Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier
3M™ Scotch-Weld™ Structural Adhesive Film AF 501

1.2. Recommended use and restrictions on use

Recommended use
Adhesive Film

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Automotive and Aerospace Solutions 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
Skin Sensitizer: Category 1.
Specific Target Organ Toxicity (single exposure): Category 1.
Specific Target Organ Toxicity (repeated exposure): Category 1.

2.2. Label elements
Signal word
Danger

Symbols
Exclamation mark |Health Hazard |

Pictograms



Hazard Statements

May cause an allergic skin reaction.
Causes damage to organs: sensory organs.

Causes damage to organs through prolonged or repeated exposure: nervous system.
May cause damage to organs through prolonged or repeated exposure: sensory organs.

Precautionary statements

Prevention:
Do not breathe vapors.
Wash exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves.

Response:
IF ON SKIN: Wash with plenty of soap and water.
IF exposed or concerned: Call a POISON CENTER or doctor.
Get medical attention if you feel unwell.
If skin irritation or rash occurs: Get medical attention.
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.

16% of the mixture consists of ingredients of unknown acute oral toxicity.
16% of the mixture consists of ingredients of unknown acute dermal toxicity.
16% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Epoxy Resin	25068-38-6	24 - 65
PHENOL-FORMALDEHYDE POLYMER GLYCIDYL ETHER	28064-14-4	8 - 36
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	25036-25-3	2 - 20
Butadiene Acrylic Copolymer	Trade Secret*	2 - 20
Phenol, 2-[(4-hydroxyphenyl)methyl]-	2467-03-0	<= 3.8
4,4'-METHYLENEDIPHENYLENE BIS(DIMETHYLUREA)	10097-09-3	< 3
Bis(hydroxyphenyl)methane	620-92-8	<= 3
Heterocyclic Organic Compound	Trade Secret*	< 2.5
Xylene	1330-20-7	0.1 - 1.5 Trade Secret *
Phenol, 2,'-methylenebis-	2467-02-9	<= 1.2
Methyl Ethyl Ketone	78-93-3	0.1 - 1 Trade Secret *
1,3-BUTADIENE	106-99-0	< 0.1
EPICHLOROHYDRIN	106-89-8	< 0.1

*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 skin reaction (redness, swelling, blistering, and itching). Target organ effects. See Section 11 for additional details. Target organ effects following prolonged or repeated exposure. See Section 11 for additional details.

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 Chloride	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. 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.

6.3. Methods and material for containment and cleaning up
Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Do not 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.

7.2. Conditions for safe storage including any incompatibilities
Store away from acids. Store away from strong bases. Store away from amines.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
EPICHLOROHYDRIN	106-89-8	ACGIH	TWA:0.1 ppm	A2: Suspected human carcin., SKIN; Dermal sensitizer
EPICHLOROHYDRIN	106-89-8	OSHA	TWA:19 mg/m3(5 ppm)	SKIN
1,3-BUTADIENE	106-99-0	ACGIH	TWA:2 ppm	A2: Suspected human carcin.
1,3-BUTADIENE	106-99-0	OSHA	TWA:1 ppm;STEL:5 ppm	29 CFR 1910.1051
Xylene	1330-20-7	ACGIH	TWA:20 ppm	A4: Not class. as human carcin
Xylene	1330-20-7	OSHA	TWA:435 mg/m3(100 ppm)	
Methyl Ethyl Ketone	78-93-3	ACGIH	TWA:75 ppm;STEL:150 ppm	Danger of cutaneous absorption
Methyl Ethyl Ketone	78-93-3	OSHA	TWA:590 mg/m3(200 ppm)	

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:
Safety Glasses with side shields

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
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	Solid
Specific Physical Form:	Film
Color	Red
Odor	Methyl Ethyl Ketone
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	170 ºC
Boiling point/Initial boiling point/Boiling range	*Not Applicable*
Flash Point	No flash point
Evaporation rate	*No Data Available*
Flammability	Not Applicable
Flammable Limits(LEL)	*Not Applicable*
Flammable Limits(UEL)	*Not Applicable*
Vapor Pressure	*Not Applicable*
Relative Vapor Density	*Not Applicable*
Density	1.2 g/cm3

Relative Density	*No Data Available*
Water solubility	Nil
Solubility- non-water	Nil
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*Not Applicable*
Decomposition temperature	*No Data Available*
Kinematic Viscosity	*No Data Available*
Volatile Organic Compounds	*No Data Available*
Percent volatile	*Not Applicable*
VOC Less H2O & Exempt Solvents	*No Data Available*
Molecular weight	*No Data Available*

Particle Characteristics	*Not Applicable*

SECTION 10: Stability and reactivity

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

10.2. Chemical stability
Stable.

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

10.4. Conditions to avoid
Not determined

10.5. Incompatible materials
Strong acids
Strong bases
Amines

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. May cause additional health effects (see below).

