



Safety Data Sheet

Copyright, 2019, 3M Company.

All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that: (1) the information is copied in full with no changes unless prior written agreement is obtained from 3M, and (2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

Document Group: 11-3307-3
Issue Date: 03/05/19

Version Number: 52.08
Supersedes Date: 02/06/19

SECTION 1: Identification

1.1. Product identifier

3M™ Scotch-Weld™ Structural Adhesive Film AF 191

Product Identification Numbers

LA-T100-2677-4, 62-0199-5305-8, 62-0199-5306-6, 62-0199-5309-0, 62-2608-5301-5, 62-2608-5305-6, 62-2608-5309-8, 62-2638-5301-2, 62-2638-5309-5, 62-2707-5306-4, 62-2707-5309-8, 62-3053-2005-3, 62-3053-5305-4, 62-3053-5306-2, 62-3053-5309-6, 62-3068-3905-1, 62-3068-4105-7, 62-3068-4905-0, 62-3068-5505-7, 62-3068-6005-7, 62-3068-6006-5, 62-3068-6008-1, 62-3072-2500-3, 62-3072-3905-3, 62-3072-4505-0, 62-3072-5305-4, 62-3072-5306-2, 62-3072-5307-0, 62-3072-5309-6, 62-3072-5338-5, 62-3142-3505-2, 62-3142-3705-8, 62-3142-3906-2, 62-3142-5304-8, 62-3142-5305-5, 62-3142-5306-3, 62-3142-5307-1, 62-3142-5308-9, 62-3142-5309-7, 62-3142-6005-0, 62-3142-6038-1, 62-3151-3903-0, 62-3151-5305-6, 62-3151-5306-4, 62-3151-5309-8, 62-3167-3905-1, 62-3172-3906-9, 62-3172-5305-2, 62-3172-5309-4, 62-3329-5305-8, 62-3329-5306-6, 62-3329-5307-4, 62-3329-5308-2, 62-3329-5309-0, 62-3384-5305-3, 62-3384-5308-7, 62-3384-5309-5, 87-2500-0180-4, 87-2500-0216-6, 87-2500-0218-2, 87-3300-0005-7, 87-3300-0010-7, 87-3300-0016-4, 87-3300-0118-8, 87-3300-0159-2, 87-3300-0160-0, 87-3300-0517-1, 87-3300-0518-9, 87-3300-0519-7, 87-3300-0534-6, 87-3300-0535-3, 87-3300-0536-1, 87-3300-0537-9, 87-3300-0538-7, 87-3300-0539-5, 87-3300-0540-3, 87-3300-0541-1, 87-3300-0542-9, 87-3300-0553-6, 87-3300-0554-4, 87-3300-0555-1, 87-3300-0556-9, 87-3300-0557-7, 87-3300-0558-5, 87-3300-0559-3, 87-3300-0560-1, 87-3300-0561-9, 7010365910, 7010309712, 7010367247, 7010309739, 7100031513, 7000046379, 7010301043, 7010366083, 7010329577, 7000046411, 7010366089, 7010329578, 7000046413, 7000046414, 7000046421, 7100037736, 7000000838, 7000000839, 7010301047, 7010366108, 7100094499, 7000046412, 7010321060, 7010304392, 7010352083, 7100067277, 7100067204, 7100067203, 7100067282, 7100067916, 7100067305, 7100066651, 7100067307, 7100067308, 7100067309, 7100067330, 7100067334, 7100067409, 7100067346, 7100067421, 7100067420, 7100067097, 7100067089, 7100067088, 7100067087, 7100067086, 7010352100

1.2. Recommended use and restrictions on use

Recommended use

Structural 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

Reproductive Toxicity: Category 1B.

Reproductive Toxicity: Lactation.

Germ Cell Mutagenicity: Category 2.

Specific Target Organ Toxicity (single exposure): Category 1.

Specific Target Organ Toxicity (repeated exposure): Category 1.

2.2. Label elements

Signal word

Danger

Symbols

Health Hazard |

Pictograms



Hazard Statements

May damage fertility or the unborn child.

