Safety Data Sheet

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Document Group:	08-8284-5	**Version Number:**	12.02
Issue Date:	09/27/26	**Supersedes Date:**	04/30/25

SECTION 1: Identification

1.1. Product identifier
3M™ Scotch-Weld™ Structural Plastic Adhesive DP8005 Off-White and Structural Plastic Adhesive 8005 Off-White, Part A

Product Identification Numbers

ID Number	UPC	ID Number	UPC
62-2886-7530-9	00-21200-41552-4		

7100022995

1.2. Recommended use and restrictions on use

Recommended use
Structural adhesive

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Industrial Adhesives and Tapes Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number
1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification
Flammable Liquid: Category 4.
Serious Eye Damage/Irritation: Category 1.
Respiratory Sensitizer: Category 1.
Skin Sensitizer: Category 1.
Germ Cell Mutagenicity: Category 2.

2.2. Label elements
Signal word
Danger

Symbols
Corrosion |Health Hazard |

Pictograms



Hazard Statements
Combustible Liquid

Causes serious eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Suspected of causing genetic defects.

Precautionary statements

Prevention:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Avoid breathing vapors.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves, eye protection, and face protection.
In case of inadequate ventilation wear respiratory protection.

Response:
IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Immediately call a POISON CENTER or doctor.
If experiencing respiratory symptoms or if skin irritation or rash occurs: Call a POISON CENTER or doctor.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

Storage:
Store in a well-ventilated place.
Store locked up.

Disposal:
Dispose of contents and container in accordance with applicable local, regional, national, and international regulations.

Supplemental Information:
Persons previously sensitized to amines may develop a cross-sensitization reaction to certain other amines.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Polyester Adipate (NJTS Reg. No. 04499600-7142)	Trade Secret*	40 - 70

Polyfunctional Aziridine	64265-57-2	20 - 40 Trade Secret *
Amine Borane Complex	223674-50-8	6.7 - 18
Amorphous Silica	67762-90-7	0.5 - 1.5
Titanium Dioxide	13463-67-7	0.1 - 0.5 Trade Secret *

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

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 for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately 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 respiratory reaction (difficulty breathing, wheezing, cough, and tightness of chest). Allergic skin reaction (redness, swelling, blistering, and itching). Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of vision).

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

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

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

6.3. Methods and material for containment and cleaning up
Contain spill. Cover spill area with a fire-extinguishing foam. 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 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 authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

Refer to Section 15 for additional information

SECTION 7: Handling and storage

7.1. Precautions for safe handling
For industrial/occupational use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Keep cool. Store away from heat. Store away from acids. Store away from oxidizing agents.

Refer to Section 15 for additional information

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Titanium Dioxide	13463-67-7	ACGIH	TWA(Respirable nanoscale particles):0.2 mg/m3;TWA(Respirable finescale particles):2.5 mg/m3	A3: Confirmed animal carcin.
Titanium Dioxide	13463-67-7	OSHA	TWA(as total dust):15 mg/m3	
Silica: Amorphous, including natural diatomaceous earth	67762-90-7	OSHA	TWA:20 millions of particles/cu. ft.;TWA concentration:0.8 mg/m3	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

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

8.2.2. Personal protective equipment (PPE)

Eye/face protection

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

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

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

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

Respiratory protection

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

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

Refer to Section 15 for additional information

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Specific Physical Form:	Paste
Color	White
Odor	Mild Acrylic
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point	*Not Applicable*
Boiling Point	>=180 ºF
Flash Point	180 ºF [*Test Method:*Closed Cup]
Evaporation rate	*No Data Available*
Flammability	Flammable Liquid: Category 4.
Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*
Vapor Pressure	<=0.1 mmHg
Relative Vapor Density	*No Data Available*
Density	1.063 g/ml
Relative Density	1.063 [*Ref Std:*WATER=1]
Solubility in Water	Slight (less than 10%)
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*No Data Available*
Kinematic Viscosity	46,096 mm2/sec
Hazardous Air Pollutants	0 % weight [*Test Method:*Calculated]
Molecular weight	*No Data Available*
Volatile Organic Compounds	<=65 g/l [*Test Method:*calculated SCAQMD rule 443.1] [*Details:*EU VOC content]
Percent volatile	5 - 10 % weight [*Test Method:*ACS METHOD]
VOC Less H2O & Exempt Solvents	7.8 g/l [*Details:*when used as intended with Part B]
VOC Less H2O & Exempt Solvents	0.8 % [*Details:*when used as intended with Part B]
VOC Less H2O & Exempt Solvents	65 g/l [*Test Method:*calculated SCAQMD rule 443.1] [*Details:*as supplied]
Particle Characteristics	*Not Applicable*

SECTION 10: Stability and reactivity

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

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Heat
Sparks and/or flames

10.5. Incompatible materials
Strong acids
Strong oxidizing agents

10.6. Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

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

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

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

Inhalation:
Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Allergic Respiratory Reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest.

