



Safety Data Sheet

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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™ Impact Resistant Structural Adhesive PNs 07333, 57333

Product Identification Numbers

41-3588-1438-6 60-4550-8333-1 60-4550-8345-5 HB-0044-0462-8 JS-4000-0071-2

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: 080-39143000, contact Product EHS team
E Mail: productehs.in@mmm.com
Website: <http://solutions.3mindia.co.in>

1.4. Emergency telephone number

080-39143000 (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:

33-5988-2, 33-5984-1

TRANSPORT INFORMATION

Air Transport (IATA) Regulations

UN No UN2735

Proper Shipping Name AMINES, LIQUID, CORROSIVE, N.O.S. (BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL AND METHYLENEDI(CYCLOHEXYLAMINE))

Hazard Class/Division 8

Subsidiary Risk Not applicable

Packing Group: II

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

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



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SECTION 1: Identification

1.1. Product identifier

3M™ Impact Resistant Structural Adhesive Part A, PNs 07333, 57333

Product Identification Numbers

LB-K100-1573-6 LB-K100-1573-7

1.2. Recommended use and restrictions on use

Recommended use

Automotive., Accelerator for two-part color changing adhesive with optimized shear, peel and impact performance.

1.3. Supplier's details

Address: 3M India Limited, plot-48-51, Electronic city, Hosur road, Bangalore-560100
Telephone: 080-39143000, contact Product EHS team
E Mail: productehs.in@mmm.com
Website: <http://solutions.3mindia.co.in>

1.4. Emergency telephone number

080-39143000 (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 4.
Acute Toxicity (dermal): Category 5.
Acute Toxicity (inhalation): Category 5.
Serious Eye Damage/Irritation: Category 1.
Skin Corrosion/Irritation: Category 1B.
Skin Sensitizer: Category 1.
Specific Target Organ Toxicity (repeated exposure): Category 2.
Acute Aquatic Toxicity: Category 3.

2.2. Label elements

Signal Word

DANGER!

Symbols

Corrosion | Exclamation mark | Health Hazard |

Pictograms



HAZARD STATEMENTS:

H302	Harmful if swallowed.
H313	May be harmful in contact with skin.
H333	May be harmful if inhaled.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H373	May cause damage to organs through prolonged or repeated exposure: liver musculoskeletal system
H402	Harmful to aquatic life.

PRECAUTIONARY STATEMENTS

General:

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

Prevention:

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280D	Wear protective gloves, protective clothing, and eye/face protection.
P264	Wash thoroughly after handling.

Response:

P304 + P312	IF INHALED: 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/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.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage:

P405	Store locked up.
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Disposal:

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

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

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
Bis(3-Aminopropyl) Ether of Diethylene Glycol	4246-51-9	15 - 40
Epoxy Copolymer (04499600-7155)	Trade Secret	10 - 30
Aluminium	7429-90-5	5 - 10
4,4'-Methylenebis(cyclohexylamine)	1761-71-3	5 - 10
Acrylic copolymer	Trade Secret	5 - 10
Synthetic Rubber (04499600-7150)	Trade Secret	5 - 10
m-Xylene-.alpha.alpha'.Diamine	1477-55-0	1 - 5
Tris(2,4,6-Dimethylaminomonomethyl)phenol	90-72-2	1 - 5
Inorganic Filler (04499600-7153)	Trade Secret	1 - 5
Mineral Filler (04499600-7156)	Trade Secret	1 - 5
Treated Filler (04499600-7152)	Trade Secret	1 - 5
Formaldehyde, Polymer with Benzenamine, Hydrogenated	135108-88-2	< 2

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation

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

Skin contact

Immediately 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

See Section 11.1 Information on toxicological effects

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

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

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. 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 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.)

7.2. Conditions for safe storage including any incompatibilities

Store away from heat. 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
m-Xylene-.alpha.alpha'.Diamine	1477-55-0	ACGIH	CEIL:0.1 mg/m3	SKIN
Aluminium	7429-90-5	ACGIH	TWA(respirable fraction):1 mg/m3	A4: Not class. as human carcin
Inorganic Filler (04499600-7153)	Trade Secret	Manufacturer determined	TWA(as dust):10 mg/m3	
Inorganic Filler (04499600-7153)	Trade Secret	ACGIH	TWA(as fiber):0.2 fiber/cc;TWA(as fiber):1 fiber/cc;TWA(inhalable fraction):5 mg/m3	A3: Confirmed animal carcin., A4: Not class. as human carcin, A2: Suspected human 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

Provide ventilated enclosure for heat curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. 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.

Gloves made from the following material(s) are recommended: Nitrile rubber.
Polyvinyl alcohol (PVA).