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

Ingestion:
Physical Blockage: Signs/symptoms may include cramping, abdominal pain, and constipation. May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:
Auditory Effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears.

Prolonged or repeated exposure may cause target organ effects:
Auditory Effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears.
Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate.

Carcinogenicity:

Ingredient	CAS No.	Class Description	Regulation
1,3-Butadiene	106-99-0	Known To Be Human Carcinogen.	National Toxicology Program Carcinogens
1,3-Butadiene	106-99-0	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
1,3-BUTADIENE	106-99-0	Cancer hazard	OSHA Carcinogens
Epichlorohydrin	106-89-8	Grp. 2A: Probable human carc.	International Agency for Research on Cancer
Epichlorohydrin	106-89-8	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 >5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE >50 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Epoxy Resin	Dermal	Rat	LD50 > 1,600 mg/kg
Epoxy Resin	Ingestion	Rat	LD50 > 1,000 mg/kg
PHENOL-FORMALDEHYDE POLYMER GLYCIDYL ETHER	Dermal	Rabbit	LD50 > 6,000 mg/kg
PHENOL-FORMALDEHYDE POLYMER GLYCIDYL ETHER	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 1.7 mg/l
PHENOL-FORMALDEHYDE POLYMER GLYCIDYL ETHER	Ingestion	Rat	LD50 > 4,000 mg/kg
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Dermal	Rat	LD50 > 1,600 mg/kg
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Ingestion	Rat	LD50 > 1,000 mg/kg
Phenol, 2-[(4-hydroxyphenyl)methyl]-	Dermal	Professional judgement	LD50 estimated to be 2,000 - 5,000 mg/kg
Phenol, 2-[(4-hydroxyphenyl)methyl]-	Ingestion	Rat	LD50 > 2,000 mg/kg

Bis(hydroxyphenyl)methane	Dermal	Professional judgement	LD50 estimated to be 2,000 - 5,000 mg/kg
Bis(hydroxyphenyl)methane	Ingestion	Rat	LD50 > 2,000 mg/kg
4,4'-METHYLENEDIPHENYLENE BIS(DIMETHYLUREA)	Ingestion	Rat	LD50 > 5,000 mg/kg
4,4'-METHYLENEDIPHENYLENE BIS(DIMETHYLUREA)	Dermal	similar health hazards	LD50 estimated to be > 5,000 mg/kg
Heterocyclic Organic Compound	Ingestion	Rat	LD50 > 5,000 mg/kg
Heterocyclic Organic Compound	Dermal	similar health hazards	LD50 estimated to be > 5,000 mg/kg
Xylene	Dermal	Rabbit	LD50 > 4,200 mg/kg
Xylene	Inhalation-Vapor (4 hours)	Rat	LC50 29 mg/l
Xylene	Ingestion	Rat	LD50 3,523 mg/kg
Methyl Ethyl Ketone	Dermal	Rabbit	LD50 > 8,050 mg/kg
Methyl Ethyl Ketone	Inhalation-Vapor (4 hours)	Rat	LC50 34.5 mg/l
Methyl Ethyl Ketone	Ingestion	Rat	LD50 2,737 mg/kg
Phenol, 2,'-methylenebis-	Dermal	Professional judgement	LD50 estimated to be 2,000 - 5,000 mg/kg
Phenol, 2,'-methylenebis-	Ingestion	Rat	LD50 > 2,000 mg/kg
1,3-BUTADIENE	Inhalation-Gas (4 hours)	Rat	LC50 129,000 ppm
1,3-BUTADIENE	Ingestion	Rat	LD50 5,480 mg/kg
1,3-BUTADIENE	Dermal	similar health hazards	LD50 estimated to be > 5,000 mg/kg
EPICHLOROHYDRIN	Dermal	Rabbit	LD50 755 mg/kg
EPICHLOROHYDRIN	Inhalation-Vapor (4 hours)	Rat	LC50 1.7 mg/l
EPICHLOROHYDRIN	Ingestion	Rat	LD50 260 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Epoxy Resin	Rabbit	Mild irritant
PHENOL-FORMALDEHYDE POLYMER GLYCIDYL ETHER	Rabbit	Minimal irritation
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Rabbit	No significant irritation
Phenol, 2-[(4-hydroxyphenyl)methyl]-	Rabbit	No significant irritation
Bis(hydroxyphenyl)methane	Rabbit	No significant irritation
4,4'-METHYLENEDIPHENYLENE BIS(DIMETHYLUREA)	Rabbit	No significant irritation
Heterocyclic Organic Compound	Rabbit	No significant irritation
Xylene	Rabbit	Mild irritant
Methyl Ethyl Ketone	Rabbit	Minimal irritation
Phenol, 2,'-methylenebis-	Rabbit	No significant irritation
EPICHLOROHYDRIN	Human and animal	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Epoxy Resin	Rabbit	Moderate irritant
PHENOL-FORMALDEHYDE POLYMER GLYCIDYL ETHER	Rabbit	Mild irritant

BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Rabbit	Mild irritant
Phenol, 2-[(4-hydroxyphenyl)methyl]-	Rabbit	Corrosive
Bis(hydroxyphenyl)methane	Rabbit	Corrosive
4,4'-METHYLENEDIPHENYLENE BIS(DIMETHYLUREA)	Rabbit	No significant irritation
Xylene	Rabbit	Mild irritant
Methyl Ethyl Ketone	Rabbit	Severe irritant
Phenol, 2,'-methylenebis-	Rabbit	Corrosive
1,3-BUTADIENE	Human	Mild irritant
EPICHLOROHYDRIN	Rabbit	Corrosive

Skin Sensitization

Name	Species	Value
Epoxy Resin	Human and animal	Sensitizing
PHENOL-FORMALDEHYDE POLYMER GLYCIDYL ETHER	Human and animal	Sensitizing
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Guinea pig	Not classified
Phenol, 2-[(4-hydroxyphenyl)methyl]-	Mouse	Sensitizing
Bis(hydroxyphenyl)methane	Mouse	Sensitizing
4,4'-METHYLENEDIPHENYLENE BIS(DIMETHYLUREA)	Guinea pig	Not classified
Heterocyclic Organic Compound	Human	Some positive data exist, but the data are not sufficient for classification
Phenol, 2,'-methylenebis-	Mouse	Sensitizing
EPICHLOROHYDRIN	Human and animal	Sensitizing

Respiratory Sensitization

Name	Species	Value
Epoxy Resin	Human	Not classified
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Human	Not classified

Germ Cell Mutagenicity

Name	Route	Value
Epoxy Resin	In vivo	Not mutagenic
Epoxy Resin	In Vitro	Some positive data exist, but the data are not sufficient for classification
PHENOL-FORMALDEHYDE POLYMER GLYCIDYL ETHER	In Vitro	Some positive data exist, but the data are not sufficient for classification
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	In vivo	Not mutagenic
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	In Vitro	Some positive data exist, but the data are not sufficient for classification
Phenol, 2-[(4-hydroxyphenyl)methyl]-	In Vitro	Some positive data exist, but the data are not sufficient for classification
Bis(hydroxyphenyl)methane	In Vitro	Some positive data exist, but the data are not sufficient for classification
4,4'-METHYLENEDIPHENYLENE BIS(DIMETHYLUREA)	In Vitro	Not mutagenic
Xylene	In Vitro	Not mutagenic
Xylene	In vivo	Not mutagenic
Methyl Ethyl Ketone	In Vitro	Not mutagenic
Phenol, 2,'-methylenebis-	In Vitro	Some positive data exist, but the data are not sufficient for classification
1,3-BUTADIENE	In Vitro	Some positive data exist, but the data are not sufficient for classification
1,3-BUTADIENE	In vivo	Mutagenic
EPICHLOROHYDRIN	In Vitro	Some positive data exist, but the data are not sufficient for classification
EPICHLOROHYDRIN	In vivo	Mutagenic

