Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier
3M™ Scotch-Weld™ Composite Surfacing Film AF 536 (without Copper screen)

Product Identification Numbers
70-0711-0729-9, 70-0711-0730-7, UU-0117-9970-5, UU-0118-0171-7
7100305679, 7100305680

1.2. Recommended use and restrictions on use

Recommended use
Adhesive, Industrial use

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	3M Poland 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 Corrosion/Irritation: Category 2.
Skin Sensitizer: Category 1.
Germ Cell Mutagenicity: Category 2.
Carcinogenicity: Category 2.

2.2. Label elements
Signal word
Warning

Symbols
Exclamation mark |Health Hazard |

Pictograms

Hazard Statements

Causes skin irritation.
May cause an allergic skin reaction.
Suspected of causing genetic defects.
Suspected of causing cancer.

Precautionary statements

Prevention:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing dust.
Wash exposed skin thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves and if needed, respiratory protection (see SDS Section 8).

Response:
IF ON SKIN: Wash with plenty of soap and water.
IF exposed or concerned or 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.

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

71% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Bisphenol A Diglycidyl Ether	1675-54-3	10 - 30 Trade Secret *
EPOXY RESIN 1	25068-38-6	10 - 30 Trade Secret *
Oxirane, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis-, polymer with 1,1'-methylenebis[isocyanatobenzene]	60684-77-7	10 - 30 Trade Secret *
GLASS BUBBLES	65997-17-3	5 - 15
EPOXY RESIN 2	28906-96-9	7 - 13 Trade Secret *
FIBERGLASS SCRIM	None	< 10
FLEXIBLIZER	Trade Secret*	0.1 - 10
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	25085-99-8	2.3 - 8.2

N,N,N',N'-TETRAGLYCIDYLBIS(P-AMINOPHENYL)METHANE	28768-32-3	1 - 5 Trade Secret *
Curative 1	Trade Secret*	1 - 5
Filler	Trade Secret*	1 - 5
Curative 2	Trade Secret*	0.5 - 1.5
ADIPIC DIHYDRAZIDE	1071-93-8	<= 1
Methyl Ethyl Ketone	78-93-3	<= 1
METHYL PROPYL KETONE	107-87-9	<= 1
Methyl isobutyl ketone	108-10-1	< 0.3

*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:
Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:
Rinse mouth. If you feel unwell, get medical attention.

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

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

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

SECTION 5: Fire-fighting measures

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

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

Hazardous Decomposition or By-Products

Substance	Condition
Aldehydes	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Chloride	During Combustion
Hydrogen Cyanide	During Combustion
Ammonia	During Combustion
Oxides of Nitrogen	During Combustion
Phosgene	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 handle until all safety precautions have been read and understood. 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. 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 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
METHYL PROPYL KETONE	107-87-9	ACGIH	STEL:150 ppm	
METHYL PROPYL KETONE	107-87-9	OSHA	TWA:700 mg/m3(200 ppm)	
Methyl isobutyl ketone	108-10-1	ACGIH	TWA:20 ppm;STEL:75 ppm	A3: Confirmed animal carcin.
Methyl isobutyl ketone	108-10-1	OSHA	TWA:410 mg/m3(100 ppm)	
GLASS BUBBLES	65997-17-3	Manufacturer determined	TWA(as non-fibrous, respirable)(8 hours):3 mg/m3;TWA(as non-fibrous, inhalable fraction)(8 hours):10 mg/m3	

Inert or Nuisance Dust, Respirable fraction	65997-17-3	OSHA	TWA(as total dust):50 millions of particles/cu. ft.(15 mg/m3);TWA(respirable fraction):15 millions of particles/cu. ft.(5 mg/m3)	
Particles (insoluble or poorly soluble) not otherwise specified, inhalable particles	65997-17-3	ACGIH	TWA(inhalable particulates):10 mg/m3	
Particles (insoluble or poorly soluble) not otherwise specified, respirable particles	65997-17-3	ACGIH	TWA(respirable particles):3 mg/m3	
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)	
Filler	Trade Secret	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
Provide ventilated enclosure for curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection
None required.

