



Safety Data Sheet

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Document group:	18-9027-6	Version number:	1.01
Issue Date:	02/08/2021	Supersedes date:	14/10/2014

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™ Adper™ Single Bond 2

1.2. Recommended use and restrictions on use

Recommended use

Dental Product, Adhesive

Restrictions on use

For use by dental professionals only.

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

Flammable Liquid: Category 2.

Acute Toxicity (dermal): Category 5.

Serious Eye Damage/Irritation: Category 2A

Skin Sensitizer: Category 1.

2.2. Label elements

Signal Word

DANGER!

Symbols

Flame | Exclamation mark |

Pictograms**HAZARD STATEMENTS:**

H225 Highly flammable liquid and vapour.
 H313 May be harmful in contact with skin.
 H319 Causes serious eye irritation.
 H317 May cause an allergic skin reaction.

PRECAUTIONARY STATEMENTS**Prevention:**

P210A Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P280E Wear protective gloves.

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.

Disposal:

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

2.3. Other hazards

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
Ethanol	64-17-5	25 - 35
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2	10 - 20
Silane Treated Silica	None	10 - 20
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	5 - 15
Copolymer Of Acrylic And Itaconic Acids	25948-33-8	5 - 10
Glycerol 1,3 Dimethacrylate	1830-78-0	5 - 10
Diurethane Dimethacrylate (UDMA)	72869-86-4	< 5
Water	7732-18-5	< 5
Diphenyliodonium Hexafluorophosphate	58109-40-3	< 0.5

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation

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

Skin contact

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

Eye contact

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 flammable liquids such as dry chemical or carbon dioxide to extinguish.

5.2. Special hazards arising from the substance or mixture

Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.

5.3. Special protective actions for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. 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. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. 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. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. 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.

6.3. Methods and material for containment and cleaning up

Contain spill. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal 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

A no-touch technique is recommended. If skin contact occurs, wash skin with soap and water. Acrylates may penetrate commonly-used gloves. If product contacts glove, remove and discard glove, wash hands immediately with soap and water and then re-glove. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Take precautionary measures against static discharge. Avoid breathing dust/fume/gas/mist/vapours/spray. 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.) Do not get in eyes.

7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep cool. Keep container tightly closed. 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
Ethanol	64-17-5	ACGIH	STEL:1000 ppm	A3: Confirmed animal 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 in a well-ventilated area.

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.

Skin/hand protection

See Section 7.1 for additional information on skin protection.

Respiratory protection

None required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Liquid.
Color	Light White-Yellow
Odor	Slight Acrylate
Odour threshold	<i>No data available.</i>
pH	<i>No data available.</i>
Melting point/Freezing point: NA	<i>Not applicable.</i>
Boiling point/Initial boiling point/Boiling range	78 °C
Flash point	18.5 °C [Test Method: Closed Cup]
Evaporation rate	<i>No data available.</i>
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	<i>No data available.</i>
Flammable Limits(UEL)	<i>No data available.</i>
Vapour pressure	<i>No data available.</i>
Vapor Density and/or Relative Vapor Density	<i>No data available.</i>
Density	1.075 g/ml
Relative density	1.075 [Ref Std: WATER=1]
Water solubility	Negligible
Solubility- non-water	<i>No data available.</i>
Partition coefficient: n-octanol/water	<i>Not applicable.</i>
Autoignition temperature	410 °C
Decomposition temperature	<i>No data available.</i>
Viscosity/Kinematic Viscosity	<i>No data available.</i>
Volatile organic compounds (VOC)	
Percent volatile	<i>No data available.</i>
VOC less H ₂ O & exempt solvents	
Molecular weight	<i>No data available.</i>

Nanoparticles

This material contains nanoparticles.

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

Heat.

Sparks and/or flames.

10.5 Incompatible materials

None known.

10.6 Hazardous decomposition products**Substance**

None known.

Condition

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.

Skin contact

May be harmful in contact with skin.

Contact with the skin during product use is not expected to result in significant irritation. 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.

Additional information:

This product contains ethanol. Alcoholic beverages and ethanol in alcoholic beverages have been classified by the International Agency for Research on Cancer as carcinogenic to humans. There are also data associating human consumption of alcoholic beverages with developmental toxicity and liver toxicity. Exposure to ethanol during the foreseeable use of this product is not expected to cause cancer, developmental toxicity, or liver toxicity.

