Safety Data Sheet

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Document group:	07-1664-7	**Version number:**	1.00
Issue Date:	12/09/2025	**Supersedes date:**	Initial issue.

This Safety Data Sheet has been prepared in accordance with the GHS guidelines & India Hazardous substances (Classification, Labeling & Packaging) Draft Rules 2011.

IDENTIFICATION

1.1. Product identifier
3M™ Panel Bonding Adhesive PN 08115

Product Identification Numbers
60-9800-3093-0

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use
Automotive.

1.3. Supplier's details

Address:	3M India Limited, plot-48-51, Electronic city, Hosur road, Bangalore-560100
Telephone:	080-45543000, contact Product EHS team
E Mail:	productehs.in@mmm.com
Website:	http://solutions.3mindia.co.in

1.4. Emergency telephone number
080-45543000 (Contact hours: 8:00 AM to 5:00 PM)

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 MSDSs for components of this product are:

32-4327-6, 09-3599-9

TRANSPORT INFORMATION

Air Transport (IATA)Regulations
UN No UN3267
Proper Shipping Name CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL AND BIS((DIMETHYLAMINO)METHYL)PHENOL)
Hazard Classs/Division 8
Subsidiary Risk Not applicable

Packing Group: II

Marine Transport (IMDG)
UN No Not applicable
Proper Shipping Name Not applicable (BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL AND BIS((DIMETHYLAMINO)METHYL)PHENOL)
Hazard Classs/Division Not applicable
Subsidiary Risk Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

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3M India SDSs are available at http://solutions.3mindia.co.in

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Document group:	32-4327-6	**Version number:**	1.01
Issue Date:	03/09/2025	**Supersedes date:**	30/05/2016

This Safety Data Sheet has been prepared in accordance with the GHS guidelines & India Hazardous substances (Classification, Labeling & Packaging) Draft Rules 2011.

SECTION 1: Identification

1.1. Product identifier
3M™ Panel Bonding Adhesive Part B PNs 08115, 38315, 38515, 58115

1.2. Recommended use and restrictions on use

Recommended use
Automotive., Structural Panel Bonding Adhesive

1.3. Supplier's details

Address:	3M India Limited, plot-48-51, Electronic city, Hosur road, Bangalore-560100
Telephone:	080-45543000, contact Product EHS team
E Mail:	productehs.in@mmm.com
Website:	http://solutions.3mindia.co.in

1.4. Emergency telephone number
080-45543000 (Contact hours: 8:00 AM to 5:00 PM)

SECTION 2: Hazard identification

Under MSIHC Rules, information is noted below on flammability, acute toxicity and explosivity relevant to this product. In line with international standards, information on other hazard classes and associated precautionary statements relevant to this product are included as well.

2.1. Classification of the substance or mixture
Acute Toxicity (inhalation): Category 5.
Skin Corrosion/Irritation: Category 2.
Serious Eye Damage/Irritation: Category 2A
Skin Sensitizer: Category 1.
Germ Cell Mutagenicity: Category 2.
Carcinogenicity: Category 2.
Reproductive Toxicity: Category 1B.
Acute Aquatic Toxicity: Category 2.
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.
H333	May be harmful if inhaled.
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.
P273	Avoid release to the environment.
P280K	Wear protective gloves and respiratory protection.

Response:

P304 + P312	IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.
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.
P391	Collect spillage.

Storage:

P405	Store locked up.

Disposal:

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

2.3. Other hazards
None known.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
4,4'-isopropylidenediphenol-epichlorohydrin polymer	25068-38-6	30 - 60
Oxide Glass Chemicals	65997-17-3	10 - 30
Silica, vitreous	60676-86-0	7 - 13
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	7 - 13
Acrylate Polymer	Trade Secret	1 - 11
Silicon dioxide	7631-86-9	1 - 5
Dimethyl Siloxane, Reaction Product With Silica	67762-90-7	0.5 - 1.5
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	0.5 - 1.5
Carbon black	1333-86-4	< 0.5
Toluene	108-88-3	< 0.3

SECTION 4: First aid measures

4.1. Description of first aid measures

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

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

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

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

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

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

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

SECTION 5: Fire-fighting measures

5.1. Suitable Extinguishing media
In case of fire: Use a 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
When fire fighting conditions are severe and total thermal decomposition of the product is possible, wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus,tunic and trousers (leggings),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. Use PPE - Exposure Assessment

Use personal protective equipment based on the results of an exposure assessment. Refer to Section 8 for PPE recommendations. If anticipated exposure resulting from an accidental release exceeds the protective capabilities of the PPE listed in Section 8, or are unknown, select PPE that offers an appropriate level of protection. Consider the physical and chemical hazards of the material when doing so. Examples of PPE ensembles for emergency response could include wearing bunker gear for a release of flammable material; wearing chemical protective clothing if the spilled material is a corrosive, a sensitizer, a significant dermal irritant, or can be absorbed through the skin; or donning a positive pressure supplied-air respirator for chemicals with inhalation hazards. For information regarding physical and health hazards, refer to sections 2 and 11 of the SDS.

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

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. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (eg. gloves, respirators…) as required.