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

Apron – Nitrile

Respiratory protection

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

Half facepiece or full facepiece air-purifying respirator suitable for organic vapours and particulates

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Paste
Appearance/Odour	Silver Grey Thick Paste (Very Slight Acrylic Smell)
Odour threshold	<i>No data available.</i>
pH	<i>No data available.</i>
Melting point/Freezing point: NA	<i>No data available.</i>
Boiling point/Initial boiling point/Boiling range	<i>No data available.</i>
Flash point	103.9 °C [<i>Test Method:</i> Closed Cup]

Evaporation rate	No data available.
Flammability (solid, gas)	Not applicable.
Vapour pressure	666.6 Pa
Density	No data available.
Relative density	1.23 [Ref Std:WATER=1]
Partition coefficient: n-octanol/water	No data available.
Autoignition temperature	No data available.
Decomposition temperature	No data available.
Viscosity	55,000 - 80,000 mPa-s
Volatile organic compounds (VOC)	0.1 % weight [Test Method:calculated per CARB title 2]
Volatile organic compounds (VOC)	1 g/l [Test Method:calculated SCAQMD rule 443.1]
Percent volatile	1.8 % weight
VOC less H2O & exempt solvents	1 g/l [Test Method:calculated SCAQMD rule 443.1]

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

Heat.

Sparks and/or flames.

10.5 Incompatible materials

Strong acids.

Strong oxidising agents.

10.6 Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
Aldehydes.	Not specified.
Carbon monoxide.	Not specified.
Carbon dioxide.	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

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. May cause additional health effects (see below).

Eye contact

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

Ingestion

Harmful if swallowed.

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

Additional Health Effects:

Prolonged or repeated exposure may cause target organ effects:

Liver effects: Signs/symptoms may include loss of appetite, weight loss, fatigue, weakness, abdominal tenderness and jaundice. Muscular effects: Signs/symptoms may include generalised muscle weakness, paralysis and atrophy.

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 ATE2,000 - 5,000 mg/kg
Overall product	Inhalation-Dust/Mist(4 hr)		No data available; calculated ATE5 - 12.5 mg/l
Overall product	Ingestion		No data available; calculated ATE300 - 2,000 mg/kg
Bis(3-Aminopropyl) Ether of Diethylene Glycol	Dermal	Rabbit	LD50 2,500 mg/kg
Bis(3-Aminopropyl) Ether of Diethylene Glycol	Ingestion	Rat	LD50 3,160 mg/kg
Aluminium	Dermal		LD50 estimated to be > 5,000 mg/kg
Aluminium	Ingestion		LD50 estimated to be > 5,000 mg/kg
Aluminium	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.888 mg/l
4,4'-Methylenebis(cyclohexylamine)	Dermal	Rabbit	LD50 2,110 mg/kg
4,4'-Methylenebis(cyclohexylamine)	Ingestion	Rat	LD50 350 mg/kg
Mineral Filler (04499600-7156)	Dermal		LD50 estimated to be > 5,000 mg/kg
Mineral Filler (04499600-7156)	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Synthetic Rubber (04499600-7150)	Dermal	Rabbit	LD50 > 3,000 mg/kg
Synthetic Rubber (04499600-7150)	Ingestion	Rat	LD50 > 15,300 mg/kg
Treated Filler (04499600-7152)	Dermal	Rat	LD50 > 2,000 mg/kg
Treated Filler (04499600-7152)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 3 mg/l
Treated Filler (04499600-7152)	Ingestion	Rat	LD50 6,450 mg/kg
Tris(2,4,6-Dimethylaminomonomethyl)phenol	Dermal	Rat	LD50 1,280 mg/kg

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Tris(2,4,6-Dimethylaminomonomethyl)phenol	Ingestion	Rat	LD50 1,000 mg/kg
m-Xylene-.alpha.alpha'.Diamine	Dermal	Rabbit	LD50 > 2,000 mg/kg
m-Xylene-.alpha.alpha'.Diamine	Inhalation-Dust/Mist (4 hours)	Rat	LC50 1.2 mg/l
m-Xylene-.alpha.alpha'.Diamine	Ingestion	Rat	LD50 980 mg/kg
Inorganic Filler (04499600-7153)	Dermal		LD50 estimated to be > 5,000 mg/kg
Inorganic Filler (04499600-7153)	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Bis(3-Aminopropyl) Ether of Diethylene Glycol	Rabbit	Corrosive
Aluminium	Rabbit	No significant irritation
4,4'-Methylenebis(cyclohexylamine)	Rabbit	Corrosive
Treated Filler (04499600-7152)	Rabbit	No significant irritation
Tris(2,4,6-Dimethylaminomonomethyl)phenol	Rabbit	Corrosive
m-Xylene-.alpha.alpha'.Diamine	Rat	Corrosive
Inorganic Filler (04499600-7153)	Professional judgement	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Bis(3-Aminopropyl) Ether of Diethylene Glycol	similar health hazards	Corrosive
Aluminium	Rabbit	No significant irritation
4,4'-Methylenebis(cyclohexylamine)	Rabbit	Corrosive
Treated Filler (04499600-7152)	Rabbit	No significant irritation
Tris(2,4,6-Dimethylaminomonomethyl)phenol	Rabbit	Corrosive
m-Xylene-.alpha.alpha'.Diamine	Rabbit	Corrosive
Inorganic Filler (04499600-7153)	Professional judgement	No significant irritation