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

Ingestion:
May be harmful if swallowed. Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Additional Health Effects:

Genotoxicity:
Genotoxicity and Mutagenicity: May interact with genetic material and possibly alter gene expression.

Carcinogenicity:

Ingredient	CAS No.	Class Description	Regulation
Titanium dioxide	13463-67-7	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

Additional Information:
Persons previously sensitized to amines may develop a cross-sensitization 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	Ingestion		No data available; calculated ATE >2,000 - =5,000 mg/kg
Polyfunctional Aziridine	Dermal	Rabbit	LD50 > 3,000 mg/kg
Polyfunctional Aziridine	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.252 mg/l
Polyfunctional Aziridine	Ingestion	Rat	LD50 3,038 mg/kg
Amine Borane Complex	Ingestion	Rat	LD50 693 mg/kg
Amorphous Silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Amorphous Silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Amorphous Silica	Ingestion	Rat	LD50 > 5,110 mg/kg
Titanium Dioxide	Dermal	Rabbit	LD50 > 10,000 mg/kg
Titanium Dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l
Titanium Dioxide	Ingestion	Rat	LD50 > 10,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Polyfunctional Aziridine	Rabbit	Mild irritant
Amine Borane Complex	Rabbit	No significant irritation
Amorphous Silica	Rabbit	No significant irritation
Titanium Dioxide	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Polyfunctional Aziridine	Rabbit	Corrosive
Amine Borane Complex	Professional judgement	Severe irritant
Amorphous Silica	Rabbit	No significant irritation
Titanium Dioxide	Rabbit	No significant irritation

Skin Sensitization

Name	Species	Value
Polyfunctional Aziridine	Human and animal	Sensitizing
Amine Borane Complex	Guinea pig	Sensitizing
Amorphous Silica	Human and animal	Not classified
Titanium Dioxide	Human and animal	Not classified

Respiratory Sensitization

Name	Species	Value
Polyfunctional Aziridine	Human	Sensitizing

Germ Cell Mutagenicity

Name	Route	Value
Polyfunctional Aziridine	In vivo	Mutagenic
Amine Borane Complex	In Vitro	Not mutagenic
Amorphous Silica	In Vitro	Not mutagenic
Titanium Dioxide	In Vitro	Not mutagenic
Titanium Dioxide	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Amorphous Silica	Not Specified	Mouse	Some positive data exist, but the data are not sufficient for classification
Titanium Dioxide	Ingestion	Multiple animal species	Not carcinogenic
Titanium Dioxide	Inhalation	Rat	Carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Amorphous Silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Amorphous Silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Amorphous Silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 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
Polyfunctional Aziridine	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	4 hours

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Amorphous Silica	Inhalation	respiratory system	Not classified	Human	NOAEL Not available	occupational exposure
Amorphous Silica	Inhalation	silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Titanium Dioxide	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.01 mg/l	2 years
Titanium Dioxide	Inhalation	pulmonary fibrosis	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

Ecotoxicological information

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

Chemical fate information

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

SECTION 13: Disposal considerations

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

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. 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.

EPA Hazardous Waste Number (RCRA): Not regulated

Refer to Section 15 for additional information

SECTION 14: Transport Information

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

EPCRA 311/312 Hazard Classifications:

Physical Hazards
Flammable (gases, aerosols, liquids, or solids)

Health Hazards
Germ cell mutagenicity
Respiratory or Skin Sensitization
Serious eye damage or eye irritation

Additional TSCA Information

Components	CAS No	Additional Information
Amine Borane Complex	223674-50-8	Allowed use(s): Catalyst. Required exposure controls when handling the LVE substance: Appropriate local exhaust ventilation; chemical safety goggles; rubber gloves; laboratory coat and/or apron as appropriate based on the results of an exposure assessment; NIOSH approved respirator based on airborne concentration of contaminants and in accordance to OSHA regulations. Required environmental release controls for the LVE substance: Incineration of wastes and cleanup materials in a permitted facility.

15.2. State Regulations
Contact 3M for more information.

15.3. Chemical Inventories
The components of this product are in compliance with the chemical notification requirements of TSCA. One or more of the components in this material is not listed on the TSCA inventory, but is approved for specific commercial use(s) under a US EPA low volume exemption.

Contact 3M for more information.

15.4. International Regulations
Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification
Health: 3 **Flammability:** 2 **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.

