Safety Data Sheet

Document Group:	11-3337-0	**Version Number:**	18.00
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SECTION 1: Identification

1.1. Product identifier
3M™ Scotch-Weld™ Structural Adhesive Film AF 3185

Product Identification Numbers
62-3105-3905-1, 62-3105-3906-9, 62-3105-4505-8, 62-3105-5300-3, 62-3105-5305-2, 62-3105-5309-4, 87-2500-0183-8

1.2. Recommended use and restrictions on use

Recommended use
Film, Structural Adhesive Film

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Aerospace and Commercial Transportation 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.
Reproductive Toxicity: Category 2.

2.2. Label elements
Signal word
Warning

Symbols
Exclamation mark | Health Hazard |

Pictograms

Hazard Statements
May cause an allergic skin reaction.
Suspected of damaging fertility or the unborn child.

Precautionary Statements

Prevention:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Wear protective gloves.
Contaminated work clothing must not be allowed out of the workplace.

Response:
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
IF exposed or concerned: Get medical advice/attention.

Storage:
Store locked up.

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

2.3. Hazards not otherwise classified
None.

53% of the mixture consists of ingredients of unknown acute oral toxicity.
60% of the mixture consists of ingredients of unknown acute dermal toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
POLYMERIC EPOXY REACTION PRODUCT (M.Wt. >700)	Trade Secret*	40 - 70
REACTION PRODUCT OF SYNTHETIC RUBBER WITH EPOXY RESIN (M.Wt.>700)	Trade Secret*	10 - 30 Trade Secret *
NON-VOLATILE AMIDE	Trade Secret*	5 - 10
4,4'-ISOPROPYLIDENEDIPHENOL	80-05-7	3 - 7 Trade Secret *
N,N'-(METHYL-1,3-PHENYLENE)BIS(N,N'-DIMETHYLUREA)	17526-94-2	0.1 - 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:
No need for first aid is anticipated.

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

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Oxides of Nitrogen	During Combustion
Oxides of Sulfur	During Combustion
Toxic Vapor, Gas, Particulate	During Combustion

5.3. Special protective actions for fire-fighters
No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
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.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
For industrial or professional use only. 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.

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
4,4'-ISOPROPYLIDENEDIPHENOL	80-05-7	CMRG	TWA:5 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 heat 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. Provide appropriate local exhaust ventilation for cutting, grinding, sanding or machining.

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
Indirect Vented Goggles

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.
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 (eg. spraying, high splash potential etc.), then

use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

Respiratory protection

Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection.

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:	light tan, odorless.
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point	*No Data Available*
Boiling Point	*Not Applicable*
Flash Point	*Not Applicable*
Evaporation rate	*Not Applicable*
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	*Not Applicable*
Flammable Limits(UEL)	*Not Applicable*
Vapor Pressure	Nil
Vapor Density	Nil
Density	1.2 g/cm3 [@ 20 ºC]
Specific Gravity	1.2 [*Ref Std:* WATER=1]
Solubility in Water	Nil
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*No Data Available*
Viscosity	*Not Applicable*
Volatile Organic Compounds	*Not Applicable*
Percent volatile	Negligible
VOC Less H2O & Exempt Solvents	*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 may occur.

10.4. Conditions to avoid
Avoid curing large quantities of material to prevent a premature reaction (exotherm) with production of intense heat and smoke.
Heat

10.5. Incompatible materials

Not determined

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:
No health effects are expected.

Skin Contact:
Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.
Prolonged or repeated exposure may cause:
Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Photosensitization: Signs/symptoms may include a sunburn-like reaction such as blistering, redness, swelling, and itching from minor exposure to sunlight.

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.

Additional Health Effects:

Reproductive/Developmental Toxicity:
Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

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 > 5,000 mg/kg
REACTION PRODUCT OF SYNTHETIC RUBBER WITH EPOXY RESIN (M.Wt.>700)	Dermal	Rat	LD50 > 1,600 mg/kg
REACTION PRODUCT OF SYNTHETIC RUBBER WITH EPOXY RESIN (M.Wt.>700)	Ingestion	Rat	LD50 > 1,000 mg/kg

NON-VOLATILE AMIDE	Ingestion	Rat	LD50 > 5,000 mg/kg
4,4'-ISOPROPYLIDENEDIPHENOL	Dermal	Rabbit	LD50 > 2,000 mg/kg
4,4'-ISOPROPYLIDENEDIPHENOL	Ingestion	Rat	LD50 3,200 mg/kg
N,N'-(METHYL-1,3-PHENYLENE)BIS(N,N'-DIMETHYLUREA)	Dermal	Rat	LD50 > 2,000 mg/kg
N,N'-(METHYL-1,3-PHENYLENE)BIS(N,N'-DIMETHYLUREA)	Ingestion	Rat	LD50 > 2,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
REACTION PRODUCT OF SYNTHETIC RUBBER WITH EPOXY RESIN (M.Wt.>700)	Rabbit	Mild irritant
NON-VOLATILE AMIDE	Rabbit	No significant irritation
4,4'-ISOPROPYLIDENEDIPHENOL	Rabbit	No significant irritation
N,N'-(METHYL-1,3-PHENYLENE)BIS(N,N'-DIMETHYLUREA)	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
REACTION PRODUCT OF SYNTHETIC RUBBER WITH EPOXY RESIN (M.Wt.>700)	Rabbit	Moderate irritant
NON-VOLATILE AMIDE	Rabbit	Mild irritant
4,4'-ISOPROPYLIDENEDIPHENOL	Rabbit	Corrosive
N,N'-(METHYL-1,3-PHENYLENE)BIS(N,N'-DIMETHYLUREA)	Rabbit	No significant irritation