Skin Sensitisation

Name	Species	Value
Aluminium	Guinea pig	Not classified
4,4'-Methylenebis(cyclohexylamine)	Guinea pig	Sensitising
Synthetic Rubber (04499600-7150)	Guinea pig	Not classified
Tris(2,4,6-Dimethylaminomonomethyl)phenol	Guinea pig	Not classified
m-Xylene-.alpha.alpha'.Diamine	Guinea pig	Sensitising

Respiratory Sensitisation

Name	Species	Value
Aluminium	Human	Not classified

Germ Cell Mutagenicity

Name	Route	Value
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Aluminium	In Vitro	Not mutagenic
Mineral Filler (04499600-7156)	In Vitro	Not mutagenic
Tris(2,4,6-Dimethylaminomonomethyl)phenol	In Vitro	Not mutagenic
m-Xylene-.alpha.alpha'.Diamine	In Vitro	Not mutagenic
m-Xylene-.alpha.alpha'.Diamine	In vivo	Not mutagenic
Inorganic Filler (04499600-7153)	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Inorganic Filler (04499600-7153)	Inhalation	Multiple animal species	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
Treated Filler (04499600-7152)	Ingestion	Not classified for development	Rat	NOAEL 625 mg/kg/day	pre mating & during gestation
m-Xylene-.alpha.alpha'.Diamine	Ingestion	Not classified for female reproduction	Rat	NOAEL 450 mg/kg/day	1 generation
m-Xylene-.alpha.alpha'.Diamine	Ingestion	Not classified for male reproduction	Rat	NOAEL 450 mg/kg	1 generation
m-Xylene-.alpha.alpha'.Diamine	Ingestion	Not classified for development	Rat	NOAEL 450 mg/kg/day	1 generation

Target Organ(s)
Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Bis(3-Aminopropyl) Ether of Diethylene Glycol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
4,4'-Methylenebis(cyclohexylamine)	Inhalation	respiratory irritation	May cause respiratory irritation	similar health hazards	NOAEL Not available	
Treated Filler (04499600-7152)	Inhalation	respiratory system	Not classified	Rat	NOAEL 0.812 mg/l	90 minutes
Tris(2,4,6-Dimethylaminomonomethyl)phenol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
m-Xylene-.alpha.alpha'.Diamine	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Not available	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Aluminium	Inhalation	nervous system respiratory system	Not classified	Human	NOAEL Not available	occupational exposure
4,4'-Methylenebis(cyclohexylamine)	Ingestion	liver muscles	May cause damage to organs though prolonged or repeated exposure	Rat	NOAEL 15 mg/kg/day	36 days
Mineral Filler (04499600-7156)	Inhalation	respiratory system	Not classified	Human	NOAEL Not available	occupational exposure
Mineral Filler (04499600-7156)	Inhalation	pulmonary fibrosis	Not classified	Human and animal	NOAEL Not available	
Treated Filler (04499600-7152)	Inhalation	respiratory system	Not classified	Human	NOAEL Not available	occupational exposure

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Tris(2,4,6-Dimethylaminomonomethyl)phenol	Dermal	skin liver nervous system auditory system hematopoietic system eyes	Not classified	Rat	NOAEL 125 mg/kg/day	28 days
m-Xylene-.alpha.alpha'.Diamine	Ingestion	endocrine system blood bone marrow	Not classified	Rat	NOAEL 600 mg/kg/day	28 days
Inorganic Filler (04499600-7153)	Inhalation	respiratory system	Not classified	Human	NOAEL not available	occupational exposure

Aspiration Hazard

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

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

SECTION 12: Ecological information

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

12.1. Toxicity

Acute aquatic hazard:

GHS Acute 3: Harmful to aquatic life.

Chronic aquatic hazard:

Not chronically toxic to aquatic life by GHS criteria.