Document Group:	08-8284-5	**Version Number:**	12.02
Issue Date:	09/27/26	**Supersedes Date:**	04/30/25

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Safety Data Sheet

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Document Group:	28-2521-4	**Version Number:**	7.06
Issue Date:	09/27/26	**Supersedes Date:**	11/25/24

SECTION 1: Identification

1.1. Product identifier
3M(TM) Scotch-Weld(TM) Structural Plastic Adhesive DP8005 Off-White, Part B

1.2. Recommended use and restrictions on use

Recommended use
Adhesive

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Industrial Adhesives and Tapes Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number
1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification
Serious Eye Damage/Irritation: Category 1.
Respiratory Sensitizer: Category 1.
Skin Sensitizer: Category 1.
Carcinogenicity: Category 2.
Reproductive Toxicity: Category 1B.

2.2. Label elements
Signal word
Danger

Symbols
Corrosion |Health Hazard |

Pictograms



Hazard Statements

Causes serious eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Suspected of causing cancer.
May damage fertility or the unborn child.

Precautionary statements

Prevention:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing vapors.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves, eye protection, and face protection.
In case of inadequate ventilation wear respiratory protection.

Response:
IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Immediately call a POISON CENTER or doctor.
If experiencing respiratory symptoms or if skin irritation or rash occurs: Call a POISON CENTER or doctor.
Take off contaminated clothing and wash it before reuse.

Storage:
Store locked up.

Disposal:
Dispose of contents and container in accordance with applicable local, regional, national, and international regulations.

24% of the mixture consists of ingredients of unknown acute oral toxicity.
24% of the mixture consists of ingredients of unknown acute dermal toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Tetrahydrofurfuryl Methacrylate	2455-24-5	30 - 60 Trade Secret *
Acrylate Polymer (NJTS Reg. No. 04499600-6800)	Trade Secret*	10 - 30
2-Ethylhexyl Methacrylate	688-84-6	10 - 20 Trade Secret *
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	21282-97-3	1 - 15
Glass Spheres (NJTS Reg. No. 04499600-7431)	Trade Secret*	1 - 10
Impact Modifier	20882-04-6	1 - 5 Trade Secret *
Succinic Anhydride	108-30-5	0.1 - 1 Trade Secret *
Tetrahydrofurfuryl Alcohol	97-99-4	<= 0.3

2-Hydroxyethyl Methacrylate	868-77-9	<= 0.3
Methyl Methacrylate	80-62-6	<= 0.2
Styrene Monomer	100-42-5	<= 0.2
Maleic Anhydride	108-31-6	<= 0.002

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

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 for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately 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 respiratory reaction (difficulty breathing, wheezing, cough, and tightness of chest). Allergic skin reaction (redness, swelling, blistering, and itching). Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of vision).

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.

Hazardous Decomposition or By-Products

Substance	Condition
Aldehydes	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Cyanide	During Combustion
Irritant Vapors or Gases	During Combustion
Oxides of Nitrogen	During Combustion

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

SECTION 6: Accidental release measures

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

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

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

SECTION 7: Handling and storage

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

7.2. Conditions for safe storage including any incompatibilities
Store away from heat. Store away from acids.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Styrene Monomer	100-42-5	ACGIH	TWA:10 ppm;STEL:20 ppm	A3: Confirmed animal carcin., Ototoxicant
Styrene Monomer	100-42-5	OSHA	TWA:100 ppm;CEIL:200 ppm	
Maleic Anhydride	108-31-6	ACGIH	TWA(inhalable fraction and vapor):0.01 mg/m3	A4: Not class. as human carcin, Dermal/Respiratory Sensitizer

Maleic Anhydride	108-31-6	OSHA	TWA:1 mg/m3(0.25 ppm)	
Methyl Methacrylate	80-62-6	ACGIH	TWA:50 ppm;STEL:100 ppm	A4: Not class. as human carcin, Dermal Sensitizer
Methyl Methacrylate	80-62-6	OSHA	TWA:410 mg/m3(100 ppm)	
Tetrahydrofurfuryl Alcohol	97-99-4	AIHA	TWA:2 mg/m3(0.5 ppm)	SKIN