Carcinogenicity

Name	Route	Species	Value
Epoxy Resin	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Xylene	Dermal	Rat	Not carcinogenic
Xylene	Ingestion	Multiple animal species	Not carcinogenic
Xylene	Inhalation	Human	Some positive data exist, but the data are not sufficient for classification
Methyl Ethyl Ketone	Inhalation	Human	Not carcinogenic
1,3-BUTADIENE	Inhalation	Human and animal	Carcinogenic
EPICHLOROHYDRIN	Dermal	Mouse	Not carcinogenic
EPICHLOROHYDRIN	Ingestion	Rat	Carcinogenic
EPICHLOROHYDRIN	Inhalation	Rat	Carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Epoxy Resin	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
Epoxy Resin	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
Epoxy Resin	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
Epoxy Resin	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
Xylene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure
Xylene	Ingestion	Not classified for development	Mouse	NOAEL Not available	during organogenesis
Xylene	Inhalation	Not classified for development	Multiple animal species	NOAEL Not available	during gestation
Methyl Ethyl Ketone	Inhalation	Not classified for development	Rat	LOAEL 8.8 mg/l	during gestation
1,3-BUTADIENE	Inhalation	Not classified for development	Mouse	NOAEL 40 ppm	during gestation
1,3-BUTADIENE	Inhalation	Toxic to female reproduction	Mouse	LOAEL 6.25 ppm	2 years
1,3-BUTADIENE	Inhalation	Toxic to male reproduction	Mouse	NOAEL 200 ppm	2 years
EPICHLOROHYDRIN	Inhalation	Not classified for female reproduction	Rat	NOAEL 0.2 mg/l	10 weeks
EPICHLOROHYDRIN	Inhalation	Not classified for development	Multiple animal species	NOAEL 0.09 mg/l	during organogenesis

EPICHLOROHYDRIN	Ingestion	Not classified for development	Multiple animal species	NOAEL 160 mg/kg/day	during gestation
EPICHLOROHYDRIN	Ingestion	Toxic to male reproduction	Rat	LOAEL 6.25 mg/kg/day	23 days
EPICHLOROHYDRIN	Inhalation	Toxic to male reproduction	Rat	NOAEL 0.02 mg/l	10 weeks

Lactation

Name	Route	Species	Value
Xylene	Ingestion	Mouse	Not classified for effects on or via lactation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Epoxy Resin	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Phenol, 2-[(4-hydroxyphenyl)methyl]-	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Bis(hydroxyphenyl)methane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Xylene	Inhalation	auditory system	Causes damage to organs	Rat	LOAEL 6.3 mg/l	8 hours
Xylene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Xylene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Xylene	Inhalation	eyes	Not classified	Rat	NOAEL 3.5 mg/l	not available
Xylene	Inhalation	liver	Not classified	Multiple animal species	NOAEL Not available	
Xylene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL Not available	
Xylene	Ingestion	eyes	Not classified	Rat	NOAEL 250 mg/kg	not applicable
Methyl Ethyl Ketone	Inhalation	central nervous system depression	May cause drowsiness or dizziness	official classification	NOAEL Not available	
Methyl Ethyl Ketone	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Methyl Ethyl Ketone	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
Methyl Ethyl Ketone	Ingestion	liver	Not classified	Rat	NOAEL Not available	not applicable
Methyl Ethyl Ketone	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 1,080 mg/kg	not applicable
Phenol, 2,'-methylenebis-	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
1,3-BUTADIENE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
EPICHLOROHYDRIN	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL not	occupational

					available	exposure

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Epoxy Resin	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
Epoxy Resin	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Epoxy Resin	Ingestion	auditory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Epoxy Resin	Ingestion	heart	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Epoxy Resin	Ingestion	endocrine system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Epoxy Resin	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Epoxy Resin	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Epoxy Resin	Ingestion	eyes	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Epoxy Resin	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Ingestion	auditory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Ingestion	heart	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Ingestion	endocrine system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A COPOLYMER	Ingestion	eyes	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
BISPHENOL A DIGLYCIDYL ETHER-BISPHENOL A	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days