7.2. Conditions for safe storage including any incompatibilities

Store away from acids. Store away from strong bases. Store away from oxidising 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	CAS Nbr	Agency	Limit type	Additional comments
Toluene	108-88-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcin, Ototoxicant
Carbon black	1333-86-4	ACGIH	TWA(inhalable fraction):3 mg/m3	A3: Confirmed animal carcin.
Oxide Glass Chemicals	65997-17-3	Manufacturer determined	TWA(as non-fibrous, respirable)(8 hours):3 mg/m3;TWA(as non-fibrous, inhalable fraction)(8 hours):10 mg/m3	
SPECIAL PURPOSE GLASS	65997-17-3	ACGIH	TWA(as fiber):1 fiber/cc	A3: Confirmed animal

FIBERS				carcin.

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

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

8.2.2. Personal protective equipment (PPE)

Eye/face protection

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

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

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

If this product is used in a manner that presents a higher potential for exposure (e.g., spraying, high splash potential, etc.), then use of a protective apron may be necessary. See recommended glove material(s) for determining appropriate apron material(s). If a glove material is not available as an apron, polymer laminate is a suitable option.

Respiratory protection

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

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.
Color	Black
Odor	Mild Acrylic
Odour threshold	*No data available.*
pH	*No data available.*
Melting point/Freezing point: NA	*No data available.*
Boiling point/Initial boiling point/Boiling range	>= 35 ºC

Flash point	>= 104.4 ºC [*Test Method:*Closed Cup]
Evaporation rate	<= 1 Units not available or not applicable. [*Ref Std:*BUOAC=1]
Flammability	Not applicable.
Flammable Limits(LEL)	*No data available.*
Flammable Limits(UEL)	*No data available.*
Vapour pressure	<= 186,158.4 Pa
Relative Vapor Density	*No data available.*
Density	1 kg/l
Density	0.96 g/ml
Relative density	0.96 [*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.*
Kinematic Viscosity	83,333 mm²/sec
Volatile organic compounds (VOC)	15 g/l [*Test Method:*calculated SCAQMD rule 443.1]
Volatile organic compounds (VOC)	1.6 % weight [*Test Method:*calculated per CARB title 2]
Percent volatile	1.6 % weight
VOC less H2O & exempt solvents	15 g/l [*Test Method:*calculated SCAQMD rule 443.1]
Molecular weight	*No data available.*

Particle Characteristics	*Not applicable.*

SECTION 10: Stability and reactivity

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

10.2 Chemical stability
Stable.

10.3 Possibility of hazardous reactions
Hazardous polymerisation will not occur.

10.4 Conditions to avoid
Sparks and/or flames.

10.5 Incompatible materials
Amines.
Strong acids.
Strong bases.
Strong oxidising agents.

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
May be 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
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 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	Inhalation-Dust/Mist(4 hr)		No data available; calculated ATE >5 - =12.5 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Dermal	Rat	LD50 > 1,600 mg/kg
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Ingestion	Rat	LD50 > 1,000 mg/kg
Oxide Glass Chemicals	Dermal		LD50 estimated to be > 5,000 mg/kg
Oxide Glass Chemicals	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
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
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
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
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
Oxide Glass Chemicals	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
Dimethyl Siloxane, Reaction Product With Silica	Rabbit	No significant irritation
Carbon black	Rabbit	No significant irritation
Toluene	Rabbit	Irritant

Serious Eye Damage/Irritation

Name	Species	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Rabbit	Moderate irritant
Oxide Glass Chemicals	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	Mild irritant

	judgement	
Silicon dioxide	Rabbit	No significant irritation
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Rabbit	Corrosive
Dimethyl Siloxane, Reaction Product With Silica	Rabbit	No significant irritation
Carbon black	Rabbit	No significant irritation
Toluene	Rabbit	Moderate irritant

Sensitization:

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
Dimethyl Siloxane, Reaction Product With Silica	Human and animal	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
Oxide Glass Chemicals	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 Vitro	Some positive data exist, but the data are not sufficient for classification
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	In vivo	Some positive data exist, but the data are not sufficient for classification
Dimethyl Siloxane, Reaction Product With Silica	In Vitro	Not mutagenic
Carbon black	In Vitro	Not mutagenic
Carbon black	In vivo	Some positive data exist, but the data are not sufficient for classification
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
Oxide Glass Chemicals	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
Dimethyl Siloxane, Reaction Product With Silica	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Carbon black	Dermal	Mouse	Not carcinogenic
Carbon black	Ingestion	Mouse	Not carcinogenic
Carbon black	Inhalation	Rat	Carcinogenic.
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 mg/kg/day	during organogenesis
[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
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
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
Oxide Glass Chemicals	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 | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Dimethyl Siloxane, Reaction Product With Silica	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Carbon black	Inhalation	pneumoconiosis	Not classified	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	auditory system | nervous system | eyes | olfactory system	Causes damage to organs through 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

Acute aquatic hazard:
GHS Acute 2: Toxic to aquatic life.

Chronic aquatic hazard:
GHS Chronic 2: Toxic to aquatic life with long lasting effects.