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	Solid
Specific Physical Form:	Film
Color	Beige
Odor	Low Epoxy
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*No Data Available*
Boiling point/Initial boiling point/Boiling range	*Not Applicable*
Flash Point	No flash point
Evaporation rate	*Not Applicable*
Flammability	Not Applicable
Flammable Limits(LEL)	*Not Applicable*
Flammable Limits(UEL)	*Not Applicable*
Vapor Pressure	*Not Applicable*
Relative Vapor Density	*Not Applicable*
Density	*Not Applicable*
Relative Density	*No Data Available*
Water solubility	Nil
Solubility- non-water	*Not Applicable*
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	*Not Applicable*
Percent volatile	*No Data Available*
VOC Less H2O & Exempt Solvents	*Not Applicable*
Molecular weight	*No Data Available*

Particle Characteristics	
Primary particle dia-median	2.5 - 50 nm (*Filler*)
Shape of Primary particle	Spherical (*Filler*)
Specific surface area	Coated particle properties: hydrophobic. Surface treatment/coatings: yes. (*Filler*)

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

Eye Contact:
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.

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:
Contains a chemical or chemicals which can cause cancer.

Ingredient	CAS No.	Class Description	Regulation
Methyl isobutyl ketone	108-10-1	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.

Persons previously sensitized to isocyanates may develop a cross-sensitization reaction to other isocyanates.

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	Inhalation-Dust/Mist(4 hr)		No data available; calculated ATE >12.5 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Oxirane, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis-, polymer with 1,1'-methylenebis[isocyanatobenzene]	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
Oxirane, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis-, polymer with 1,1'-methylenebis[isocyanatobenzene]	Inhalation-Dust/Mist	Professional judgement	LC50 estimated to be > 12.5 mg/l
Oxirane, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis-, polymer with 1,1'-methylenebis[isocyanatobenzene]	Ingestion	Professional judgement	LD50 estimated to be > 5,000 mg/kg
Bisphenol A Diglycidyl Ether	Dermal	Rat	LD50 > 1,600 mg/kg
Bisphenol A Diglycidyl Ether	Ingestion	Rat	LD50 > 1,000 mg/kg
EPOXY RESIN 1	Dermal	Rat	LD50 > 1,600 mg/kg
EPOXY RESIN 1	Ingestion	Rat	LD50 > 1,000 mg/kg
GLASS BUBBLES	Dermal		LD50 estimated to be > 5,000 mg/kg
GLASS BUBBLES	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
EPOXY RESIN 2	Dermal	Rat	LD50 > 2,000 mg/kg
EPOXY RESIN 2	Ingestion	Rat	LD50 > 2,000 mg/kg
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Dermal	Rat	LD50 > 1,600 mg/kg
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Ingestion	Rat	LD50 > 1,000 mg/kg
FLEXIBLIZER	Dermal	Rabbit	LD50 > 5,000 mg/kg
FLEXIBLIZER	Ingestion	Rat	LD50 > 5,000 mg/kg
N,N,N',N'-TETRAGLYCIDYLBIS(P-AMINOPHENYL)METHANE	Dermal	Rabbit	LD50 > 3,000 mg/kg
N,N,N',N'-TETRAGLYCIDYLBIS(P-AMINOPHENYL)METHANE	Ingestion	Rat	LD50 > 5,000 mg/kg
Curative 1	Dermal	Rabbit	LD50 > 10,000 mg/kg
Curative 1	Ingestion	Rat	LD50 > 30,000 mg/kg
Filler	Dermal	Rabbit	LD50 > 5,000 mg/kg
Filler	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Filler	Ingestion	Rat	LD50 > 5,110 mg/kg
METHYL PROPYL KETONE	Inhalation-Vapor (4 hours)	Rat	LC50 > 25.5 mg/l
METHYL PROPYL KETONE	Ingestion	Rat	LD50 1,600 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
Curative 2	Dermal	Rat	LD50 > 2,000 mg/kg
Curative 2	Ingestion	Rat	LD50 > 2,000 mg/kg
ADIPIC DIHYDRAZIDE	Ingestion	Mouse	LD50 > 5,000 mg/kg