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
Bis(3-Aminopropyl) Ether of Diethylene Glycol	4246-51-9	Water flea	Experimental	48 hours	EC50	220 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	Green algae	Experimental	72 hours	Effect Concentration 10%	5.4 mg/l
Epoxy	Trade Secret		Data not			

3M™ Impact Resistant Structural Adhesive Part A, PNs 07333, 57333

Copolymer (04499600-7155)			available or insufficient for classification			
Acrylic copolymer	Trade Secret		Data not available or insufficient for classification			
Aluminium	7429-90-5		Data not available or insufficient for classification			
4,4'-Methylenebis(cyclohexylamine)	1761-71-3	Algae	Experimental	72 hours	EC50	2,164 mg/l
4,4'-Methylenebis(cyclohexylamine)	1761-71-3	Water flea	Experimental	48 hours	EC50	7.07 mg/l
4,4'-Methylenebis(cyclohexylamine)	1761-71-3	Golden Orfe	Experimental	96 hours	LC50	>100 mg/l
4,4'-Methylenebis(cyclohexylamine)	1761-71-3	Water flea	Estimated	21 days	NOEC	4 mg/l
4,4'-Methylenebis(cyclohexylamine)	1761-71-3	Algae	Experimental	72 hours	Effect Concentration 10%	100 mg/l
Synthetic Rubber (04499600-7150)	Trade Secret		Data not available or insufficient for classification			
Inorganic Filler (04499600-7153)	Trade Secret	Water flea	Experimental	72 hours	EC50	>1,000 mg/l
Inorganic Filler (04499600-7153)	Trade Secret	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
Inorganic Filler (04499600-7153)	Trade Secret	Zebra Fish	Experimental	96 hours	LC50	>1,000 mg/l
Inorganic Filler (04499600-7153)	Trade Secret	Green algae	Experimental	72 hours	NOEC	>=1,000 mg/l
Mineral Filler (04499600-7156)	Trade Secret		Data not available or insufficient for classification			
m-Xylene-.alpha.alpha'.Diamine	1477-55-0	Water flea	Experimental	48 hours	EC50	15.2 mg/l
m-	1477-55-0	Ricefish	Experimental	96 hours	LC50	87.6 mg/l

Xylene-.alpha.alpha'.Diamine						
m-Xylene-.alpha.alpha'.Diamine	1477-55-0	Green Algae	Experimental	72 hours	EC50	28 mg/l
m-Xylene-.alpha.alpha'.Diamine	1477-55-0	Green Algae	Experimental	72 hours	NOEC	9.8 mg/l
m-Xylene-.alpha.alpha'.Diamine	1477-55-0	Water flea	Experimental	21 days	NOEC	4.7 mg/l
Treated Filler (04499600-7152)	Trade Secret	Western Mosquitofish	Experimental	96 hours	LC50	>100 mg/l
Treated Filler (04499600-7152)	Trade Secret	Rainbow trout	Experimental	42 days	NOEC	>100 mg/l
Tris(2,4,6-Dimethylamino monomethyl)phenol	90-72-2	Grass Shrimp	Experimental	96 hours	LC50	718 mg/l
Tris(2,4,6-Dimethylamino monomethyl)phenol	90-72-2	Green algae	Experimental	72 hours	EC50	84 mg/l
Tris(2,4,6-Dimethylamino monomethyl)phenol	90-72-2	Common Carp	Experimental	96 hours	LC50	175 mg/l
Tris(2,4,6-Dimethylamino monomethyl)phenol	90-72-2	Green algae	Experimental	72 hours	NOEC	6.25 mg/l
Formaldehyde, Polymer with Benzenamine, Hydrogenated	135108-88-2	Guppy	Experimental	96 hours	LC50	63 mg/l
Formaldehyde, Polymer with Benzenamine, Hydrogenated	135108-88-2	Green algae	Experimental	72 hours	EC50	43.94 mg/l
Formaldehyde, Polymer with Benzenamine, Hydrogenated	135108-88-2	Water flea	Experimental	48 hours	EC50	15.4 mg/l
Formaldehyde, Polymer with Benzenamine, Hydrogenated	135108-88-2	Green algae	Experimental	72 hours	Effect Concentration 10%	1.2 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Bis(3-Aminopropyl)	4246-51-9	Experimental Biodegradation	25 days	CO2 evolution	-8 % weight	OECD 301B - Modified sturm or CO2

Ether of Diethylene Glycol						
Epoxy Copolymer (04499600-7155)	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Acrylic copolymer	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Aluminium	7429-90-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
4,4'-Methylenebis(cyclohexylamine)	1761-71-3	Estimated Biodegradation	28 days	BOD	42 % weight	OECD 301C - MITI test (I)
Synthetic Rubber (04499600-7150)	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Inorganic Filler (04499600-7153)	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Mineral Filler (04499600-7156)	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
m-Xylene-.alpha.alpha'.Diamine	1477-55-0	Experimental Biodegradation	28 days	CO2 evolution	49 % weight	OECD 301B - Modified sturm or CO2
Treated Filler (04499600-7152)	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Tris(2,4,6-Dimethylamino monomethyl)phenol	90-72-2	Experimental Biodegradation	28 days	BOD	4 % weight	OECD 301D - Closed bottle test
Formaldehyde, Polymer with Benzenamine, Hydrogenated	135108-88-2	Experimental Biodegradation	28 days	BOD	0 % weight	Other methods