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
4,4'-isopropylidenediphenol-	25068-38-6	Activated sludge	Estimated	3 hours	IC50	>100 mg/l

epichlorohydrin polymer						
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
Oxide Glass Chemicals	65997-17-3	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
Oxide Glass Chemicals	65997-17-3	Water flea	Experimental	72 hours	EC50	>1,000 mg/l
Oxide Glass Chemicals	65997-17-3	Zebra Fish	Experimental	96 hours	LC50	>1,000 mg/l
Oxide Glass Chemicals	65997-17-3	Green algae	Experimental	72 hours	NOEC	>=1,000 mg/l
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-epoxypropoxy)methyl]cyclohexane	14228-73-0	N/A	Experimental	72 hours	EC10	18 mg/l
Silica, vitreous	60676-86-0	Common Carp	Experimental	72 hours	LC50	>10,000 mg/l
Acrylate Polymer	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)prop	2530-83-8	Water flea	Experimental	21 days	NOEC	100 mg/l

yl]trimethoxysilane						
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Activated sludge	Experimental	3 hours	EC50	>100 mg/l
Dimethyl Siloxane, Reaction Product With Silica	67762-90-7	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Carbon black	1333-86-4	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
Carbon black	1333-86-4	Zebra Fish	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
Carbon black	1333-86-4	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	100 mg/l
Carbon black	1333-86-4	Activated sludge	Experimental	3 hours	NOEC	>800 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 Nbr	Test type	Duration	Study Type	Test result	Protocol
4,4'-isopropylidenediphenol-epichlorohydrin polymer	25068-38-6	Estimated Biodegradation	28 days	BOD	5 %BOD/COD	OECD 301F - Manometric respirometry
4,4'-isopropylidenediphenol-epichlorohydrin polymer	25068-38-6	Estimated Hydrolysis		Hydrolytic half-life	117 hours (t 1/2)	
Oxide Glass Chemicals	65997-17-3	Data not available-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 available-insufficient	N/A	N/A	N/A	N/A
Acrylate Polymer	Trade Secret	Data not available-insufficient	N/A	N/A	N/A	N/A
Silicon dioxide	7631-86-9	Data not available-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-	2530-83-8	Experimental		Hydrolytic half-life	6.5 hours (t 1/2)	OECD 111 Hydrolysis func

epoxypropoxy)propyl]trimethoxysilane		Hydrolysis		(pH 7)		of pH
Dimethyl Siloxane, Reaction Product With Silica	67762-90-7	Data not available-insufficient	N/A	N/A	N/A	N/A
Carbon black	1333-86-4	Data not available-insufficient	N/A	N/A	N/A	N/A
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 Nbr	Test type	Duration	Study Type	Test result	Protocol
4,4'-isopropylidenediphenol-epichlorohydrin polymer	25068-38-6	Estimated Bioconcentration		Log Kow	3.242	
Oxide Glass Chemicals	65997-17-3	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
Acrylate Polymer	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™
Dimethyl Siloxane, Reaction Product With Silica	67762-90-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
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
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion

products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

SECTION 14: Transport Information

Air Transport (IATA)Regulations

UN No UN3082
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains epoxy resin)
Hazard Classs/Division 9
Subsidiary Risk Not applicable
Packing Group: III

Marine Transport (IMDG)
UN No UN3082
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains epoxy resin)
Hazard Classs/Division 9
Subsidiary Risk Not applicable
Packing Group: III
Environmental Hazards: Not applicable

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 Japan Industrial Safety and Health 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.

Applicable Environmental, Health and Safety Regulations
The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989

The following ingredients are listed as hazardous on Part II of Schedule I of the India Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) rules
Toluene

The following ingredients are classified as hazardous based on the criteria listed under Part I of Schedule I of the India Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) rules:
The product is classified as Non-hazardous as per MSIHC Rules,1989.

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 **Flammability:** 1 **Instability:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Revision information:

Section 14: Packing group (IMO) information was added.
Company Telephone information was modified.
Section 1: Emergency telephone information was modified.
Section 1: Product name information was modified.
Label: GHS Classification information was modified.
Label: GHS Environmental Hazard Statements information was modified.
Label: GHS Precautionary - General information was modified.
Label: GHS Precautionary - Prevention information was modified.
Label: GHS Precautionary - Response information was modified.
Label: Graphic information was modified.
Label: Signal Word information was modified.
Label: Symbol information was modified.
Section 2: Ingredient table information was modified.
Section 04: First Aid - Symptoms and Effects (GHS) information was added.
Section 04: Information on toxicological effects information was deleted.
Section 5: Fire - Advice for fire fighters information information was modified.
Section 6: Accidental release clean-up information information was modified.
Section 6: Accidental release personal information information was modified.
Section 7: Conditions safe storage information was modified.
Section 7: Precautions safe handling information information was modified.
Section 8: Eye/face protection information information was modified.
Section 8: Occupational exposure limit table information was modified.
Section 08: Personal Protection - Apron Statement information was added.
Section 8: Personal Protection - Skin/body information information was deleted.
Section 8: Respiratory protection - recommended respirators information information was modified.
Section 8: Skin protection - protective clothing information information was deleted.
Section 8: Skin protection - recommended gloves information information was modified.
Section 8: Skin protection - recommended gloves text information was added.
Section 8: Skin protection - recommended gloves text information was deleted.
Section 09: Color information was added.
Section 9: Density information information was modified.
Section 9: Flammability (solid, gas) information information was deleted.
Section 09: Flammability information information was added.
Section 09: Kinematic Viscosity information information was added.
Section 09: Odor information was added.
Sections 3 and 9: Odour, colour, grade information information was deleted.
Section 09: Particle Characteristics N/A information was added.
Section 09: Percent Volatile information was added.
Section 9: Property description for optional properties information was added.
Section 9: Property description for optional properties information was deleted.
Section 9: Relative density information information was modified.
Section 09: Vapor Density Value information was added.
Section 9: Vapour density value information was deleted.
Section 9: Vapour pressure value information was modified.