COPOLYMER						
Phenol, 2-[(4-hydroxyphenyl)methyl]-	Ingestion	endocrine system	Not classified	Rat	LOEL 20 mg/kg/day	28 days
Phenol, 2-[(4-hydroxyphenyl)methyl]-	Ingestion	liver	Not classified	Rat	NOEL 20 mg/kg/day	28 days
Phenol, 2-[(4-hydroxyphenyl)methyl]-	Ingestion	kidney and/or bladder	Not classified	Rat	NOEL 20 mg/kg/day	28 days
Phenol, 2-[(4-hydroxyphenyl)methyl]-	Ingestion	hematopoietic system	Not classified	Rat	NOEL 100 mg/kg/day	28 days
Phenol, 2-[(4-hydroxyphenyl)methyl]-	Ingestion	nervous system	Not classified	Rat	NOEL 100 mg/kg/day	28 days
Phenol, 2-[(4-hydroxyphenyl)methyl]-	Ingestion	heart	Not classified	Rat	NOEL 500 mg/kg/day	28 days
Phenol, 2-[(4-hydroxyphenyl)methyl]-	Ingestion	gastrointestinal tract	Not classified	Rat	NOEL 500 mg/kg/day	28 days
Phenol, 2-[(4-hydroxyphenyl)methyl]-	Ingestion	immune system	Not classified	Rat	NOEL 500 mg/kg/day	28 days
Bis(hydroxyphenyl)methane	Ingestion	endocrine system	Not classified	Rat	LOEL 20 mg/kg/day	28 days
Bis(hydroxyphenyl)methane	Ingestion	liver	Not classified	Rat	NOEL 20 mg/kg/day	28 days
Bis(hydroxyphenyl)methane	Ingestion	kidney and/or bladder	Not classified	Rat	NOEL 20 mg/kg/day	28 days
Bis(hydroxyphenyl)methane	Ingestion	hematopoietic system	Not classified	Rat	NOEL 100 mg/kg/day	28 days
Bis(hydroxyphenyl)methane	Ingestion	nervous system	Not classified	Rat	NOEL 100 mg/kg/day	28 days
Bis(hydroxyphenyl)methane	Ingestion	heart	Not classified	Rat	NOEL 500 mg/kg/day	28 days
Bis(hydroxyphenyl)methane	Ingestion	gastrointestinal tract	Not classified	Rat	NOEL 500 mg/kg/day	28 days
Bis(hydroxyphenyl)methane	Ingestion	immune system	Not classified	Rat	NOEL 500 mg/kg/day	28 days
Xylene	Inhalation	nervous system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.4 mg/l	4 weeks
Xylene	Inhalation	auditory system	May cause damage to organs though prolonged or repeated exposure	Rat	LOAEL 7.8 mg/l	5 days
Xylene	Inhalation	liver	Not classified	Multiple animal species	NOAEL Not available	
Xylene	Inhalation	heart	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Inhalation	endocrine system	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Inhalation	gastrointestinal tract	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Inhalation	hematopoietic system	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Inhalation	muscles	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Inhalation	kidney and/or bladder	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Inhalation	respiratory system	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Ingestion	auditory system	Not classified	Rat	NOAEL 900 mg/kg/day	2 weeks
Xylene	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,500 mg/kg/day	90 days

Xylene	Ingestion	liver	Not classified	Multiple animal species	NOAEL Not available	
Xylene	Ingestion	heart	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	skin	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	endocrine system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	hematopoietic system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	immune system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	nervous system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	respiratory system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Methyl Ethyl Ketone	Dermal	nervous system	Not classified	Guinea pig	NOAEL Not available	31 weeks
Methyl Ethyl Ketone	Inhalation	liver	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Inhalation	heart	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Inhalation	endocrine system	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Inhalation	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Inhalation	immune system	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Inhalation	muscles	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Ingestion	liver	Not classified	Rat	NOAEL Not available	7 days
Methyl Ethyl Ketone	Ingestion	nervous system	Not classified	Rat	NOAEL 173 mg/kg/day	90 days
Phenol, 2,'-methylenebis-	Ingestion	endocrine system	Not classified	Rat	LOEL 20 mg/kg/day	28 days
Phenol, 2,'-methylenebis-	Ingestion	liver	Not classified	Rat	NOEL 20 mg/kg/day	28 days
Phenol, 2,'-methylenebis-	Ingestion	kidney and/or bladder	Not classified	Rat	NOEL 20 mg/kg/day	28 days
Phenol, 2,'-methylenebis-	Ingestion	hematopoietic system	Not classified	Rat	NOEL 100 mg/kg/day	28 days
Phenol, 2,'-methylenebis-	Ingestion	nervous system	Not classified	Rat	NOEL 100 mg/kg/day	28 days
Phenol, 2,'-methylenebis-	Ingestion	heart	Not classified	Rat	NOEL 500 mg/kg/day	28 days
Phenol, 2,'-methylenebis-	Ingestion	gastrointestinal tract	Not classified	Rat	NOEL 500 mg/kg/day	28 days
Phenol, 2,'-methylenebis-	Ingestion	immune system	Not classified	Rat	NOEL 500 mg/kg/day	28 days