May cause harm to breast-fed children.

Suspected of causing genetic defects.

Causes damage to organs:

blood or blood-forming organs |

liver |

Causes damage to organs through prolonged or repeated exposure:

blood or blood-forming organs |

liver |

May cause damage to organs through prolonged or repeated exposure:

nervous system |

Precautionary Statements

Prevention:

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust/fume/gas/mist/vapors/spray.

Avoid contact during pregnancy/while nursing.

Wear protective gloves.

Do not eat, drink or smoke when using this product.

Wash thoroughly after handling.

Response:

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see Notes to Physician on this label).

Storage:

Store locked up.

Disposal:

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

Notes to Physician:

Overexposure to this product may result in methemoglobinemia. Methemoglobinemia may be clinically suspected by the presence of clinical "cyanosis" in the presence of a normal PaO₂ (as obtained by arterial blood gases). Routine pulse oximetry may be inaccurate for monitoring oxygen saturation in the presence of methemoglobinemia, and should not be used to make the diagnosis of this disorder. If the patient is symptomatic or if the methemoglobin level is >20%, specific therapy with methylene blue should be considered as part of the medical management.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Alkyl Diamine/Phenolic Epoxy Resin	Trade Secret*	40 - 60
Epoxy Resin	28768-32-3	20 - 40 Trade Secret *
Epoxy Resin	63738-22-7	10 - 20 Trade Secret *
p,p'-Diaminodiphenyl Sulfone	80-08-0	1 - 10 Trade Secret *
Methyl Ethyl Ketone	78-93-3	<= 0.625
Toluene	108-88-3	<= 0.625 Trade Secret *

*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:

Wash with soap and water. 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

See Section 11.1. Information on toxicological effects.

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

Overexposure to this product may result in methemoglobinemia. Methemoglobinemia may be clinically suspected by the presence of clinical "cyanosis" in the presence of a normal PaO₂ (as obtained by arterial blood gases). Routine pulse oximetry may be inaccurate for monitoring oxygen saturation in the presence of methemoglobinemia, and should not be used to make the diagnosis of this disorder. If the patient is symptomatic or if the methemoglobin level is >20%, specific therapy with methylene blue should be considered as part of the medical management.

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

<u>Substance</u>	<u>Condition</u>
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Oxides of Nitrogen	During Combustion
Oxides of Sulfur	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. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

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

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. Avoid contact during pregnancy/while nursing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities

Store away from heat.

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
Toluene	108-88-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcin
Toluene	108-88-3	OSHA	TWA:200 ppm;CEIL:300 ppm	
Methyl Ethyl Ketone	78-93-3	ACGIH	TWA:200 ppm;STEL:300 ppm	
Methyl Ethyl Ketone	78-93-3	OSHA	TWA:590 mg/m3(200 ppm)	
p,p'-Diaminodiphenyl Sulfone	80-08-0	Manufacturer determined	TWA:0.1 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

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

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

Respiratory protection

Wear respiratory protection if ventilation is inadequate to prevent overexposure. 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.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:

Solid

Specific Physical Form:

Film

Odor, Color, Grade:

odorless

Odor threshold

No Data Available

pH

Not Applicable

Melting point	No Data Available
Boiling Point	Not Applicable
Flash Point	No flash point
Evaporation rate	Not Applicable
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	Not Applicable
Flammable Limits(UEL)	Not Applicable
Vapor Pressure	No Data Available
Vapor Density	No Data Available
Density	1.26 g/cm3
Specific Gravity	No Data Available
Solubility in Water	Nil
Solubility- non-water	No Data Available
Partition coefficient: n-octanol/ water	Not Applicable
Autoignition temperature	Not Applicable
Decomposition temperature	No Data Available
Viscosity	Not Applicable
Molecular weight	No Data Available
Percent volatile	<= 1.3 % weight [Test Method:Estimated]

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

None known.

10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
------------------	------------------

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:

May cause additional health effects (see below).

Skin Contact:

Contact with the skin during product use is not expected to result in significant irritation. May cause additional health effects (see below).