Section 9: Viscosity information information was deleted.
Section 09: VOC Less H2O & Exempt Solvents information was added.
Section 09: Volatile Organic Compounds information was added.
Section 10: Hazardous decomposition or by-products table information was modified.
Section 11: Acute Toxicity table information was modified.
Section 11: Aspiration Hazard Table information was added.
Section 11: Aspiration Hazard text information was deleted.
Section 11: Carcinogenicity Table information was modified.
Section 11: Germ Cell Mutagenicity Table information was modified.
Section 11: Health Effects - Ingestion information information was modified.
Section 11: Health Effects - Inhalation information information was modified.
Section 11: Health Effects - Skin information information was modified.
Section 11: Mutagenicity information information was added.
Section 11: Reproductive Hazards information information was added.
Section 11: Reproductive Toxicity Table information was modified.
Section 11: Respiratory Sensitization Table information was modified.
Section 11: Serious Eye Damage/Irritation Table information was modified.
Section 11: Skin Corrosion/Irritation Table information was modified.
Section 11: Skin Sensitization Table information was modified.
Section 11: Target Organs - Repeated Table information was modified.
Section 11: Target Organs - Single Table information was modified.
Section 12: Chronic aquatic hazard information information was modified.
Section 12: Component ecotoxicity information information was modified.
Section 12: Persistence and Degradability information information was modified.
Section 12:Bioccumulative potential information information was modified.
Section 13: 13.1. Waste disposal note information was modified.
Section 13: Standard Phrase Category Waste GHS information was modified.
Section 14: Environmental hazards information was added.
Section 14: IATA transport hazard classes information was modified.
Section 14: IMO Subsidiary Risk information was added.
Section 14: IMO transport hazard classes information was added.
Section 14: Packing group (IATA) information was modified.
Section 14: Proper Shipping Name (IATA) information was modified.
Section 14: Proper Shipping Name (IMO) information was added.
Section 14: Proper Shipping Name n.o.s. ingredients information was added.
Section 14: Transportation Information information was deleted.
Section 14: UN Number (IATA) information was modified.
Section 14: UN Number (IMO) information was added.
Section 15: Applicable Environmental, Health and Safety Regulations information was modified.
Section 15: MSIHC Ingredients information was modified.
Section 15: MSIHC Part I of Schedule I ingredients information was modified.
Section 15: Regulations - Inventories information was modified.
Sectio 16: UK disclaimer information was deleted.

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Safety Data Sheet

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Document group:	09-3599-9	**Version number:**	1.01
Issue Date:	03/09/2025	**Supersedes date:**	06/04/2020

This Safety Data Sheet has been prepared in accordance with the GHS guidelines & India Hazardous substances (Classification, Labeling & Packaging) Draft Rules 2011.

SECTION 1: Identification

1.1. Product identifier
3M™ Panel Bonding (90 Minutes) Adhesive Part A (Accelerator) PN 08115, 38315, 38515, 58115

1.2. Recommended use and restrictions on use

Recommended use
Automotive., Use with Part B, MSDS 32-4327-6

1.3. Supplier's details

Address:	3M India Limited, plot-48-51, Electronic city, Hosur road, Bangalore-560100
Telephone:	080-45543000, contact Product EHS team
E Mail:	productehs.in@mmm.com
Website:	http://solutions.3mindia.co.in

1.4. Emergency telephone number
080-45543000 (Contact hours: 8:00 AM to 5:00 PM)

SECTION 2: Hazard identification

Under MSIHC Rules, information is noted below on flammability, acute toxicity and explosivity relevant to this product. In line with international standards, information on other hazard classes and associated precautionary statements relevant to this product are included as well.

2.1. Classification of the substance or mixture
Acute Toxicity (oral): Category 5.
Acute Toxicity (dermal): Category 5.
Skin Corrosion/Irritation: Category 1B.
Serious Eye Damage/Irritation: Category 1.
Skin Sensitizer: Category 1B.
Reproductive Toxicity: Category 1B.
Specific Target Organ Toxicity (single exposure): Category 1.
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 | Environment |

Pictograms



HAZARD STATEMENTS:

H303 + H313	May be harmful if swallowed or in contact with skin.
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.
H370	Causes 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.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280J	Wear protective gloves, protective clothing, respiratory protection, eye protection, and face protection.

Response:

P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302 + P312	IF ON SKIN: Call a POISON CENTER or doctor/physician if you feel unwell.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P321	Specific treatment (see Notes to Physician on this label).
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P391	Collect spillage.

Storage:

P405	Store locked up.

Disposal:

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

Notes to Physician:
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 consider as part of the medical management

2.3. Other hazards
Persons previously sensitised to amines may develop a cross-sensitisation reaction to certain other amines. - May cause chemical gastrointestinal burns. All or part of the classification is based on toxicity test data.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
Polymeric Diamide	68911-25-1	30 - 60
Butadiene Acrylonitrile Copolymer	68683-29-4	10 - 30
Silica, vitreous	60676-86-0	10 - 30
Bis(3-Aminopropyl) Ether of Diethylene Glycol	4246-51-9	< 10
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	90-72-2	5 - 10
Dimethyl Siloxane, Reaction Product with Silica	67762-90-7	1 - 5
Amine Epoxy Curing Agent	288-32-4	1 - 5
Nitric acid, ammonium calcium salt	15245-12-2	1 - 5
Bis[(Dimethylamino)Methyl]Phenol	71074-89-0	0.1 - 1.5
N-Aminoethylpiperazine	140-31-8	0.1 - 1
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.

