours	LC50	6.41 mg/l
Toluene	108-88-3	Water flea	Experimental	48 hours	EC50	3.78 mg/l
Toluene	108-88-3	Coho Salmon	Experimental	40 days	NOEC	1.39 mg/l

Toluene	108-88-3	Diatom	Experimental	72 hours	NOEC	10 mg/l
Toluene	108-88-3	Water flea	Experimental	7 days	NOEC	0.74 mg/l
Toluene	108-88-3	Activated sludge	Experimental	12 hours	IC50	292 mg/l
Toluene	108-88-3	Bacteria	Experimental	16 hours	NOEC	29 mg/l
Toluene	108-88-3	Bacteria	Experimental	24 hours	EC50	84 mg/l
Toluene	108-88-3	Redworm	Experimental	28 days	LC50	>150 mg per kg of bodyweight
Toluene	108-88-3	Soil microbes	Experimental	28 days	NOEC	<26 mg/kg (Dry Weight)

12.2. Persistence and degradability

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
4,4'-isopropylidene diphenol-epichlorohydrin polymer	25068-38-6	Estimated Biodegradation	28 days	BOD	5 %BOD/COD	OECD 301F - Manometric respirometry
4,4'-isopropylidene diphenol-epichlorohydrin polymer	25068-38-6	Estimated Hydrolysis		Hydrolytic half-life	117 hours (t 1/2)	
Glass beads	Trade Secret	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Acrylate polymer	Trade Secret	Data not availbl-insufficient	N/A	N/A	N/A	N/A
1,4-Bis[(2,3-epoxypropoxy) methyl]cyclohexane	14228-73-0	Experimental Biodegradation	28 days	CO2 evolution	1.3 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
Silica, vitreous	60676-86-0	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Glass	Trade Secret	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Silicon dioxide	7631-86-9	Data not availbl-insufficient	N/A	N/A	N/A	N/A
[3-(2,3-Epoxypropoxy) propyl] trimethoxysilane	2530-83-8	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	37 % removal of DOC	EC C.4.A. DOC Die-Away Test
[3-(2,3-Epoxypropoxy) propyl] trimethoxysilane	2530-83-8	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	6.5 hours (t 1/2)	OECD 111 Hydrolysis func of pH
Carbon black	1333-86-4	Data not	N/A	N/A	N/A	N/A

		availbl-insufficient				
Toluene	108-88-3	Experimental Biodegradation	20 days	BOD	80 %BOD/ThOD	APHA Std Meth Water/Wastewater
Toluene	108-88-3	Experimental Photolysis		Photolytic half-life (in air)	5.2 days (t 1/2)	

12.3 : Bioaccumulative potential

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
4,4'-isopropylidene diphenol-epichlorohydrin polymer	25068-38-6	Estimated Bioconcentration		Log Kow	3.242	
Glass beads	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Acrylate polymer	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
1,4-Bis[(2,3-epoxypropoxy) methyl]cyclohexane	14228-73-0	Experimental Bioconcentration		Log Kow	2.05	
Silica, vitreous	60676-86-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Glass	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Silicon dioxide	7631-86-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
[3-(2,3-Epoxypropoxy) propyl] trimethoxysilane	2530-83-8	Experimental Bioconcentration		Log Kow	0.5	Episuite™
Carbon black	1333-86-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Toluene	108-88-3	Experimental BCF - Other	72 hours	Bioaccumulation factor	90	
Toluene	108-88-3	Experimental Bioconcentration		Log Kow	2.73	

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
In accordance with the Hazardous Substances (Disposal) Notice 2017 and the relevant criteria of the HSNO Act 1996.

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. If no other disposal options are available, waste product that has been completely cured or polymerized may be placed in a landfill properly designed for industrial waste. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

Packaging (that may or may not contain any residual substance) may be lawfully disposed of by householders or other consumers through public or commercial waste collection services.

SECTION 14: Transport Information

New Zealand Land Transport Rule: Dangerous Goods - Road/Rail Transport
UN No.: Not applicable.
Proper Shipping Name: Not applicable.
Class/Division: Not applicable.
Sub Risk: Not applicable.
Packing Group: Not applicable.

Hazchem Code: Not applicable.
IERG: Not applicable.

International Air Transport Association (IATA) - Air Transport
UN No.: Not applicable.
Proper Shipping Name: Not applicable.
Class/Division: Not applicable.
Sub Risk: Not applicable.
Packing Group: Not applicable.

International Maritime Dangerous Goods Code (IMDG) - Marine Transport
UN No.: Not applicable.
Proper Shipping Name: Not applicable.
Class/Division: Not applicable.
Sub Risk: Not applicable.
Packing Group: Not applicable.
Marine Pollutant: Not applicable.

SECTION 15: Regulatory information

HSNO Approval number	HSR002679
Group standard name	Surface Coatings and Colourants (Carcinogenic) Group Standard 2020

HSNO Hazard classification Refer to Section 2: Hazard identification

NZ Inventory of Chemicals (NZIoC) Status
All applicable chemical ingredients in this material are in compliance with NZIoC listing requirements.

Controls in accordance with The Health and Safety at Work Act 2015, Health and Safety at Work (Hazardous Substances) Regulations 2017 and the HSNO Act 1996, Hazardous Substances (Hazardous Property Controls) Notice 2017

Certified handler	Not required
Location Compliance Certificate	Not required
Hazardous atmosphere zone	Not required
Fire extinguishers	Not required
Emergency response plan	100 L or 100 kg (for Hazardous to the aquatic environment Category 1 substances); or 1 000 L or 1 000 kg (for Acute toxicity Category 4, Skin sensitisation Category 1, Respiratory sensitisation Category 1, Hazardous to the aquatic environment Category 2 or Hazardous to the aquatic environment Category 3 substances); or 10 000 L or 10 000 kg (for all other substances)
Secondary containment	100 L or 100 kg (for Hazardous to the aquatic environment Category 1 substances); or 1 000 L or 1 000 kg (for Acute toxicity Category 4, Skin sensitisation Category 1, Respiratory sensitisation Category 1, Hazardous to the aquatic environment Category 2 or Hazardous to the aquatic environment Category 3 substances); or 10 000 L or 10 000 kg (for all other substances)
Tracking	Not required
Warning signage	100 L or 100 kg (for Hazardous to the aquatic environment Category 1 substances); or 1 000 L or 1 000 kg (for Serious eye damage Category 1, Hazardous to the aquatic environment Category 2 or Hazardous to the aquatic environment Category 3 substances); or 10 000 L or 10 000 kg (for Acute toxicity Category 4 or Hazardous to the aquatic environment Category 4 substances)

SECTION 16: Other information

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Complete document review.

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Key to abbreviations and acronyms
GHS refers to the Globally Harmonised System of Classification and Labelling of Chemicals, 7th revised edition of 2017
HSNO means Hazardous Substances and New Organisms Act 1996

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