Eye Contact:

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

Ingestion:

May be harmful if swallowed.

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.

May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:

Methemoglobinemia: Signs/symptoms may include headache, dizziness, nausea, difficulty breathing, and generalized weakness.

Liver Effects: Signs/symptoms may include loss of appetite, weight loss, fatigue, weakness, abdominal tenderness and jaundice.

Blood Effects: Signs/symptoms may include generalized weakness and fatigue, skin pallor, changes in blood clotting time, internal bleeding, and/or hemoglobinemia.

Prolonged or repeated exposure may cause target organ effects:

Liver Effects: Signs/symptoms may include loss of appetite, weight loss, fatigue, weakness, abdominal tenderness and jaundice.

Blood Effects: Signs/symptoms may include generalized weakness and fatigue, skin pallor, changes in blood clotting time, internal bleeding, and/or hemoglobinemia.

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.

Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm. Contains a chemical or chemicals which may interfere with lactation or be harmful to breastfed children.

Genotoxicity:

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

Toxicological Data

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

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE 2,000 - 5,000 mg/kg
Epoxy Resin	Ingestion	Mouse	LD50 > 5,000 mg/kg
Epoxy Resin	Dermal	Rabbit	LD50 > 3,000 mg/kg
Epoxy Resin	Ingestion	Rat	LD50 630 mg/kg
Epoxy Resin	Dermal	similar compounds	LD50 estimated to be 1,000 - 2,000 mg/kg
Epoxy Resin	Inhalation-Dust/Mist	similar compounds	LC50 estimated to be 0.5 - 1 mg/l
p,p'-Diaminodiphenyl Sulfone	Dermal	Rabbit	LD50 > 4,000 mg/kg
p,p'-Diaminodiphenyl Sulfone	Ingestion	Rat	LD50 631 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
Toluene	Dermal	Rat	LD50 12,000 mg/kg
Toluene	Inhalation-Vapor (4 hours)	Rat	LC50 30 mg/l
Toluene	Ingestion	Rat	LD50 5,550 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Epoxy Resin	Rabbit	No significant irritation
Epoxy Resin	Rabbit	Irritant
p,p'-Diaminodiphenyl Sulfone	Rabbit	Mild irritant
Methyl Ethyl Ketone	Rabbit	Minimal irritation
Toluene	Rabbit	Irritant

Serious Eye Damage/Irritation

Name	Species	Value
Epoxy Resin	Rabbit	Mild irritant
Epoxy Resin	similar compounds	Severe irritant
p,p'-Diaminodiphenyl Sulfone	Rabbit	Moderate irritant
Methyl Ethyl Ketone	Rabbit	Severe irritant
Toluene	Rabbit	Moderate irritant

Skin Sensitization

Name	Species	Value
Epoxy Resin	Human and animal	Sensitizing
Epoxy Resin	similar compounds	Sensitizing
Toluene	Guinea pig	Not classified

Respiratory Sensitization

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

Germ Cell Mutagenicity

Name	Route	Value
Epoxy Resin	In Vitro	Some positive data exist, but the data are not sufficient for classification
Epoxy Resin	In vivo	Some positive data exist, but the data are not sufficient for classification
Epoxy Resin	In vivo	Mutagenic
p,p'-Diaminodiphenyl Sulfone	In Vitro	Some positive data exist, but the data are not sufficient for classification
Methyl Ethyl Ketone	In Vitro	Not mutagenic
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
p,p'-Diaminodiphenyl Sulfone	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Methyl Ethyl Ketone	Inhalation	Human	Not carcinogenic
Toluene	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Toluene	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
Epoxy Resin	Ingestion	Not classified for development	Rat	NOAEL 90 mg/kg/day	during gestation
p,p'-Diaminodiphenyl Sulfone	Ingestion	Not classified for development	Mouse	NOAEL 100 mg/kg/day	during organogenesis
p,p'-Diaminodiphenyl Sulfone	Ingestion	Toxic to male reproduction	Rat	LOAEL 50 mg/kg/day	6 weeks
Methyl Ethyl Ketone	Inhalation	Not classified for development	Rat	LOAEL 8.8 mg/l	during gestation
Toluene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	Not classified for male reproduction	Rat	NOAEL 2.3 mg/l	1 generation
Toluene	Ingestion	Toxic to development	Rat	LOAEL 520 mg/kg/day	during gestation
Toluene	Inhalation	Toxic to development	Human	NOAEL Not available	poisoning and/or abuse