Methyl isobutyl ketone	Dermal	Rabbit	LD50 > 16,000 mg/kg
Methyl isobutyl ketone	Inhalation-Vapor (4 hours)	Rat	LC50 11 mg/l
Methyl isobutyl ketone	Ingestion	Rat	LD50 3,038 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Oxirane, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis-, polymer with 1,1'-methylenebis[isocyanatobenzene]	Professional judgement	Irritant
Bisphenol A Diglycidyl Ether	Rabbit	Mild irritant
EPOXY RESIN 1	Rabbit	Mild irritant
GLASS BUBBLES	Professional judgement	No significant irritation
EPOXY RESIN 2	Professional judgement	Irritant
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Rabbit	Mild irritant
FLEXIBLIZER	Professional judgement	Minimal irritation
N,N,N',N'-TETRAGLYCIDYLBIS(P-AMINOPHENYL)METHANE	Rabbit	No significant irritation
Curative 1	Human and animal	Minimal irritation
Filler	Rabbit	No significant irritation
METHYL PROPYL KETONE	Guinea pig	Minimal irritation
Methyl Ethyl Ketone	Rabbit	Minimal irritation
Curative 2	Rabbit	No significant irritation
ADIPIC DIHYDRAZIDE	Rabbit	No significant irritation
Methyl isobutyl ketone	Rabbit	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
Oxirane, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis-, polymer with 1,1'-methylenebis[isocyanatobenzene]	Professional judgement	Severe irritant
Bisphenol A Diglycidyl Ether	Rabbit	Moderate irritant
EPOXY RESIN 1	Rabbit	Moderate irritant
GLASS BUBBLES	Professional judgement	No significant irritation
EPOXY RESIN 2	Professional judgement	Severe irritant
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Rabbit	Moderate irritant
FLEXIBLIZER	Professional judgement	Mild irritant
N,N,N',N'-TETRAGLYCIDYLBIS(P-AMINOPHENYL)METHANE	Rabbit	Mild irritant
Curative 1	Professio	Mild irritant

	nal judgeme nt	
Filler	Rabbit	No significant irritation
METHYL PROPYL KETONE	Rabbit	Moderate irritant
Methyl Ethyl Ketone	Rabbit	Severe irritant
Curative 2	Rabbit	No significant irritation
Methyl isobutyl ketone	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
Oxirane, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis-, polymer with 1,1'-methylenebis[isocyanatobenzene]	Professio nal judgeme nt	Sensitizing
Bisphenol A Diglycidyl Ether	Human and animal	Sensitizing
EPOXY RESIN 1	Human and animal	Sensitizing
EPOXY RESIN 2	Professio nal judgeme nt	Sensitizing
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Human and animal	Sensitizing
N,N,N',N'-TETRAGLYCIDYLBIS(P-AMINOPHENYL)METHANE	Human and animal	Sensitizing
Curative 1	Guinea pig	Not classified
Filler	Human and animal	Not classified
ADIPIC DIHYDRAZIDE	Guinea pig	Sensitizing
Methyl isobutyl ketone	Guinea pig	Not classified

Respiratory Sensitization

Name	Species	Value
Bisphenol A Diglycidyl Ether	Human	Not classified
EPOXY RESIN 1	Human	Not classified
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Human	Not classified

Germ Cell Mutagenicity

Name	Route	Value
Bisphenol A Diglycidyl Ether	In vivo	Not mutagenic
Bisphenol A Diglycidyl Ether	In Vitro	Some positive data exist, but the data are not sufficient for classification
EPOXY RESIN 1	In vivo	Not mutagenic
EPOXY RESIN 1	In Vitro	Some positive data exist, but the data are not sufficient for classification
GLASS BUBBLES	In Vitro	Some positive data exist, but the data are not sufficient for classification
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	In vivo	Not mutagenic
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	In Vitro	Some positive data exist, but the data are not sufficient for classification
N,N,N',N'-TETRAGLYCIDYLBIS(P-AMINOPHENYL)METHANE	In Vitro	Some positive data exist, but the data are not sufficient for classification