Toxicological Data

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

Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Overall product	Dermal	Rabbit	LD50 > 2,000 mg/kg
Ethanol	Dermal	Rabbit	LD50 > 15,800 mg/kg
Ethanol	Inhalation-Vapor (4 hours)	Rat	LC50 124.7 mg/l
Ethanol	Ingestion	Rat	LD50 17,800 mg/kg
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-	Dermal	Professio	LD50 estimated to be > 5,000 mg/kg

propanediyl)] bismethacrylate		nal judgeme nt	
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Ingestion	Rat	LD50 > 11,700 mg/kg
Silane Treated Silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Silane Treated Silica	Inhalation- Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Silane Treated Silica	Ingestion	Rat	LD50 > 5,110 mg/kg
2-Hydroxyethyl Methacrylate (HEMA)	Dermal	Rabbit	LD50 > 5,000 mg/kg
2-Hydroxyethyl Methacrylate (HEMA)	Ingestion	Rat	LD50 5,564 mg/kg
Glycerol 1,3 Dimethacrylate	Ingestion	Rat	LD50 > 2,000 mg/kg
Copolymer Of Acrylic And Itaconic Acids	Ingestion	Rat	LD50 > 5,000 mg/kg
Copolymer Of Acrylic And Itaconic Acids	Dermal	similar health hazards	LD50 estimated to be > 5,000 mg/kg
Diurethane Dimethacrylate (UDMA)	Dermal	Professio nal judgeme nt	LD50 estimated to be > 5,000 mg/kg
Diurethane Dimethacrylate (UDMA)	Ingestion	Rat	LD50 > 5,000 mg/kg
Diphenyliodonium Hexafluorophosphate	Ingestion	Rat	LD50 32 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Ethanol	Rabbit	No significant irritation
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Rabbit	No significant irritation
Silane Treated Silica	Rabbit	No significant irritation
2-Hydroxyethyl Methacrylate (HEMA)	Rabbit	Minimal irritation
Glycerol 1,3 Dimethacrylate	Rabbit	No significant irritation
Diphenyliodonium Hexafluorophosphate	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Ethanol	Rabbit	Severe irritant
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	In vitro data	No significant irritation
Silane Treated Silica	Rabbit	No significant irritation
2-Hydroxyethyl Methacrylate (HEMA)	Rabbit	Moderate irritant
Glycerol 1,3 Dimethacrylate	In vitro data	Severe irritant
Diphenyliodonium Hexafluorophosphate	Rabbit	Mild irritant

Sensitization:

Skin Sensitisation

Name	Species	Value
Ethanol	Human	Not classified
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Mouse	Not classified
Silane Treated Silica	Human and animal	Not classified
2-Hydroxyethyl Methacrylate (HEMA)	Human and animal	Sensitising
Glycerol 1,3 Dimethacrylate	Mouse	Not classified
Diurethane Dimethacrylate (UDMA)	Guinea	Sensitising

pig

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
Ethanol	In Vitro	Some positive data exist, but the data are not sufficient for classification
Ethanol	In vivo	Some positive data exist, but the data are not sufficient for classification
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	In Vitro	Not mutagenic
Silane Treated Silica	In Vitro	Not mutagenic
2-Hydroxyethyl Methacrylate (HEMA)	In vivo	Not mutagenic
2-Hydroxyethyl Methacrylate (HEMA)	In Vitro	Some positive data exist, but the data are not sufficient for classification
Diphenyliodonium Hexafluorophosphate	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Ethanol	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Silane Treated Silica	Not specified.	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
Ethanol	Inhalation	Not classified for development	Rat	NOAEL 38 mg/l	during gestation
Ethanol	Ingestion	Not classified for development	Rat	NOAEL 5,200 mg/kg/day	premating & during gestation
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during gestation
Silane Treated Silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Silane Treated Silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Silane Treated Silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
2-Hydroxyethyl Methacrylate (HEMA)	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
2-Hydroxyethyl Methacrylate (HEMA)	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	49 days
2-Hydroxyethyl Methacrylate (HEMA)	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation

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

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
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Ethanol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	LOAEL 9.4 mg/l	not available
Ethanol	Inhalation	central nervous system depression	Not classified	Human and animal	NOAEL not available	
Ethanol	Ingestion	central nervous system depression	Not classified	Multiple animal species	NOAEL not available	
Ethanol	Ingestion	kidney and/or bladder	Not classified	Dog	NOAEL 3,000 mg/kg	
Copolymer Of Acrylic And Itaconic Acids	Ingestion	nervous system	Not classified	Rat	NOAEL 5,000 mg/kg	
Diphenyliodonium Hexafluorophosphate	Inhalation	respiratory irritation	Not classified	Not available	Irritation Equivocal	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Ethanol	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rabbit	LOAEL 124 mg/l	365 days
Ethanol	Inhalation	hematopoietic system immune system	Not classified	Rat	NOAEL 25 mg/l	14 days
Ethanol	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 8,000 mg/kg/day	4 months
Ethanol	Ingestion	kidney and/or bladder	Not classified	Dog	NOAEL 3,000 mg/kg/day	7 days
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	Ingestion	endocrine system hematopoietic system liver heart skin gastrointestinal tract bone, teeth, nails, and/or hair immune system muscles nervous system eyes kidney and/or bladder respiratory system vascular system	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
Silane Treated Silica	Inhalation	respiratory system silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Copolymer Of Acrylic And Itaconic Acids	Ingestion	endocrine system hematopoietic system liver	Not classified	Rat	NOAEL 200 mg/kg/day	28 days
Copolymer Of Acrylic And Itaconic Acids	Ingestion	heart bone, teeth, nails, and/or hair immune system muscles nervous system eyes kidney and/or bladder respiratory system vascular system	Not classified	Rat	NOAEL 2,000 mg/kg/day	28 days

Aspiration Hazard

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

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

SECTION 12: Ecological information

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

Not acutely toxic to aquatic life by GHS criteria.

Chronic aquatic hazard:

Not chronically toxic to aquatic life by GHS criteria.

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
Ethanol	64-17-5	Fathead minnow	Experimental	96 hours	LC50	14,200 mg/l
Ethanol	64-17-5	Fish other	Experimental	96 hours	LC50	11,000 mg/l
Ethanol	64-17-5	Green algae	Experimental	72 hours	EC50	275 mg/l
Ethanol	64-17-5	Water flea	Experimental	48 hours	LC50	5,012 mg/l
Ethanol	64-17-5	Green algae	Experimental	72 hours	ErC10	11.5 mg/l
Ethanol	64-17-5	Water flea	Experimental	10 days	NOEC	9.6 mg/l
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2	Common Carp	Analogous Compound	96 hours	No tox obs at lmt of water sol	>100 mg/l
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2	Green Algae	Endpoint not reached	96 hours	EC50	>100 mg/l
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2	Green Algae	Experimental	96 hours	EC10	1.1 mg/l
Silane Treated Silica	None		Data not available or insufficient for classification			N/A
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	Turbot	Analogous Compound	96 hours	LC50	833 mg/l

2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	Fathead minnow	Experimental	96 hours	LC50	227 mg/l
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	Green algae	Experimental	72 hours	EC50	710 mg/l
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	Water flea	Experimental	48 hours	EC50	380 mg/l
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	Green Algae	Experimental	72 hours	NOEC	160 mg/l
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	Water flea	Experimental	21 days	NOEC	24.1 mg/l
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9		Experimental	16 hours	EC0	>3,000 mg/l
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9		Experimental	18 hours	LD50	<98 mg per kg of bodyweight
Copolymer Of Acrylic And Itaconic Acids	25948-33-8		Data not available or insufficient for classification			N/A
Glycerol 1,3 Dimethacrylate	1830-78-0	Guppy	Experimental	96 hours	LC50	43.2 mg/l
Diurethane Dimethacrylate (UDMA)	72869-86-4	Green algae	Endpoint not reached	72 hours	ErC50	>100 mg/l
Diurethane Dimethacrylate (UDMA)	72869-86-4	Water flea	Experimental	48 hours	EC50	>100 mg/l
Diurethane Dimethacrylate (UDMA)	72869-86-4	Zebra Fish	Experimental	96 hours	LC50	10.1 mg/l
Diurethane Dimethacrylate (UDMA)	72869-86-4	Green algae	Endpoint not reached	72 hours	ErC10	>100 mg/l
Diphenyliodonium Hexafluorophosphate	58109-40-3	Water flea	Experimental	48 hours	EC50	9.5 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Ethanol	64-17-5	Experimental	14 days	BOD	89 %	OECD 301C - MITI