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

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

Skin burns (localized redness, swelling, itching, intense pain, blistering, and tissue destruction). Allergic skin reaction (redness, swelling, blistering, and itching). Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of vision). Central nervous system depression (headache, dizziness, drowsiness, incoordination, nausea, slurred speech, giddiness, and unconsciousness). Target organ effects. See Section 11 for additional details.

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.

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Use PPE - Exposure Assessment Use personal protective equipment based on the results of an exposure assessment. Refer to Section 8 for PPE recommendations. If anticipated exposure resulting from an accidental release exceeds the protective capabilities of the PPE listed in Section 8, or are unknown, select PPE that offers an appropriate level of protection. Consider the physical and chemical hazards of the material when doing so. Examples of PPE ensembles for emergency response could include wearing bunker gear for a release of flammable material; wearing chemical protective clothing if the spilled material is a corrosive, a sensitizer, a significant dermal irritant, or can be absorbed through the skin; or donning a positive pressure supplied-air respirator for chemicals with inhalation hazards. For information regarding physical and health hazards, refer to sections 2 and 11 of the SDS. 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.

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

7.1. Precautions for safe handling
Do not use in a confined area with minimal air exchange. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat,

drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (eg. gloves, respirators…) as required.

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
Toluene	108-88-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcin, Ototoxicant

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

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

8.2.2. Personal protective equipment (PPE)

Eye/face protection

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

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

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

If this product is used in a manner that presents a higher potential for exposure (e.g., spraying, high splash potential, etc.), then use of a protective apron may be necessary. See recommended glove material(s) for determining appropriate apron material(s). If a glove material is not available as an apron, polymer laminate is a suitable option.

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following

respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapours and particulates

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Viscous liquid
Color	Tan
Odor	Slight Amine
Odour threshold	*No data available.*
pH	*Not applicable.*
Melting point/Freezing point: NA	*Not applicable.*
Boiling point/Initial boiling point/Boiling range	>=110 ºC
Flash point	110 ºC [*Test Method:*Closed Cup]
Evaporation rate	<=1 [*Ref Std:*BUOAC=1]
Flammability	Not applicable.
Flammable Limits(LEL)	*No data available.*
Flammable Limits(UEL)	*No data available.*
Vapour pressure	<=26,664.4 Pa [@ 20 ºC]
Relative Vapor Density	*No data available.*
Density	1.2 g/ml
Density	1.2 kg/l
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.*
Kinematic Viscosity	187,500 mm²/sec
Volatile organic compounds (VOC)	4 g/l [*Test Method:*calculated SCAQMD rule 443.1]
Volatile organic compounds (VOC)	0.4 % weight [*Test Method:*calculated per CARB title 2]
Percent volatile	0.4 % weight
VOC less H2O & exempt solvents	4 g/l [*Test Method:*calculated SCAQMD rule 443.1]
Molecular weight	*No data available.*

Particle Characteristics	*Not applicable.*

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
Strong oxidising 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 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
May be 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
May be 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 >2,000 - =5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE >2,000 - =5,000 mg/kg
Polymeric Diamide	Dermal	Rat	LD50 > 2,000 mg/kg
Polymeric Diamide	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 Copolymer	Dermal	Rabbit	LD50 > 3,000 mg/kg
Butadiene Acrylonitrile Copolymer	Ingestion	Rat	LD50 > 15,300 mg/kg
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Dermal	Rat	LD50 1,280 mg/kg
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Ingestion	Rat	LD50 1,000 mg/kg
Bis(3-Aminopropyl) Ether of Diethylene Glycol	Dermal	Rabbit	LD50 2,525 mg/kg
Bis(3-Aminopropyl) Ether of Diethylene Glycol	Ingestion	Rat	LD50 2,850 mg/kg
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
Amine Epoxy Curing Agent	Ingestion	Rat	LD50 970 mg/kg
Amine Epoxy Curing Agent	Dermal	similar compounds	LD50 400 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
Bis[(Dimethylamino)Methyl]Phenol	Ingestion		LD50 estimated to be 300 - 2,000 mg/kg
N-Aminoethylpiperazine	Dermal	Rabbit	LD50 865 mg/kg
N-Aminoethylpiperazine	Ingestion	Rat	LD50 1,470 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
Overall product	Rabbit	Corrosive
Polymeric Diamide	Rat	Irritant
Silica, vitreous	Rabbit	No significant irritation
Butadiene Acrylonitrile Copolymer	Rabbit	Irritant
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Rabbit	Corrosive
Bis(3-Aminopropyl) Ether of Diethylene Glycol	Rabbit	Corrosive
Dimethyl Siloxane, Reaction Product with Silica	Rabbit	No significant irritation
Amine Epoxy Curing Agent	Rabbit	Corrosive
Nitric acid, ammonium calcium salt	similar compounds	No significant irritation

Bis[(Dimethylamino)Methyl]Phenol	similar compounds	Corrosive
N-Aminoethylpiperazine	Rabbit	Corrosive
Toluene	Rabbit	Irritant