N,N,N',N'-TETRAGLYCIDYLBIS(P-AMINOPHENYL)METHANE	In vivo	Mutagenic
Curative 1	In Vitro	Not mutagenic
Filler	In Vitro	Not mutagenic
METHYL PROPYL KETONE	In Vitro	Not mutagenic
Methyl Ethyl Ketone	In Vitro	Not mutagenic
ADIPIC DIHYDRAZIDE	In vivo	Not mutagenic
Methyl isobutyl ketone	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Bisphenol A Diglycidyl Ether	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
EPOXY RESIN 1	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
GLASS BUBBLES	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Curative 1	Ingestion	Rat	Not carcinogenic
Filler	Not Specified	Mouse	Some positive data exist, but the data are not sufficient for classification
Methyl Ethyl Ketone	Inhalation	Human	Not carcinogenic
Methyl isobutyl ketone	Inhalation	Multiple animal species	Carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Bisphenol A Diglycidyl Ether	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
Bisphenol A Diglycidyl Ether	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
Bisphenol A Diglycidyl Ether	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
Bisphenol A Diglycidyl Ether	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
EPOXY RESIN 1	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
EPOXY RESIN 1	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
EPOXY RESIN 1	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
EPOXY RESIN 1	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
N,N,N',N'-TETRAGLYCIDYLBIS(P-AMINOPHENYL)METHANE	Ingestion	Not classified for development	Rat	NOAEL 90 mg/kg/day	during gestation
Curative 1	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
Curative 1	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000	44 days

				mg/kg/day	
Curative 1	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
Filler	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Filler	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Filler	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
METHYL PROPYL KETONE	Inhalation	Not classified for female reproduction	Rat	NOAEL 5 mg/l	premating & during gestation
METHYL PROPYL KETONE	Inhalation	Not classified for male reproduction	Rat	NOAEL 5 mg/l	51 days
METHYL PROPYL KETONE	Inhalation	Not classified for development	Rat	NOAEL 5 mg/l	premating & during gestation
Methyl Ethyl Ketone	Inhalation	Not classified for development	Rat	LOAEL 8.8 mg/l	during gestation
Methyl isobutyl ketone	Inhalation	Not classified for female reproduction	Multiple animal species	NOAEL 8.2 mg/l	2 generation
Methyl isobutyl ketone	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Methyl isobutyl ketone	Inhalation	Not classified for male reproduction	Multiple animal species	NOAEL 8.2 mg/l	2 generation
Methyl isobutyl ketone	Inhalation	Not classified for development	Mouse	NOAEL 12.3 mg/l	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Bisphenol A Diglycidyl Ether	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
EPOXY RESIN 1	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
EPOXY RESIN 2	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Professional judgement	NOAEL not available	
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
METHYL PROPYL KETONE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
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
Methyl isobutyl ketone	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	LOAEL 0.1 mg/l	2 hours
Methyl isobutyl ketone	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Methyl isobutyl ketone	Inhalation	vascular system	Not classified	Dog	NOAEL Not available	not available
Methyl isobutyl ketone	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Rat	LOAEL 900 mg/kg	not applicable

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Bisphenol A Diglycidyl Ether	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
Bisphenol A Diglycidyl Ether	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Bisphenol A Diglycidyl Ether	Ingestion	auditory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Bisphenol A Diglycidyl Ether	Ingestion	heart	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Bisphenol A Diglycidyl Ether	Ingestion	endocrine system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Bisphenol A Diglycidyl Ether	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Bisphenol A Diglycidyl Ether	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Bisphenol A Diglycidyl Ether	Ingestion	eyes	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Bisphenol A Diglycidyl Ether	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
EPOXY RESIN 1	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
EPOXY RESIN 1	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
EPOXY RESIN 1	Ingestion	auditory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
EPOXY RESIN 1	Ingestion	heart	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
EPOXY RESIN 1	Ingestion	endocrine system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
EPOXY RESIN 1	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
EPOXY RESIN 1	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
EPOXY RESIN 1	Ingestion	eyes	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
EPOXY RESIN 1	Ingestion	kidney and/or	Not classified	Rat	NOAEL	28 days