		Biodegradation			BOD/ThBOD	test (I)
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	29 days (t 1/2)	
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	1565-94-2	Experimental Biodegradation	28 days	BOD	21 % BOD/ThBOD	similar to OECD 301F
Silane Treated Silica	None	Data not available-insufficient			N/A	
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	Experimental Hydrolysis		Hydrolytic half-life (pH 10)	10.9 days (t 1/2)	OECD 111 Hydrolysis func of pH
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	Experimental Biodegradation	28 days	BOD	84 %BOD/CO D	OECD 301D - Closed bottle test
Copolymer Of Acrylic And Itaconic Acids	25948-33-8	Data not available-insufficient			N/A	
Glycerol 1,3 Dimethacrylate	1830-78-0	Experimental Biodegradation	28 days	BOD	84 % BOD/ThBOD	OECD 301F - Manometric respirometry
Diurethane Dimethacrylate (UDMA)	72869-86-4	Experimental Biodegradation	28 days	CO2 evolution	22 %CO2 evolution/THC O2 evolution (does not pass 10-day window)	OECD 301B - Modified sturm or CO2
Diphenyliodonium Hexafluorophosphate	58109-40-3	Data not available-insufficient			N/A	

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Ethanol	64-17-5	Experimental Bioconcentration		Log Kow	-0.35	Non-standard method
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)]	1565-94-2	Experimental Bioconcentration		Log Kow	4.63	

bismethacrylate						
Silane Treated Silica	None	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-Hydroxyethyl Methacrylate (HEMA)	868-77-9	Experimental Bioconcentration		Log Kow	0.42	OECD 107 log Kow shke flask mtd
Copolymer Of Acrylic And Itaconic Acids	25948-33-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Glycerol 1,3 Dimethacrylate	1830-78-0	Estimated Bioconcentration		Log Kow	2.05	Non-standard method
Diurethane Dimethacrylate (UDMA)	72869-86-4	Experimental Bioconcentration		Log Kow	3.39	Non-standard method
Diphenyliodonium Hexafluorophosphate	58109-40-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

12.4. Mobility in soil

Please contact manufacturer for more details

12.5 Other Adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Disposal methods

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

Incinerate in a permitted waste incineration facility.

SECTION 14: Transport Information

Air Transport (IATA) Regulations

UN No UN1133

Proper Shipping Name Adhesives

Hazard Class/Division 3

Subsidiary Risk Not applicable

Packing Group: II

Marine Transport (IMDG)

UN No UN1133

Proper Shipping Name Adhesives

Hazard Class/Division 3

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.

Applicable Environmental, Health and Safety Regulations

The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989

The Bio Medical Waste (Management & Handling) Rules, 1998

Hazardous Chemicals (Classification, Packaging and Labelling Draft Rules), 2011

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

Ethanol

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 Very Highly Flammable liquid as per MSIHC Rules, 1989.

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 **Flammability:** 3 **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.

US Section 01 Product Use - Recommended Use information was modified.

Section 2: Hazard - Other information was modified.

Label: GHS Classification information was modified.

Label: GHS Environmental Hazard Statements information was deleted.

Label: GHS Precautionary - Prevention information was modified.

Label: GHS Precautionary - Response information was modified.

Section 2: Ingredient table information was modified.

Section 03: Material is a mixture standard phrase information was modified.

Section 04: First Aid - Symptoms and Effects (GHS) information was added.

Section 4: First aid for eye contact information information was modified.

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: Appropriate Engineering controls information information was modified.

Section 8: Personal Protection - Respiratory Information information was deleted.

Section 8: Personal Protection - Skin/hand information information was modified.

Section 8: Respiratory protection information information was added.

Section 09: Color information was added.
Section 09: Nanoparticle information was added.
Section 09: Odor information was added.
Sections 3 and 9: Odour, colour, grade information information was deleted.
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: Viscosity information was added.
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: Aspiration Hazard text information was added.
Section 11: Carcinogenicity Table information was modified.
Section 11: Germ Cell Mutagenicity Table information was modified.
Section 11: Health Effects - Eye information 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: Reproductive and/or Developmental Effects text information was added.
Section 11: Reproductive Toxicity Table information was modified.
Section 11: Respiratory Sensitization text information was added.
Section 11: Serious Eye Damage/Irritation Table information was modified.
Section 11: Single exposure may cause standard phrases information was deleted.
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: Bioaccumulative 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: IMO Subsidiary Risk information was added.
Section 14: IMO transport hazard classes information was added.
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 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 Part I of Schedule I ingredients information was added.
Section 16: NFPA hazard classification for flammability information was modified.
Section 16: UK disclaimer information was deleted.

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