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Bis(3-Aminopropyl) Ether of Diethylene Glycol	4246-51-9	Estimated Bioconcentration		Log Kow	-1.46	Estimated: Octanol-water partition coefficient

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Epoxy Copolymer (04499600-7155)	Trade Secret	Estimated Bioconcentration		Bioaccumulation factor	2.9	Estimated: Bioconcentration factor
Acrylic copolymer	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Aluminium	7429-90-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
4,4'-Methylenebis(cyclohexylamine)	1761-71-3	Estimated Bioconcentration		Bioaccumulation factor	160	Estimated: Bioconcentration factor
Synthetic Rubber (04499600-7150)	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Inorganic Filler (04499600-7153)	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Mineral Filler (04499600-7156)	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
m-Xylene-.alpha.alpha'.Diamine	1477-55-0	Experimental BCF-Carp	42 days	Bioaccumulation factor	<2.7	OECD 305E - Bioaccumulation flow-through fish test
Treated Filler (04499600-7152)	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Tris(2,4,6-Dimethylamino monomethyl)phenol	90-72-2	Experimental Bioconcentration		Log Kow	-0.66	Other methods
Formaldehyde, Polymer with Benzenamine, Hydrogenated	135108-88-2	Experimental BCF-Carp	56 days	Bioaccumulation factor	≤ 219	OECD 305E - Bioaccumulation flow-through fish test

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

See Section 11.1 Information on toxicological effects

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. 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 UN2735

Proper Shipping Name AMINES, LIQUID, CORROSIVE, N.O.S. (BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL AND METHYLENEDI(CYCLOHEXYLAMINE))

Hazard Class/Division 8

Subsidiary Risk Not applicable

Packing Group: II

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 product are in compliance with the new substance notification requirements of CEPA. The components of this product are in compliance with the chemical notification requirements of TSCA. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory.

Applicable Environmental, Health and Safety Regulations

Manufacture, Storage and Import of Hazardous Chemical Rules, 1989

Hazardous Waste(Management , Handling & Transboundary) Rules, 2008

Hazardous Chemicals (Classification, Packaging and Label Rules), 2001

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

Aluminium

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:

Product is classified as toxic

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:

No revision information

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

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



Safety Data Sheet

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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™ Impact Resistant Structural Adhesive (Part B) PNs 07333, 57333

Product Identification Numbers

LB-K100-1574-0 LB-K100-1574-1

1.2. Recommended use and restrictions on use

Recommended use

Automotive., Base side of two-part color changing adhesive with optimized shear, peel and impact performance.

1.3. Supplier's details

Address: 3M India Limited, plot-48-51, Electronic city, Hosur road, Bangalore-560100
Telephone: 080-39143000, contact Product EHS team
E Mail: productehs.in@mmm.com
Website: <http://solutions.3mindia.co.in>

1.4. Emergency telephone number

080-39143000 (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

Serious Eye Damage/Irritation: Category 2A

Skin Corrosion/Irritation: Category 3.

Skin Sensitizer: Category 1.

Reproductive Toxicity: Category 2.

Carcinogenicity: Category 2.

Acute Aquatic Toxicity: Category 1.

Chronic Aquatic Toxicity: Category 2.

2.2. Label elements

Signal Word

WARNING!

Symbols

Exclamation mark | Health Hazard | Environment |

Pictograms



HAZARD STATEMENTS:

H319 Causes serious eye irritation.
H316 Causes mild skin irritation.
H317 May cause an allergic skin reaction.
H361 Suspected of damaging fertility or the unborn child.
H351 Suspected of causing cancer.

H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

General:

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

Prevention:

P280E Wear protective gloves.
P273 Avoid release to the environment.

Response:

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P370 + P378G In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

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-	25068-38-6	60 - 100

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Epichlorohydrin Polymer		
Synthetic Rubber (04499600-7202)	Trade Secret	4 - 20
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	1 - 5
1,4-Bis[(2,3-Epoxypropoxy)Methyl]Cyclohexane	14228-73-0	1 - 5
Benzoic Acid, C9-C11-Branched Alkyl Esters	131298-44-7	1 - 5
Inorganic Filler (04499600-7205)	Trade Secret	1 - 5
Treated Filler (04499600-7203)	Trade Secret	1 - 5
Treated Inorganic Filler (04499600-7204)	Trade Secret	1 - 5
Phenolphthalein	77-09-8	< 0.5

SECTION 4: First aid measures**4.1. Description of first aid measures****Inhalation**

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

Skin contact

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

Eye contact

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

See Section 11.1 Information on toxicological effects

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

Not applicable

SECTION 5: Fire-fighting measures**5.1. Suitable Extinguishing media**

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

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

5.3. Special protective actions for fire-fighters

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

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for

information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid breathing of vapours created during the cure cycle. Keep out of reach of children. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (eg. gloves, respirators...) as required.