1,3-BUTADIENE	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 200 ppm	2 years
1,3-BUTADIENE	Inhalation	heart	Not classified	Mouse	NOAEL 625 ppm	2 years
1,3-BUTADIENE	Inhalation	gastrointestinal tract	Not classified	Mouse	NOAEL 625 ppm	2 years
1,3-BUTADIENE	Inhalation	immune system	Not classified	Mouse	NOAEL 625 ppm	2 years
1,3-BUTADIENE	Inhalation	respiratory system	Not classified	Mouse	NOAEL 625 ppm	2 years
1,3-BUTADIENE	Inhalation	vascular system	Not classified	Mouse	NOAEL 625 ppm	2 years
1,3-BUTADIENE	Inhalation	endocrine system	Not classified	Mouse	NOAEL 625 ppm	2 years
1,3-BUTADIENE	Inhalation	liver	Not classified	Mouse	NOAEL 625 ppm	2 years
1,3-BUTADIENE	Inhalation	nervous system	Not classified	Mouse	NOAEL 625 ppm	2 years
1,3-BUTADIENE	Inhalation	kidney and/or bladder	Not classified	Mouse	NOAEL 625 ppm	2 years
EPICHLOROHYDRIN	Inhalation	endocrine system	Not classified	Rat	NOAEL 1.9 mg/l	87 days
EPICHLOROHYDRIN	Inhalation	liver	Not classified	Rat	NOAEL 1.9 mg/l	87 days
EPICHLOROHYDRIN	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 1.9 mg/l	87 days
EPICHLOROHYDRIN	Inhalation	respiratory system	Not classified	Rat	NOAEL 0.19 mg/l	87 days
EPICHLOROHYDRIN	Inhalation	heart	Not classified	Rat	NOAEL 1.9 mg/l	87 days
EPICHLOROHYDRIN	Inhalation	skin	Not classified	Rat	NOAEL 1.9 mg/l	87 days
EPICHLOROHYDRIN	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 1.9 mg/l	87 days
EPICHLOROHYDRIN	Inhalation	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 1.9 mg/l	87 days
EPICHLOROHYDRIN	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 1.9 mg/l	87 days
EPICHLOROHYDRIN	Inhalation	immune system	Not classified	Rat	NOAEL 1.9 mg/l	87 days
EPICHLOROHYDRIN	Inhalation	nervous system	Not classified	Rat	NOAEL 1.9 mg/l	87 days
EPICHLOROHYDRIN	Inhalation	eyes	Not classified	Rat	NOAEL 1.9 mg/l	87 days
EPICHLOROHYDRIN	Inhalation	vascular system	Not classified	Rat	NOAEL 1.9 mg/l	87 days
EPICHLOROHYDRIN	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 25 mg/kg/day	90 days
EPICHLOROHYDRIN	Ingestion	liver	Not classified	Rat	NOAEL 25 mg/kg/day	90 days
EPICHLOROHYDRIN	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 25 mg/kg/day	90 days
EPICHLOROHYDRIN	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 1 mg/kg/day	90 days
EPICHLOROHYDRIN	Ingestion	heart	Not classified	Rat	NOAEL 25 mg/kg/day	90 days
EPICHLOROHYDRIN	Ingestion	endocrine system	Not classified	Rat	NOAEL 25 mg/kg/day	90 days
EPICHLOROHYDRIN	Ingestion	immune system	Not classified	Rat	NOAEL 25 mg/kg/day	90 days
EPICHLOROHYDRIN	Ingestion	nervous system	Not classified	Rat	NOAEL 25 mg/kg/day	90 days
EPICHLOROHYDRIN	Ingestion	eyes	Not classified	Rat	NOAEL 25 mg/kg/day	90 days

Aspiration Hazard

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

EPA Hazardous Waste Number (RCRA): D035 (Methyl ethyl ketone)

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
Respiratory or Skin Sensitization
Specific target organ toxicity (single or repeated exposure)

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
Xylene	1330-20-7	Trade Secret 0.1 - 1.5

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.

This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory listing requirements. 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: 2 **Flammability:** 1 **Instability:** 0 **Special Hazards:** None

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

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