Serious Eye Damage/Irritation

Name	Species	Value
Overall product	similar health hazards	Corrosive
Polymeric Diamide	In vitro data	Severe irritant
Silica, vitreous	Rabbit	No significant irritation
Butadiene Acrylonitrile Copolymer	Rabbit	Mild irritant
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Rabbit	Corrosive
Bis(3-Aminopropyl) Ether of Diethylene Glycol	Rabbit	Corrosive
Dimethyl Siloxane, Reaction Product with Silica	Rabbit	No significant irritation
Amine Epoxy Curing Agent	Rabbit	Corrosive
Nitric acid, ammonium calcium salt	Rabbit	Corrosive
Bis[(Dimethylamino)Methyl]Phenol	similar compounds	Corrosive
N-Aminoethylpiperazine	Rabbit	Corrosive
Toluene	Rabbit	Moderate irritant

Sensitization:

Skin Sensitisation

Name	Species	Value
Overall product	Guinea pig	Sensitising
Polymeric Diamide	Guinea pig	Sensitising
Silica, vitreous	Human and animal	Not classified
Butadiene Acrylonitrile Copolymer	Guinea pig	Sensitising
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Guinea pig	Not classified
Bis(3-Aminopropyl) Ether of Diethylene Glycol	Professional judgement	Sensitising
Dimethyl Siloxane, Reaction Product with Silica	Human and animal	Not classified
Nitric acid, ammonium calcium salt	Mouse	Not classified
N-Aminoethylpiperazine	Guinea pig	Sensitising
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
Polymeric Diamide	In Vitro	Not mutagenic

Silica, vitreous	In Vitro	Not mutagenic
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	In Vitro	Not mutagenic
Bis(3-Aminopropyl) Ether of Diethylene Glycol	In Vitro	Not mutagenic
Dimethyl Siloxane, Reaction Product with Silica	In Vitro	Not mutagenic
Amine Epoxy Curing Agent	In Vitro	Not mutagenic
Amine Epoxy Curing Agent	In vivo	Not mutagenic
Nitric acid, ammonium calcium salt	In Vitro	Not mutagenic
N-Aminoethylpiperazine	In vivo	Not mutagenic
N-Aminoethylpiperazine	In Vitro	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
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
Polymeric Diamide	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
Polymeric Diamide	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	29 days
Polymeric Diamide	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
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Ingestion	Not classified for male reproduction	Rat	NOAEL 150 mg/kg/day	2 generation
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Ingestion	Not classified for female reproduction	Rat	NOAEL 50 mg/kg/day	2 generation
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Ingestion	Not classified for development	Rabbit	NOAEL 15 mg/kg/day	during gestation
Bis(3-Aminopropyl) Ether of Diethylene Glycol	Ingestion	Not classified for female reproduction	Rat	NOAEL 600 mg/kg/day	premating into lactation
Bis(3-Aminopropyl) Ether of Diethylene Glycol	Ingestion	Not classified for male reproduction	Rat	NOAEL 600 mg/kg/day	59 days
Bis(3-Aminopropyl) Ether of Diethylene Glycol	Ingestion	Not classified for development	Rat	NOAEL 600 mg/kg/day	premating into lactation
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	during organogenesis

				mg/kg/day	
Amine Epoxy Curing Agent	Ingestion	Toxic to development	Rat	NOAEL 60 mg/kg/day	during organogenesis
N-Aminoethylpiperazine	Ingestion	Not classified for female reproduction	Rat	NOAEL 598 mg/kg/day	premating & during gestation
N-Aminoethylpiperazine	Ingestion	Not classified for male reproduction	Rat	NOAEL 409 mg/kg/day	32 days
N-Aminoethylpiperazine	Ingestion	Toxic to development	Rabbit	NOAEL 75 mg/kg/day	during gestation
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
Polymeric Diamide	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	Irritation Positive	
Polymeric Diamide	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Rat	NOAEL Not available	
Butadiene Acrylonitrile Copolymer	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL not available	
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Bis(3-Aminopropyl) Ether of Diethylene Glycol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Amine Epoxy Curing Agent	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	
N-Aminoethylpiperazine	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		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
Polymeric Diamide	Ingestion	heart | skin | endocrine system | gastrointestinal tract	Not classified	Rat	NOAEL 1,000 mg/kg/day	29 days

		| bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system | vascular system				
Silica, vitreous	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Dermal	skin	Not classified	Rat	NOAEL 25 mg/kg/day	4 weeks
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Dermal	liver | nervous system | auditory system | hematopoietic system | eyes	Not classified	Rat	NOAEL 125 mg/kg/day	4 weeks
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	Ingestion	heart | endocrine system | hematopoietic system | liver | muscles | nervous system | kidney and/or bladder | respiratory system | vascular system | auditory system | skin | gastrointestinal tract | bone, teeth, nails, and/or hair | immune system | eyes	Not classified	Rat	NOAEL 150 mg/kg/day	90 days
Bis(3-Aminopropyl) Ether of Diethylene Glycol	Ingestion	gastrointestinal tract | heart | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system | vascular system	Not classified	Rat	NOAEL 600 mg/kg/day	59 days
Dimethyl Siloxane, Reaction Product with Silica	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Amine Epoxy Curing Agent	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 60 mg/kg/day	90 days
Amine Epoxy Curing Agent	Ingestion	heart | liver | blood | nervous system | eyes	Not classified	Rat	NOAEL 180 mg/kg/day	90 days
N-Aminoethylpiperazine	Dermal	skin	Not classified	Rat	NOAEL 100 mg/kg/day	29 days
N-Aminoethylpiperazine	Dermal	hematopoietic system | nervous system | kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	29 days
N-Aminoethylpiperazine	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 0.2 mg/m3	13 weeks
N-Aminoethylpiperazine	Inhalation	hematopoietic system | eyes | kidney and/or	Not classified	Rat	NOAEL 53.8 mg/m3	13 weeks

		bladder				
N-Aminoethylpiperazine	Ingestion	heart | endocrine system | hematopoietic system | liver | nervous system | kidney and/or bladder	Not classified	Rat	NOAEL 598 mg/kg/day	28 days
Toluene	Inhalation	auditory system | nervous system | eyes | olfactory system	Causes damage to organs through 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

Acute aquatic hazard:

GHS Acute 1: Very toxic to aquatic life.