7.2. Conditions for safe storage including any incompatibilities

Store away from heat. Store away from acids. Store away from oxidising agents.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

No occupational exposure limit values exist for any of the components listed in Section 3 of this Safety Data Sheet.

8.2. Exposure controls

8.2.1. Engineering controls

Provide ventilated enclosure for heat curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

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

Indirect vented goggles.

Skin/hand protection

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

clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity. Gloves made from the following material(s) are recommended: Polymer laminate

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

Respiratory protection

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

Half facepiece or full facepiece air-purifying respirator suitable for organic 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.
Appearance/Odour	Silver Grey Thick Paste (Very Slight Acrylic Smell)
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 °C
Flash point	103.9 °C [Test Method: Closed Cup]
Evaporation rate	No data available.
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	No data available.
Flammable Limits(UEL)	No data available.
Vapour pressure	666.6 Pa
Vapour density	No data available.
Density	1.138 g/ml
Relative density	1.138 [Ref Std: WATER=1]
Water solubility	No data available.
Water solubility	No data available.
Solubility- non-water	No data available.
Solubility- non-water	No data available.
Partition coefficient: n-octanol/water	No data available.
Autoignition temperature	No data available.
Decomposition temperature	No data available.
Viscosity	100,000 - 500,000 mPa-s
Molecular weight	No data available.
Volatile organic compounds (VOC)	1.6 % weight
Volatile organic compounds (VOC)	19 g/l
Percent volatile	1.7 % weight
VOC less H2O & exempt solvents	19 g/l

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

Heat.

Sparks and/or flames.

10.5 Incompatible materials

Strong acids.

Strong oxidising agents.

10.6 Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
Aldehydes.	Not specified.
Carbon monoxide.	Not specified.
Carbon dioxide.	Not specified.

SECTION 11: Toxicological information

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

11.1 Information on Toxicological effects

Signs and Symptoms of Exposure

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

Inhalation

Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin contact

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

Eye contact

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

Ingestion

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

Additional Health Effects:

Reproductive/Developmental Toxicity:

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

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Carcinogenicity:

Contains a chemical or chemicals which can cause cancer.

Toxicological Data

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

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Dermal	Rat	LD50 > 1,600 mg/kg
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Ingestion	Rat	LD50 > 1,000 mg/kg
Treated Filler (04499600-7203)	Dermal	Rat	LD50 > 2,000 mg/kg
Treated Filler (04499600-7203)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 3 mg/l
Treated Filler (04499600-7203)	Ingestion	Rat	LD50 6,450 mg/kg
Treated Inorganic Filler (04499600-7204)	Dermal	Rabbit	LD50 > 5,000 mg/kg
Treated Inorganic Filler (04499600-7204)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Treated Inorganic Filler (04499600-7204)	Ingestion	Rat	LD50 > 5,110 mg/kg
Benzoic Acid, C9-C11-Branched Alkyl Esters	Dermal	Rabbit	LD50 > 2,000 mg/kg
Benzoic Acid, C9-C11-Branched Alkyl Esters	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5 mg/l
Benzoic Acid, C9-C11-Branched Alkyl Esters	Ingestion	Rat	LD50 > 5,000 mg/kg
Inorganic Filler (04499600-7205)	Dermal	Rabbit	LD50 > 5,000 mg/kg
Inorganic Filler (04499600-7205)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Inorganic Filler (04499600-7205)	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
1,4-Bis[(2,3-Epoxypropoxy)Methyl]Cyclohexane	Dermal	Rabbit	LD50 2,500 mg/kg
1,4-Bis[(2,3-Epoxypropoxy)Methyl]Cyclohexane	Ingestion	Rat	LD50 2,450 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Rabbit	Mild irritant
Treated Filler (04499600-7203)	Rabbit	No significant irritation
Treated Inorganic Filler (04499600-7204)	Rabbit	No significant irritation
Inorganic Filler (04499600-7205)	Rabbit	No significant irritation
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Rabbit	Mild irritant
1,4-Bis[(2,3-Epoxypropoxy)Methyl]Cyclohexane	Professional judgement	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Rabbit	Moderate irritant
Treated Filler (04499600-7203)	Rabbit	No significant irritation
Treated Inorganic Filler (04499600-7204)	Rabbit	No significant irritation
Inorganic Filler (04499600-7205)	Rabbit	No significant irritation
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Rabbit	Corrosive