Lactation

Name	Route	Species	Value
p,p'-Diaminodiphenyl Sulfone	Ingestion	Human	Causes 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
p,p'-Diaminodiphenyl Sulfone	Ingestion	blood methemoglobinemia liver	Causes damage to organs	Human	NOAEL Not available	poisoning and/or abuse

p,p'-Diaminodiphenyl Sulfone	Ingestion	central nervous system depression	Not classified	Human	NOAEL Not available	poisoning and/or abuse
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
Toluene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Toluene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL 0.004 mg/l	3 hours
Toluene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Epoxy Resin	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 50 mg/kg/day	13 weeks
Epoxy Resin	Ingestion	gastrointestinal tract liver immune system nervous system eyes kidney and/or bladder	Not classified	Rat	NOAEL 200 mg/kg/day	13 weeks
p,p'-Diaminodiphenyl Sulfone	Ingestion	blood liver	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	not available
p,p'-Diaminodiphenyl Sulfone	Ingestion	nervous system	May cause damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
p,p'-Diaminodiphenyl Sulfone	Ingestion	immune system	Not classified	Mouse	NOAEL 54 mg/kg/day	30 days
p,p'-Diaminodiphenyl Sulfone	Ingestion	heart	Not classified	Human	NOAEL Not available	not available
p,p'-Diaminodiphenyl Sulfone	Ingestion	kidney and/or bladder	Not classified	Human	NOAEL Not available	poisoning and/or abuse
p,p'-Diaminodiphenyl Sulfone	Ingestion	vascular system	Not classified	Human	NOAEL Not available	not available
Methyl Ethyl Ketone	Dermal	nervous system	Not classified	Guinea pig	NOAEL Not available	31 weeks
Methyl Ethyl Ketone	Inhalation	liver kidney and/or bladder heart endocrine system gastrointestinal tract bone, teeth, nails, and/or hair hematopoietic system immune system 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
Toluene	Inhalation	auditory system	Causes damage to organs through	Human	NOAEL Not	poisoning

		nervous system eyes olfactory system	prolonged or repeated exposure		available	and/or abuse
Toluene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 2.3 mg/l	15 months
Toluene	Inhalation	heart liver kidney and/or bladder	Not classified	Rat	NOAEL 11.3 mg/l	15 weeks
Toluene	Inhalation	endocrine system	Not classified	Rat	NOAEL 1.1 mg/l	4 weeks
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL Not available	20 days
Toluene	Inhalation	bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 1.1 mg/l	8 weeks
Toluene	Inhalation	hematopoietic system vascular system	Not classified	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	gastrointestinal tract	Not classified	Multiple animal species	NOAEL 11.3 mg/l	15 weeks
Toluene	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 625 mg/kg/day	13 weeks
Toluene	Ingestion	heart	Not classified	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	liver kidney and/or bladder	Not classified	Multiple animal species	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	hematopoietic system	Not classified	Mouse	NOAEL 600 mg/kg/day	14 days
Toluene	Ingestion	endocrine system	Not classified	Mouse	NOAEL 105 mg/kg/day	28 days
Toluene	Ingestion	immune system	Not classified	Mouse	NOAEL 105 mg/kg/day	4 weeks

Aspiration Hazard

Name	Value
Toluene	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.

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

Germ cell mutagenicity

Reproductive toxicity

Specific target organ toxicity (single or repeated exposure)

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: 1 **Flammability:** 1 **Instability:** 1 **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: 11-3307-3
Issue Date: 03/05/19

Version Number: 52.08
Supersedes Date: 02/06/19

DISCLAIMER: The information in this Safety Data Sheet (SDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the SDS available directly from 3M.

3M USA SDSs are available at www.3M.com