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

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
Polymeric Diamide	68911-25-1	Fathead minnow	Experimental	96 hours	LL50	2.16 mg/l
Polymeric Diamide	68911-25-1	Green algae	Experimental	72 hours	EL50	0.43 mg/l
Polymeric Diamide	68911-25-1	Water flea	Experimental	48 hours	EL50	0.57 mg/l
Polymeric Diamide	68911-25-1	Green algae	Experimental	72 hours	NOEL	0.28 mg/l
Polymeric Diamide	68911-25-1	Activated sludge	Experimental	3 hours	EC50	410.3 mg/l
Butadiene Acrylonitrile Copolymer	68683-29-4	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Silica, vitreous	60676-86-0	Common Carp	Experimental	72 hours	LC50	>10,000 mg/l
Bis(3-Aminopropyl) Ether of Diethylene Glycol	4246-51-9	Bacteria	Experimental	17 hours	EC50	4,000 mg/l
Bis(3-Aminopropyl) Ether of Diethylene Glycol	4246-51-9	Golden Orfe	Experimental	96 hours	LC50	>1,000 mg/l
Bis(3-Aminopropyl) Ether of Diethylene Glycol	4246-51-9	Green algae	Experimental	72 hours	EC50	>500 mg/l
Bis(3-Aminopropyl) Ether of Diethylene Glycol	4246-51-9	Water flea	Experimental	48 hours	EC50	218.16 mg/l
Bis(3-Aminopropyl) Ether of Diethylene Glycol	4246-51-9	Green algae	Experimental	72 hours	EC10	5.4 mg/l
Tris(2,4,6-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
Amine Epoxy Curing Agent	288-32-4	Green algae	Experimental	72 hours	ErC50	133 mg/l
Amine Epoxy Curing Agent	288-32-4	Water flea	Experimental	48 hours	EC50	341.5 mg/l
Amine Epoxy Curing Agent	288-32-4	Green algae	Experimental	72 hours	NOEC	25 mg/l
Amine Epoxy Curing Agent	288-32-4	Activated sludge	Experimental	30 minutes	EC50	>1,000 mg/l
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
Bis[(Dimethylamino)Methyl]Phenol	71074-89-0	N/A	Data not available or insufficient for classification	N/A	N/A	NA
N-Aminoethylpiperazine	140-31-8	Bacteria	Experimental	17 hours	EC10	100 mg/l
N-Aminoethylpiperazine	140-31-8	Golden Orfe	Experimental	96 hours	LC50	368 mg/l
N-Aminoethylpiperazine	140-31-8	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
N-Aminoethylpiperazine	140-31-8	Water flea	Experimental	48 hours	EC50	58 mg/l
N-Aminoethylpiperazine	140-31-8	Green algae	Experimental	72 hours	NOEC	31 mg/l
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 Nbr	Test type	Duration	Study Type	Test result	Protocol
Polymeric Diamide	68911-25-1	Experimental Biodegradation	28 days	BOD	0 %BOD/ThOD	OECD 301F - Manometric respirometry
Butadiene Acrylonitrile Copolymer	68683-29-4	Data not available-insufficient	N/A	N/A	N/A	N/A
Silica, vitreous	60676-86-0	Data not available-insufficient	N/A	N/A	N/A	N/A
Bis(3-Aminopropyl) Ether of Diethylene Glycol	4246-51-9	Experimental Biodegradation	25 days	CO2 evolution	-8 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
Bis(3-Aminopropyl) Ether of Diethylene Glycol	4246-51-9	Estimated Photolysis		Photolytic half-life (in air)	2.96 hours (t 1/2)	
Tris(2,4,6-	90-72-2	Experimental	28 days	BOD	4 %BOD/ThOD	OECD 301D - Closed bottle