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1,4-Bis[(2,3-Epoxypropoxy)Methyl]Cyclohexane	Professional judgement	Mild irritant
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Skin Sensitisation

Name	Species	Value
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Human and animal	Sensitising
Treated Inorganic Filler (04499600-7204)	Human and animal	Not classified
Inorganic Filler (04499600-7205)	Human and animal	Not classified
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Guinea pig	Not classified
1,4-Bis[(2,3-Epoxypropoxy)Methyl]Cyclohexane	similar compounds	Sensitising

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
Treated Inorganic Filler (04499600-7204)	In Vitro	Not mutagenic
Inorganic Filler (04499600-7205)	In Vitro	Not mutagenic
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	In vivo	Not mutagenic
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Treated Inorganic Filler (04499600-7204)	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Inorganic Filler (04499600-7205)	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

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
Treated Filler (04499600-7203)	Ingestion	Not classified for development	Rat	NOAEL 625	prematuring &

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				mg/kg/day	during gestation
Treated Inorganic Filler (04499600-7204)	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Treated Inorganic Filler (04499600-7204)	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Treated Inorganic Filler (04499600-7204)	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
Inorganic Filler (04499600-7205)	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Inorganic Filler (04499600-7205)	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Inorganic Filler (04499600-7205)	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

Target Organ(s)
Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Treated Filler (04499600-7203)	Inhalation	respiratory system	Not classified	Rat	NOAEL 0.812 mg/l	90 minutes
1,4-Bis[(2,3-Epoxypropoxy)Methyl]Cyclohexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Ingestion	auditory system heart endocrine system hematopoietic system liver eyes kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Treated Filler (04499600-7203)	Inhalation	respiratory system	Not classified	Human	NOAEL Not available	occupational exposure
Treated Inorganic Filler (04499600-7204)	Inhalation	respiratory system silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Inorganic Filler (04499600-7205)	Inhalation	respiratory system silicosis	Not classified	Human	NOAEL Not available	occupational exposure
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Ingestion	heart endocrine system bone, teeth, nails, and/or hair hematopoietic system liver immune system nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days

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		kidney and/or bladder respiratory system				
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Aspiration Hazard

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

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

SECTION 12: Ecological information

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

12.1. Toxicity

Acute aquatic hazard:

GHS Acute 1: Very 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'-Isopropylidene diphenol-Epichlorohydrin Polymer	25068-38-6	Water flea	Estimated	48 hours	LC50	0.95 mg/l
4,4'-Isopropylidene diphenol-Epichlorohydrin Polymer	25068-38-6	Green Algae	Experimental	72 hours	EC50	>11 mg/l
4,4'-Isopropylidene diphenol-Epichlorohydrin Polymer	25068-38-6	Rainbow trout	Experimental	96 hours	LC50	1.2 mg/l
4,4'-Isopropylidene diphenol-Epichlorohydrin Polymer	25068-38-6	Green Algae	Experimental	72 hours	NOEC	4.2 mg/l
4,4'-Isopropylidene diphenol-Epichlorohydrin Polymer	25068-38-6	Water flea	Experimental	21 days	NOEC	0.3 mg/l
Synthetic	Trade Secret		Data not			

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Rubber (04499600-7202)			available or insufficient for classification			
[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	Crustacea other	Experimental	48 hours	LC50	324 mg/l
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Green algae	Experimental	96 hours	EC50	350 mg/l
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Green Algae	Experimental	96 hours	NOEC	130 mg/l
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Water flea	Experimental	21 days	NOEC	>=100 mg/l
1,4-Bis[(2,3-Epoxypropoxy)Methyl]Cyclohexane	14228-73-0	Green algae	Estimated	72 hours	EC50	26.7 mg/l
1,4-Bis[(2,3-Epoxypropoxy)Methyl]Cyclohexane	14228-73-0	Rainbow trout	Estimated	96 hours	LC50	10.1 mg/l
1,4-Bis[(2,3-Epoxypropoxy)Methyl]Cyclohexane	14228-73-0	Water flea	Estimated	48 hours	EC50	16.3 mg/l
1,4-Bis[(2,3-Epoxypropoxy)Methyl]Cyclohexane	14228-73-0	Green algae	Estimated	72 hours	Effect Concentration 10%	21.4 mg/l
1,4-Bis[(2,3-Epoxypropoxy)Methyl]Cyclohexane	14228-73-0	Water flea	Estimated	21 days	NOEC	11.7 mg/l
Benzoic Acid, C9-C11-Branched Alkyl Esters	131298-44-7		Data not available or insufficient for classification			
Inorganic Filler (04499600-7205)	Trade Secret		Data not available or insufficient for classification			
Treated Filler (04499600-7203)	Trade Secret	Green algae	Estimated	72 hours	EC50	>100 mg/l
Treated Filler	Trade Secret	Rainbow trout	Estimated	96 hours	LC50	>100 mg/l