Skin Sensitization

Name	Species	Value
REACTION PRODUCT OF SYNTHETIC RUBBER WITH EPOXY RESIN (M.Wt.>700)	Human and animal	Sensitizing
4,4'-ISOPROPYLIDENEDIPHENOL	official classification	Sensitizing

Photosensitization

Name	Species	Value
4,4'-ISOPROPYLIDENEDIPHENOL	Human and animal	Sensitizing

Respiratory Sensitization

Name	Species	Value
REACTION PRODUCT OF SYNTHETIC RUBBER WITH EPOXY RESIN (M.Wt.>700)	Human	Some positive data exist, but the data are not sufficient for classification

Germ Cell Mutagenicity

Name	Route	Value
REACTION PRODUCT OF SYNTHETIC RUBBER WITH EPOXY RESIN (M.Wt.>700)	In vivo	Not mutagenic
REACTION PRODUCT OF SYNTHETIC RUBBER WITH EPOXY RESIN (M.Wt.>700)	In Vitro	Some positive data exist, but the data are not sufficient for classification
NON-VOLATILE AMIDE	In Vitro	Some positive data exist, but the data are not sufficient for classification
4,4'-ISOPROPYLIDENEDIPHENOL	In vivo	Not mutagenic
4,4'-ISOPROPYLIDENEDIPHENOL	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value

REACTION PRODUCT OF SYNTHETIC RUBBER WITH EPOXY RESIN (M.Wt.>700)	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
4,4'-ISOPROPYLIDENEDIPHENOL	Ingestion	Multiple animal species	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
REACTION PRODUCT OF SYNTHETIC RUBBER WITH EPOXY RESIN (M.Wt.>700)	Ingestion	Not toxic to female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
REACTION PRODUCT OF SYNTHETIC RUBBER WITH EPOXY RESIN (M.Wt.>700)	Ingestion	Not toxic to male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
REACTION PRODUCT OF SYNTHETIC RUBBER WITH EPOXY RESIN (M.Wt.>700)	Dermal	Not toxic to development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
REACTION PRODUCT OF SYNTHETIC RUBBER WITH EPOXY RESIN (M.Wt.>700)	Ingestion	Not toxic to development	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-ISOPROPYLIDENEDIPHENOL	Inhalation	Not toxic to female reproduction	Rat	NOAEL 0.15 mg/l	13 weeks
4,4'-ISOPROPYLIDENEDIPHENOL	Inhalation	Not toxic to male reproduction	Rat	NOAEL 0.15 mg/l	13 weeks
4,4'-ISOPROPYLIDENEDIPHENOL	Ingestion	Some positive female reproductive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL 50 mg/kg/day	
4,4'-ISOPROPYLIDENEDIPHENOL	Ingestion	Some positive male reproductive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL 50 mg/kg/day	
4,4'-ISOPROPYLIDENEDIPHENOL	Ingestion	Toxic to development	Multiple animal species	NOAEL 50 mg/kg/day	

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
4,4'-ISOPROPYLIDENEDIPHENOL	Inhalation	respiratory irritation	May cause respiratory irritation	Multiple animal species	LOAEL 0.152 mg/l	15 minutes

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
REACTION PRODUCT OF SYNTHETIC RUBBER WITH EPOXY RESIN (M.Wt.>700)	Dermal	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,000 mg/kg/day	2 years
REACTION PRODUCT OF SYNTHETIC RUBBER WITH EPOXY RESIN (M.Wt.>700)	Dermal	nervous system	All data are negative	Rat	NOAEL 1,000 mg/kg/day	13 weeks
REACTION PRODUCT OF SYNTHETIC RUBBER WITH EPOXY RESIN (M.Wt.>700)	Ingestion	auditory system | heart | endocrine system | hematopoietic system | liver | eyes | kidney and/or bladder	All data are negative	Rat	NOAEL 1,000 mg/kg/day	28 days
4,4'-ISOPROPYLIDENEDIPH	Inhalation	liver | kidney and/or bladder	Some positive data exist, but the data are not sufficient for	Rat	NOAEL 0.15 mg/l	13 weeks

ENOL			classification			
4,4'-ISOPROPYLIDENEDIPHENOL	Inhalation	hematopoietic system	All data are negative	Rat	NOAEL 0.15 mg/l	13 weeks
4,4'-ISOPROPYLIDENEDIPHENOL	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 50 mg/kg/day	3 generation
4,4'-ISOPROPYLIDENEDIPHENOL	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 370 mg/kg/day	13 weeks
4,4'-ISOPROPYLIDENEDIPHENOL	Ingestion	endocrine system | hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 500 mg/kg/day	3 generation
4,4'-ISOPROPYLIDENEDIPHENOL	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 185 mg/kg/day	90 days
4,4'-ISOPROPYLIDENEDIPHENOL	Ingestion	heart | bone, teeth, nails, and/or hair	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 2,400 mg/kg/day	13 weeks

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

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

SECTION 12: Ecological information

Ecotoxicological information

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

Chemical fate information

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

SECTION 13: Disposal considerations

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

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. If no other disposal options are available, waste product that has been completely cured or polymerized may be placed in a landfill properly designed for industrial waste. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

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.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

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
4,4'-ISOPROPYLIDENEDIPHENOL	80-05-7	3 - 7

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.

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:** 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.

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