		bladder			1,000 mg/kg/day	
GLASS BUBBLES	Inhalation	respiratory system	Not classified	Human	NOAEL not available	occupational exposure
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Ingestion	auditory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Ingestion	heart	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Ingestion	endocrine system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Ingestion	eyes	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
2,2-Bis(p-hydroxyphenyl)propane diglycidyl ether polymer	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
N,N,N',N'-TETRAGLYCIDYLBIS(P-AMINOPHENYL)METHANE	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 50 mg/kg/day	13 weeks
N,N,N',N'-TETRAGLYCIDYLBIS(P-AMINOPHENYL)METHANE	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 200 mg/kg/day	13 weeks
N,N,N',N'-TETRAGLYCIDYLBIS(P-AMINOPHENYL)METHANE	Ingestion	liver	Not classified	Rat	NOAEL 200 mg/kg/day	13 weeks
N,N,N',N'-TETRAGLYCIDYLBIS(P-AMINOPHENYL)METHANE	Ingestion	immune system	Not classified	Rat	NOAEL 200 mg/kg/day	13 weeks
N,N,N',N'-TETRAGLYCIDYLBIS(P-AMINOPHENYL)METHANE	Ingestion	nervous system	Not classified	Rat	NOAEL 200 mg/kg/day	13 weeks
N,N,N',N'-TETRAGLYCIDYLBIS(P-AMINOPHENYL)METHANE	Ingestion	eyes	Not classified	Rat	NOAEL 200 mg/kg/day	13 weeks
N,N,N',N'-TETRAGLYCIDYLBIS(P-AMINOPHENYL)METHANE	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 200 mg/kg/day	13 weeks
Curative 1	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 6,822	13 weeks

					mg/kg/day	
Filler	Inhalation	respiratory system	Not classified	Human	NOAEL Not available	occupational exposure
Filler	Inhalation	silicosis	Not classified	Human	NOAEL Not available	occupational exposure
METHYL PROPYL KETONE	Inhalation	endocrine system	Not classified	Rat	NOAEL 5.3 mg/l	13 weeks
METHYL PROPYL KETONE	Inhalation	liver	Not classified	Rat	NOAEL 5.3 mg/l	13 weeks
METHYL PROPYL KETONE	Inhalation	respiratory system	Not classified	Rat	NOAEL 5.3 mg/l	13 weeks
METHYL PROPYL KETONE	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 5.3 mg/l	13 weeks
METHYL PROPYL KETONE	Inhalation	nervous system	Not classified	Rat	NOAEL 5.3 mg/l	13 weeks
METHYL PROPYL KETONE	Inhalation	eyes	Not classified	Rat	NOAEL 5.3 mg/l	13 weeks
METHYL PROPYL KETONE	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 5.3 mg/l	13 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
Methyl isobutyl ketone	Inhalation	liver	Not classified	Rat	NOAEL 0.41 mg/l	13 weeks
Methyl isobutyl ketone	Inhalation	heart	Not classified	Multiple animal species	NOAEL 0.8 mg/l	2 weeks
Methyl isobutyl ketone	Inhalation	kidney and/or bladder	Not classified	Multiple animal species	NOAEL 0.4 mg/l	90 days
Methyl isobutyl ketone	Inhalation	respiratory system	Not classified	Multiple animal species	NOAEL 4.1 mg/l	14 weeks
Methyl isobutyl ketone	Inhalation	endocrine system	Not classified	Multiple animal species	NOAEL 0.41 mg/l	90 days
Methyl isobutyl ketone	Inhalation	hematopoietic system	Not classified	Multiple animal species	NOAEL 0.41 mg/l	90 days
Methyl isobutyl ketone	Inhalation	nervous system	Not classified	Multiple animal species	NOAEL 0.41 mg/l	13 weeks
Methyl isobutyl ketone	Ingestion	endocrine system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Methyl isobutyl ketone	Ingestion	hematopoietic	Not classified	Rat	NOAEL	13 weeks

		system			1,000 mg/kg/day	
Methyl isobutyl ketone	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Methyl isobutyl ketone	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Methyl isobutyl ketone	Ingestion	heart	Not classified	Rat	NOAEL 1,040 mg/kg/day	120 days
Methyl isobutyl ketone	Ingestion	immune system	Not classified	Rat	NOAEL 1,040 mg/kg/day	120 days
Methyl isobutyl ketone	Ingestion	muscles	Not classified	Rat	NOAEL 1,040 mg/kg/day	120 days
Methyl isobutyl ketone	Ingestion	nervous system	Not classified	Rat	NOAEL 1,040 mg/kg/day	120 days
Methyl isobutyl ketone	Ingestion	respiratory system	Not classified	Rat	NOAEL 1,040 mg/kg/day	120 days

Aspiration Hazard

Name	Value
Methyl isobutyl ketone	Some positive data exist, but 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 waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

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
Carcinogenicity
Germ cell mutagenicity
Respiratory or Skin Sensitization
Skin Corrosion or 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
Methyl isobutyl ketone	108-10-1	< 0.3

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

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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