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

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

8.2.2. Personal protective equipment (PPE)

Eye/face protection

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

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

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

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

Respiratory protection

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

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid

Specific Physical Form:	Paste
Color	Off-White
Odor	Mild Acrylic
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point	*Not Applicable*
Boiling Point	>=180 ºF
Flash Point	218 ºF [*Test Method:*Closed Cup]
Evaporation rate	*No Data Available*
Flammability	Not Applicable
Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*
Vapor Pressure	<=0.1 mmHg [@ 20 ºC]
Relative Vapor Density	*No Data Available*
Density	0.98 g/ml
Relative Density	0.98 [*Ref Std:*WATER=1]
Solubility in Water	Slight (less than 10%)
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*No Data Available*
Kinematic Viscosity	23,469 mm2/sec
Hazardous Air Pollutants	0 % weight [*Test Method:*Calculated]
Molecular weight	*No Data Available*
VOC Less H2O & Exempt Solvents	7.3 g/l [*Details:*when used as intended with Part A]
VOC Less H2O & Exempt Solvents	0.8 % [*Details:*when used as intended with Part A]
VOC Less H2O & Exempt Solvents	392 g/l [*Test Method:*calculated SCAQMD rule 443.1] [*Details:*as supplied]
Particle Characteristics	*Not Applicable*

SECTION 10: Stability and reactivity

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

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Heat

10.5. Incompatible materials
Strong acids

10.6. Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

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

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

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

Inhalation:
Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Allergic Respiratory Reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest. May cause additional health effects (see below).

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

Carcinogenicity:
Contains a chemical or chemicals which can cause cancer.

Ingredient	CAS No.	Class Description	Regulation
Styrene	100-42-5	Grp. 2A: Probable human carc.	International Agency for Research on Cancer
Styrene	100-42-5	Anticipated human carcinogen	National Toxicology Program Carcinogens

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

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >2,000 - =5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Tetrahydrofurfuryl Methacrylate	Ingestion	Rat	LD50 4,000 mg/kg
Tetrahydrofurfuryl Methacrylate	Dermal	similar	LD50 estimated to be 2,000 - 5,000 mg/kg

		health hazards	
2-Ethylhexyl Methacrylate	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
2-Ethylhexyl Methacrylate	Ingestion	Rat	LD50 > 2,000 mg/kg
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Dermal	Rat	LD50 > 2,000 mg/kg
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Ingestion	Rat	LD50 > 5,000 mg/kg
Impact Modifier	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
Impact Modifier	Ingestion	Rat	LD50 > 2,000 mg/kg
Succinic Anhydride	Dermal	Rat	LD50 > 2,000 mg/kg
Succinic Anhydride	Ingestion	Rat	LD50 1,510 mg/kg
Tetrahydrofurfuryl Alcohol	Dermal	Professional judgement	LD50 estimated to be 2,000 - 5,000 mg/kg
Tetrahydrofurfuryl Alcohol	Inhalation-Vapor (4 hours)	Rat	LC50 > 3.1 mg/l
Tetrahydrofurfuryl Alcohol	Ingestion	Rat	LD50 > 2,000 mg/kg
2-Hydroxyethyl Methacrylate	Dermal	Rabbit	LD50 > 5,000 mg/kg
2-Hydroxyethyl Methacrylate	Ingestion	Rat	LD50 5,564 mg/kg
Methyl Methacrylate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Methyl Methacrylate	Inhalation-Vapor (4 hours)	Rat	LC50 29.8 mg/l
Methyl Methacrylate	Ingestion	Rat	LD50 7,900 mg/kg
Styrene Monomer	Dermal	Rat	LD50 > 2,000 mg/kg
Styrene Monomer	Inhalation-Vapor (4 hours)	Rat	LC50 11.8 mg/l
Styrene Monomer	Ingestion	Rat	LD50 5,000 mg/kg
Maleic Anhydride	Dermal	Rabbit	LD50 2,620 mg/kg
Maleic Anhydride	Ingestion	Rat	LD50 1,030 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Tetrahydrofurfuryl Methacrylate	Rabbit	No significant irritation
2-Ethylhexyl Methacrylate	Rabbit	Minimal irritation
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Rabbit	No significant irritation
Impact Modifier	Professional judgement	Mild irritant
Succinic Anhydride	In vitro data	Corrosive
Tetrahydrofurfuryl Alcohol	Rabbit	No significant irritation
2-Hydroxyethyl Methacrylate	Rabbit	Minimal irritation
Methyl Methacrylate	Rabbit	Irritant
Styrene Monomer	Professional judgement	Mild irritant
Maleic Anhydride	Human and animal	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Tetrahydrofurfuryl Methacrylate	Rabbit	No significant irritation
2-Ethylhexyl Methacrylate	Rabbit	No significant irritation
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Rabbit	No significant irritation
Impact Modifier	In vitro data	Corrosive
Succinic Anhydride	similar health hazards	Corrosive
Tetrahydrofurfuryl Alcohol	Rabbit	Severe irritant
2-Hydroxyethyl Methacrylate	Rabbit	Moderate irritant
Methyl Methacrylate	Rabbit	Mild irritant
Styrene Monomer	Professional judgement	Moderate irritant
Maleic Anhydride	Rabbit	Corrosive