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(04499600-7203)						
Treated Filler (04499600-7203)	Trade Secret	Water flea	Estimated	48 hours	EC50	>100 mg/l
Treated Filler (04499600-7203)	Trade Secret	Green algae	Estimated	72 hours	Effect Concentration 10%	>100 mg/l
Treated Inorganic Filler (04499600-7204)	Trade Secret		Data not available or insufficient for classification			
Phenolphthalein	77-09-8	Green algae	Experimental	72 hours	EC50	8.9 mg/l
Phenolphthalein	77-09-8	Water flea	Experimental	48 hours	EC50	6.72 mg/l
Phenolphthalein	77-09-8	Green algae	Experimental	72 hours	Effect Concentration 10%	1.9 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
4,4'-Isopropylidene diphenol-Epichlorohydrin Polymer	25068-38-6	Estimated Hydrolysis		Hydrolytic half-life	<2 days (t 1/2)	Other methods
4,4'-Isopropylidene diphenol-Epichlorohydrin Polymer	25068-38-6	Experimental Biodegradation	28 days	BOD	0 % BOD/ThBOD	OECD 301C - MITI test (I)
Synthetic Rubber (04499600-7202)	Trade Secret	Data not available-insufficient			N/A	
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Experimental Hydrolysis		Hydrolytic half-life	6.5 hours (t 1/2)	Other methods
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	37 % weight	Other methods
1,4-Bis[(2,3-Epoxypropoxy)Methyl]Cyclohexane	14228-73-0	Estimated Biodegradation	28 days	Dissolv. Organic Carbon Deplet	16.6 %removal of DOC	OECD 301F - Manometric respirometry
Benzoic Acid, C9-C11-Branched Alkyl Esters	131298-44-7	Data not available-insufficient			N/A	
Inorganic Filler (04499600-	Trade Secret	Data not available-			N/A	

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7205)		insufficient				
Treated Filler (04499600-7203)	Trade Secret	Data not available-insufficient			N/A	
Treated Inorganic Filler (04499600-7204)	Trade Secret	Data not available-insufficient			N/A	
Phenolphthalein	77-09-8	Experimental Biodegradation	28 days	BOD	76 % BOD/ThBOD	OECD 301F - Manometric respirometry

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
4,4'-Isopropylidene diphenol-Epichlorohydrin Polymer	25068-38-6	Experimental BCF-Carp	28 days	Bioaccumulation factor	<=42	OECD 305E - Bioaccumulation flow-through fish test
Synthetic Rubber (04499600-7202)	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
[3-(2,3-epoxypropoxy) propyl]trimethoxysilane	2530-83-8	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	Estimated Bioconcentration		Bioaccumulation factor	3	Estimated: Bioconcentration factor
Benzoic Acid, C9-C11-Branched Alkyl Esters	131298-44-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Inorganic Filler (04499600-7205)	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Treated Filler (04499600-7203)	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Treated Inorganic Filler (04499600-7204)	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Phenolphthalein	77-09-8	Experimental Bioconcentration		Log Kow	0.9	Other methods

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. 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

Not hazardous for transportation.

Air Transport (IATA) Regulations

UN No Not applicable

Proper Shipping Name Not applicable

Hazard Class/Division Not applicable

Subsidiary Risk Not applicable

Packing Group: Not applicable

Marine Transport (IMDG)

UN No Not applicable

Proper Shipping Name Not applicable

Hazard Class/Division Not applicable

Subsidiary Risk Not applicable

Packing Group: Not applicable

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. The components of this product are in compliance with the chemical notification requirements of TSCA. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory.

Applicable Environmental, Health and Safety Regulations

Not applicable

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

None.

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:

Product is classified as non-hazardous

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.

Section 5: Fire - Advice for fire fighters information information was modified.

Section 09: Decomposition Temperature information was added.

Section 09: Melting point/Freezing point information was added.

Section 9: Flammable limits (LEL) information information was added.

Section 9: Flammable limits (UEL) information information was added.

Section 9: Odour Threshold information was added.

Section 9: Property description for optional properties information was modified.

Section 9: Solubility (non-water) information was added.

Section 09: Solubility as text (non-water) information was added.

Section 9: Solubility in water text information was added.

Section 9: Solubility in water value information was added.

Section 9: Vapor density text information was added.

Section 12: Component ecotoxicity information information was modified.

Section 12: Persistence and Degradability information information was modified.

Section 13: 13.1. Waste disposal note information was modified.

Section 14: Environmental hazards information was added.

Section 14: IMO Subsidiary Risk information was added.

Section 14: IMO transport hazard classes information was added.

Section 14: Proper Shipping Name (IMO) information was added.

Section 14: UN Number (IMO) information was added.

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

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