Dimethylaminomonomethyl)Phenol		Biodegradation				test
Amine Epoxy Curing Agent	288-32-4	Experimental Biodegradation	18 days	Dissolv. Organic Carbon Deplet	98 %removal of DOC	OECD 301A - DOC Die Away Test
Amine Epoxy Curing Agent	288-32-4	Experimental Aquatic Inherent Biodegrad.	8 days	CO2 evolution	83 %removal of DOC	OECD 302B Zahn-Wellens/EVPA
Amine Epoxy Curing Agent	288-32-4	Experimental Biodegradation	19 days	Percent degraded	86 %removal of DOC	OECD 303A - Simulated Aerobic
Dimethyl Siloxane, Reaction Product with Silica	67762-90-7	Data not available-insufficient	N/A	N/A	N/A	N/A
Nitric acid, ammonium calcium salt	15245-12-2	Data not available-insufficient	N/A	N/A	N/A	N/A
Bis[(Dimethylamino)Methyl]Phenol	71074-89-0	Modeled Biodegradation	28 days	BOD	41 %CO2 evolution/THCO2 evolution	Catalogic™
N-Aminoethylpiperazine	140-31-8	Experimental Biodegradation	28 days	BOD	0 %BOD/ThOD	OECD 301C - MITI test (I)
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 Nbr	Test type	Duration	Study Type	Test result	Protocol
Polymeric Diamide	68911-25-1	Modeled Bioconcentration		Bioaccumulation factor	42	Catalogic™
Polymeric Diamide	68911-25-1	Modeled Bioconcentration		Log Kow	11.7	Episuite™
Butadiene Acrylonitrile Copolymer	68683-29-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Silica, vitreous	60676-86-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Bis(3-Aminopropyl) Ether of Diethylene Glycol	4246-51-9	Experimental Bioconcentration		Log Kow	-1.25	
Tris(2,4,6-Dimethylaminomonomethyl)Phenol	90-72-2	Experimental Bioconcentration		Log Kow	-0.66	830.7550 Part.Coef Shake Flask
Amine Epoxy Curing Agent	288-32-4	Experimental Bioconcentration		Log Kow	-0.02	OECD 107 log Kow shke flsk mtd
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
Bis[(Dimethylamino)Methyl]Phenol	71074-89-0	Modeled Bioconcentration		Log Kow	-2.34	ACD/Labs ChemSketch™
N-Aminoethylpiperazine	140-31-8	Experimental Bioconcentration		Log Kow	0.3	
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
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

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

SECTION 14: Transport Information

Air Transport (IATA)Regulations

UN No UN3267
Proper Shipping Name CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL AND AMINE EPOXY CURING AGENT)
Hazard Classs/Division 8
Subsidiary Risk Not applicable
Packing Group: II

Marine Transport (IMDG)
UN No UN3267
Proper Shipping Name CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL AND AMINE EPOXY CURING AGENT)
Hazard Classs/Division 8
Subsidiary Risk Not applicable
Packing Group: II
Environmental Hazards: Not applicable

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 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.

Applicable Environmental, Health and Safety Regulations
The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989
Hazardous Waste(Management , Handling & Transboundary) Rules, 2008
Hazardous Chemicals (Classification, Packaging and Labelling Draft Rules), 2011
Central Motor Vehicle Rules, 1989

The following ingredients are listed as hazardous on Part II of Schedule I of the India Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) rules
Toluene

The following ingredients are classified as hazardous based on the criteria listed under Part I of Schedule I of the India Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) rules:
The product is classified as Toxic (Corrosive) as per MSIHC Rules, 1989.

SECTION 16: Other information

NFPA Hazard Classification

Health: 3 **Flammability:** 1 **Instability:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Revision information:
Section 1: Product name information was modified.
Section 02: GHS Precautionary - Notes to Physician information was added.
Section 2: Hazard - Other information was modified.
Label: GHS Classification information was modified.
Label: GHS Environmental Hazard Statements information was added.
Label: GHS Precautionary - General information was modified.
Label: GHS Precautionary - Prevention information was modified.
Label: GHS Precautionary - Response information was modified.
Label: GHS Target Organ Hazard Statement information was modified.
Label: Graphic information was modified.
Label: Signal Word information was modified.
Label: Symbol information was modified.
Section 2: Ingredient table information was modified.
Section 04: First Aid - Symptoms and Effects (GHS) information was added.
Section 04: Information on toxicological effects information was deleted.
Section 6: Accidental release personal information information was modified.
Section 7: Conditions safe storage information was modified.
Section 8: Occupational exposure limit table information was modified.
Section 08: Personal Protection - Apron Statement information was added.
Section 8: Personal Protection - Skin/body information information was deleted.
Section 8: Skin protection - protective clothing information information was deleted.
Section 8: Skin protection - recommended gloves information information was modified.
Section 8: Skin protection - recommended gloves text information was added.
Section 8: Skin protection - recommended gloves text information was deleted.
Section 9: Density information information was modified.
Section 9: Flammability (solid, gas) information information was deleted.
Section 09: Flammability information information was added.
Section 09: Kinematic Viscosity information information was added.
Section 09: Particle Characteristics N/A information was added.
Section 09: Percent Volatile information was added.
Section 9: Property description for optional properties information was added.
Section 9: Property description for optional properties information was deleted.
Section 09: Vapor Density Value information was added.
Section 9: Vapour density value information was deleted.
Section 9: Viscosity information information was deleted.

Section 09: VOC Less H2O & Exempt Solvents information was added.
Section 09: Volatile Organic Compounds information was added.
Section 11: Acute Toxicity table information was modified.
Section 11: Germ Cell Mutagenicity Table information was modified.
Section 11: Health Effects - Inhalation information information was modified.
Section 11: Reproductive Toxicity Table information was modified.
Section 11: Serious Eye Damage/Irritation Table information was modified.
Section 11: Skin Corrosion/Irritation Table information was modified.
Section 11: Skin Sensitization Table information was modified.
Section 11: Target Organs - Repeated Table information was modified.
Section 11: Target Organs - Single Table information was modified.
Section 12: Acute aquatic hazard information information was modified.
Section 12: Chronic aquatic hazard information information was modified.
Section 12: Component ecotoxicity information information was modified.
Section 12: Persistence and Degradability information information was modified.
Section 12:Bioccumulative potential information information was modified.

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