Skin Sensitization

Name	Species	Value
Tetrahydrofurfuryl Methacrylate	official classification	Sensitizing
2-Ethylhexyl Methacrylate	Guinea pig	Sensitizing
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Mouse	Not classified
Impact Modifier	Professional judgement	Sensitizing
Succinic Anhydride	Mouse	Sensitizing
Tetrahydrofurfuryl Alcohol	Mouse	Not classified
2-Hydroxyethyl Methacrylate	Human and animal	Sensitizing
Methyl Methacrylate	Human and animal	Sensitizing
Styrene Monomer	Guinea pig	Not classified
Maleic Anhydride	Multiple animal species	Sensitizing

Respiratory Sensitization

Name	Species	Value
Succinic Anhydride	similar compounds	Sensitizing
Methyl Methacrylate	Human	Not classified
Maleic Anhydride	Human	Sensitizing

Germ Cell Mutagenicity

Name	Route	Value
Tetrahydrofurfuryl Methacrylate	In Vitro	Not mutagenic
2-Ethylhexyl Methacrylate	In Vitro	Not mutagenic
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	In vivo	Not mutagenic
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	In Vitro	Some positive data exist, but the data are not sufficient for classification
Impact Modifier	In Vitro	Not mutagenic

Succinic Anhydride	In Vitro	Not mutagenic
Tetrahydrofurfuryl Alcohol	In Vitro	Not mutagenic
2-Hydroxyethyl Methacrylate	In vivo	Not mutagenic
2-Hydroxyethyl Methacrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Methyl Methacrylate	In vivo	Not mutagenic
Methyl Methacrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Styrene Monomer	In Vitro	Some positive data exist, but the data are not sufficient for classification
Styrene Monomer	In vivo	Some positive data exist, but the data are not sufficient for classification
Maleic Anhydride	In vivo	Not mutagenic
Maleic Anhydride	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Succinic Anhydride	Ingestion	Multiple animal species	Not carcinogenic
Methyl Methacrylate	Ingestion	Rat	Not carcinogenic
Methyl Methacrylate	Inhalation	Human and animal	Not carcinogenic
Styrene Monomer	Ingestion	Mouse	Carcinogenic
Styrene Monomer	Inhalation	Human and animal	Carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Tetrahydrofurfuryl Methacrylate	Ingestion	Not classified for male reproduction	Rat	NOAEL 300 mg/kg/day	29 days
Tetrahydrofurfuryl Methacrylate	Ingestion	Toxic to female reproduction	Rat	NOAEL 120 mg/kg/day	premating into lactation
Tetrahydrofurfuryl Methacrylate	Ingestion	Toxic to development	Rat	NOAEL 120 mg/kg/day	premating into lactation
2-Ethylhexyl Methacrylate	Ingestion	Not classified for male reproduction		NOAEL 1,000 mg/kg/day	49 days
2-Ethylhexyl Methacrylate	Ingestion	Not classified for female reproduction		NOAEL 300 mg/kg/day	premating into lactation
2-Ethylhexyl Methacrylate	Ingestion	Not classified for development		NOAEL 300 mg/kg/day	during gestation
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Ingestion	Not classified for female reproduction	Rat	NOAEL 500 mg/kg/day	premating into lactation
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Ingestion	Not classified for male reproduction	Rat	NOAEL 500 mg/kg/day	56 days
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during gestation
Tetrahydrofurfuryl Alcohol	Ingestion	Toxic to female reproduction	Rat	NOAEL 50 mg/kg/day	premating into lactation
Tetrahydrofurfuryl Alcohol	Dermal	Toxic to male reproduction	Rat	NOAEL 100 mg/kg/day	13 weeks
Tetrahydrofurfuryl Alcohol	Ingestion	Toxic to male reproduction	Rat	NOAEL 150 mg/kg/day	47 days
Tetrahydrofurfuryl Alcohol	Inhalation	Toxic to male reproduction	Rat	NOAEL 0.6 mg/l	90 days
Tetrahydrofurfuryl Alcohol	Ingestion	Toxic to development	Rat	NOAEL 50 mg/kg/day	premating into lactation
2-Hydroxyethyl Methacrylate	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during

					gestation
2-Hydroxyethyl Methacrylate	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	49 days
2-Hydroxyethyl Methacrylate	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
Methyl Methacrylate	Ingestion	Not classified for female reproduction	Rat	NOAEL 400 mg/kg/day	2 generation
Methyl Methacrylate	Ingestion	Not classified for male reproduction	Rat	NOAEL 400 mg/kg/day	2 generation
Methyl Methacrylate	Ingestion	Not classified for development	Rabbit	NOAEL 450 mg/kg/day	during gestation
Methyl Methacrylate	Inhalation	Not classified for development	Rat	NOAEL 8.3 mg/l	during organogenesis
Styrene Monomer	Ingestion	Not classified for female reproduction	Rat	NOAEL 21 mg/kg/day	3 generation
Styrene Monomer	Inhalation	Not classified for female reproduction	Rat	NOAEL 2.1 mg/l	2 generation
Styrene Monomer	Inhalation	Not classified for male reproduction	Rat	NOAEL 2.1 mg/l	2 generation
Styrene Monomer	Ingestion	Not classified for male reproduction	Rat	NOAEL 400 mg/kg/day	60 days
Styrene Monomer	Ingestion	Not classified for development	Rat	NOAEL 400 mg/kg/day	during gestation
Styrene Monomer	Inhalation	Not classified for development	Multiple animal species	NOAEL 2.1 mg/l	during gestation
Maleic Anhydride	Ingestion	Not classified for female reproduction	Rat	NOAEL 55 mg/kg/day	2 generation
Maleic Anhydride	Ingestion	Not classified for male reproduction	Rat	NOAEL 55 mg/kg/day	2 generation
Maleic Anhydride	Ingestion	Not classified for development	Rat	NOAEL 140 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
Impact Modifier	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Succinic Anhydride	Inhalation	respiratory irritation	May cause respiratory irritation	similar health hazards	NOAEL Not available	
Tetrahydrofurfuryl Alcohol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Methyl Methacrylate	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	occupational exposure
Styrene Monomer	Inhalation	auditory system	Causes damage to organs	Multiple animal species	LOAEL 4.3 mg/l	not available
Styrene Monomer	Inhalation	liver	Causes damage to organs	Mouse	LOAEL 2.1 mg/l	not available
Styrene Monomer	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	occupational exposure
Styrene Monomer	Inhalation	respiratory irritation	May cause respiratory irritation	Human and animal	NOAEL Not available	
Styrene Monomer	Inhalation	endocrine system	Not classified	Rat	NOAEL Not available	not available
Styrene Monomer	Inhalation	kidney and/or bladder	Not classified	Multiple animal	NOAEL 2.1 mg/l	not available

				species		
Maleic Anhydride	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Tetrahydrofurfuryl Methacrylate	Ingestion	endocrine system	Not classified	Rat	NOAEL 300 mg/kg/day	29 days
Tetrahydrofurfuryl Methacrylate	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 300 mg/kg/day	29 days
Tetrahydrofurfuryl Methacrylate	Ingestion	immune system	Not classified	Rat	NOAEL 300 mg/kg/day	29 days
Tetrahydrofurfuryl Methacrylate	Ingestion	heart	Not classified	Rat	NOAEL 300 mg/kg/day	29 days
Tetrahydrofurfuryl Methacrylate	Ingestion	liver	Not classified	Rat	NOAEL 300 mg/kg/day	29 days
Tetrahydrofurfuryl Methacrylate	Ingestion	nervous system	Not classified	Rat	NOAEL 300 mg/kg/day	29 days
Tetrahydrofurfuryl Methacrylate	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 300 mg/kg/day	29 days
Tetrahydrofurfuryl Methacrylate	Ingestion	respiratory system	Not classified	Rat	NOAEL 300 mg/kg/day	29 days
2-Ethylhexyl Methacrylate	Ingestion	heart	Not classified	Rat	NOAEL 360 mg/kg/day	90 days
2-Ethylhexyl Methacrylate	Ingestion	endocrine system	Not classified	Rat	NOAEL 360 mg/kg/day	90 days
2-Ethylhexyl Methacrylate	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 360 mg/kg/day	90 days
2-Ethylhexyl Methacrylate	Ingestion	liver	Not classified	Rat	NOAEL 360 mg/kg/day	90 days
2-Ethylhexyl Methacrylate	Ingestion	immune system	Not classified	Rat	NOAEL 360 mg/kg/day	90 days
2-Ethylhexyl Methacrylate	Ingestion	nervous system	Not classified	Rat	NOAEL 360 mg/kg/day	90 days
2-Ethylhexyl Methacrylate	Ingestion	eyes	Not classified	Rat	NOAEL 360 mg/kg/day	90 days
2-Ethylhexyl Methacrylate	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 360 mg/kg/day	90 days
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 500 mg/kg/day	90 days
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Ingestion	nervous system	Not classified	Rat	NOAEL 500 mg/kg/day	90 days
Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester	Ingestion	eyes	Not classified	Rat	NOAEL 500 mg/kg/day	90 days
Succinic Anhydride	Ingestion	heart	Not classified	Mouse	NOAEL 300 mg/kg/day	13 weeks
Succinic Anhydride	Ingestion	skin	Not classified	Mouse	NOAEL 300 mg/kg/day	13 weeks
Succinic Anhydride	Ingestion	endocrine system	Not classified	Mouse	NOAEL 300 mg/kg/day	13 weeks
Succinic Anhydride	Ingestion	bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 300 mg/kg/day	13 weeks
Succinic Anhydride	Ingestion	hematopoietic system	Not classified	Mouse	NOAEL 300 mg/kg/day	13 weeks
Succinic Anhydride	Ingestion	liver	Not classified	Mouse	NOAEL 300 mg/kg/day	13 weeks
Succinic Anhydride	Ingestion	immune system	Not classified	Mouse	NOAEL 300 mg/kg/day	13 weeks
Succinic Anhydride	Ingestion	nervous system	Not classified	Mouse	NOAEL 300 mg/kg/day	13 weeks
Succinic Anhydride	Ingestion	kidney and/or bladder	Not classified	Mouse	NOAEL 300 mg/kg/day	13 weeks

Succinic Anhydride	Ingestion	respiratory system	Not classified	Mouse	NOAEL 300 mg/kg/day	13 weeks
Tetrahydrofurfuryl Alcohol	Inhalation	nervous system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.2 mg/l	90 days
Tetrahydrofurfuryl Alcohol	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 0.6 mg/l	90 days
Tetrahydrofurfuryl Alcohol	Inhalation	eyes	Not classified	Rat	NOAEL 2.1 mg/l	90 days
Tetrahydrofurfuryl Alcohol	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 69 mg/kg/day	91 days
Tetrahydrofurfuryl Alcohol	Ingestion	immune system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 150 mg/kg/day	28 days
Tetrahydrofurfuryl Alcohol	Ingestion	endocrine system	Not classified	Rat	NOAEL 600 mg/kg/day	28 days
Tetrahydrofurfuryl Alcohol	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 600 mg/kg/day	28 days
Tetrahydrofurfuryl Alcohol	Ingestion	liver	Not classified	Rat	NOAEL 781 mg/kg/day	91 days
Tetrahydrofurfuryl Alcohol	Ingestion	eyes	Not classified	Rat	NOAEL 781 mg/kg/day	91 days
Tetrahydrofurfuryl Alcohol	Ingestion	heart	Not classified	Rat	NOAEL 600 mg/kg/day	28 days
Tetrahydrofurfuryl Alcohol	Ingestion	nervous system	Not classified	Rat	NOAEL 600 mg/kg/day	28 days
Methyl Methacrylate	Dermal	peripheral nervous system	Not classified	Human	NOAEL Not available	occupational exposure
Methyl Methacrylate	Inhalation	olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Methyl Methacrylate	Inhalation	kidney and/or bladder	Not classified	Multiple animal species	NOAEL Not available	14 weeks
Methyl Methacrylate	Inhalation	liver	Not classified	Mouse	NOAEL 12.3 mg/l	14 weeks
Methyl Methacrylate	Inhalation	respiratory system	Not classified	Human	NOAEL Not available	occupational exposure
Methyl Methacrylate	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 90.3 mg/kg/day	2 years
Methyl Methacrylate	Ingestion	heart	Not classified	Rat	NOAEL 90.3 mg/kg/day	2 years
Methyl Methacrylate	Ingestion	skin	Not classified	Rat	NOAEL 90.3 mg/kg/day	2 years
Methyl Methacrylate	Ingestion	endocrine system	Not classified	Rat	NOAEL 90.3 mg/kg/day	2 years
Methyl Methacrylate	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 90.3 mg/kg/day	2 years
Methyl Methacrylate	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 90.3 mg/kg/day	2 years
Methyl Methacrylate	Ingestion	liver	Not classified	Rat	NOAEL 90.3 mg/kg/day	2 years
Methyl Methacrylate	Ingestion	muscles	Not classified	Rat	NOAEL 90.3 mg/kg/day	2 years
Methyl Methacrylate	Ingestion	nervous system	Not classified	Rat	NOAEL 90.3 mg/kg/day	2 years
Methyl Methacrylate	Ingestion	respiratory system	Not classified	Rat	NOAEL 90.3 mg/kg/day	2 years
Styrene Monomer	Inhalation	auditory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL not available	occupational exposure
Styrene Monomer	Inhalation	eyes	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Styrene Monomer	Inhalation	liver	May cause damage to organs though prolonged or repeated exposure	Mouse	LOAEL 0.85 mg/l	13 weeks
Styrene Monomer	Inhalation	nervous system	Some positive data exist, but the data are not sufficient for	Multiple animal	LOAEL 1.1 mg/l	not available

			classification	species		
Styrene Monomer	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 0.85 mg/l	7 days
Styrene Monomer	Inhalation	endocrine system	Not classified	Rat	NOAEL 0.6 mg/l	10 days
Styrene Monomer	Inhalation	respiratory system	Not classified	Multiple animal species	LOAEL 0.09 mg/l	not available
Styrene Monomer	Inhalation	heart	Not classified	Multiple animal species	NOAEL 4.3 mg/l	2 years
Styrene Monomer	Inhalation	gastrointestinal tract	Not classified	Multiple animal species	NOAEL 4.3 mg/l	2 years
Styrene Monomer	Inhalation	bone, teeth, nails, and/or hair	Not classified	Multiple animal species	NOAEL 4.3 mg/l	2 years
Styrene Monomer	Inhalation	muscles	Not classified	Multiple animal species	NOAEL 4.3 mg/l	2 years
Styrene Monomer	Inhalation	kidney and/or bladder	Not classified	Multiple animal species	NOAEL 4.3 mg/l	2 years
Styrene Monomer	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 500 mg/kg/day	8 weeks
Styrene Monomer	Ingestion	immune system	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL Not available	not available
Styrene Monomer	Ingestion	liver	Not classified	Rat	NOAEL 677 mg/kg/day	6 months
Styrene Monomer	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 677 mg/kg/day	6 months
Styrene Monomer	Ingestion	hematopoietic system	Not classified	Dog	NOAEL 600 mg/kg/day	470 days
Styrene Monomer	Ingestion	heart	Not classified	Rat	NOAEL 35 mg/kg/day	105 weeks
Styrene Monomer	Ingestion	respiratory system	Not classified	Rat	NOAEL 35 mg/kg/day	105 weeks
Maleic Anhydride	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.0011 mg/l	6 months
Maleic Anhydride	Inhalation	endocrine system	Not classified	Rat	NOAEL 0.0098 mg/l	6 months
Maleic Anhydride	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 0.0098 mg/l	6 months
Maleic Anhydride	Inhalation	nervous system	Not classified	Rat	NOAEL 0.0098 mg/l	6 months
Maleic Anhydride	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 0.0098 mg/l	6 months
Maleic Anhydride	Inhalation	heart	Not classified	Rat	NOAEL 0.0098 mg/l	6 months
Maleic Anhydride	Inhalation	liver	Not classified	Rat	NOAEL 0.0098 mg/l	6 months
Maleic Anhydride	Inhalation	eyes	Not classified	Rat	NOAEL 0.0098 mg/l	6 months
Maleic Anhydride	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 55 mg/kg/day	80 days
Maleic Anhydride	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 250 mg/kg/day	183 days
Maleic Anhydride	Ingestion	heart	Not classified	Rat	NOAEL 600 mg/kg/day	183 days
Maleic Anhydride	Ingestion	nervous system	Not classified	Rat	NOAEL 600 mg/kg/day	183 days
Maleic Anhydride	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 150 mg/kg/day	80 days

Maleic Anhydride	Ingestion	hematopoietic system	Not classified	Dog	NOAEL 60 mg/kg/day	90 days
Maleic Anhydride	Ingestion	skin	Not classified	Rat	NOAEL 150 mg/kg/day	80 days
Maleic Anhydride	Ingestion	endocrine system	Not classified	Rat	NOAEL 150 mg/kg/day	80 days
Maleic Anhydride	Ingestion	immune system	Not classified	Rat	NOAEL 150 mg/kg/day	80 days
Maleic Anhydride	Ingestion	eyes	Not classified	Rat	NOAEL 150 mg/kg/day	80 days
Maleic Anhydride	Ingestion	respiratory system	Not classified	Rat	NOAEL 150 mg/kg/day	80 days

Aspiration Hazard

Name	Value
Styrene Monomer	Aspiration hazard

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

SECTION 12: Ecological information

Ecotoxicological information

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

Chemical fate information

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

SECTION 13: Disposal considerations

13.1. Disposal methods

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

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. 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

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

EPCRA 311/312 Hazard Classifications:

Physical Hazards
Not Applicable.

Health Hazards
Carcinogenicity
Reproductive toxicity
Respiratory or Skin Sensitization
Serious eye damage or eye irritation

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

Ingredient	C.A.S. No	% by Wt
Styrene Monomer	100-42-5	<= 0.2

15.2. State Regulations
Contact 3M for more information.

15.3. Chemical Inventories
The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

Contact 3M for more information.

15.4. International Regulations
Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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.

Document Group:	28-2521-4	**Version Number:**	7.06
Issue Date:	09/27/26	**Supersedes Date:**	11/25/24

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