



Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier

3M™ Scotch-Weld™ Structural Adhesive Film AF 163-3

Product Identification Numbers

62-0167-0455-3, 62-0167-0550-1, 62-0167-1005-5, 62-0167-1205-1, 62-0167-1550-0, 62-0167-1705-0, 62-0167-1805-8, 62-0167-2015-3, 62-0167-3905-4, 62-0167-3906-2, 62-0167-4505-1, 62-0167-5301-4, 62-0167-5305-5, 62-0167-5309-7, 87-2500-0266-1, 87-3300-0500-7
7010365900, 7000046317, 7100062950, 7100066557

1.2. Recommended use and restrictions on use

Recommended use

Structural Adhesive Film, Industrial use

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 2.
Germ Cell Mutagenicity: Category 2.

2.2. Label elements

Signal word

Warning

Symbols

Health Hazard |

Pictograms**Hazard Statements**

Suspected of damaging fertility or the unborn child.
Suspected of causing genetic defects.

Precautionary Statements**Prevention:**

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves.

Response:

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.

62% of the mixture consists of ingredients of unknown acute oral toxicity.

62% of the mixture consists of ingredients of unknown acute dermal toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Polyether Polymer	Trade Secret*	40 - 70
Epoxy Resin	25068-38-6	10 - 30 Trade Secret *
4,4'-Isopropylidenediphenol	80-05-7	3 - 7 Trade Secret *
4-(Diglycidylamino)Phenyl Glycidyl Ether	5026-74-4	1 - 5 Trade Secret *
Dicyandiamide	461-58-5	1 - 5
N,N'-(Methyl-1,3-Phenylene)bis(N,N'-Dimethylurea)	17526-94-2	1 - 5
3-(Trimethoxysilyl)Propyl Glycidyl Ether	2530-83-8	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:

Wash with soap and water. If you are concerned, get medical advice.

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

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**

Aldehydes
Carbon monoxide
Carbon dioxide
Hydrogen Chloride
Hydrogen Cyanide
Ammonia
Oxides of Nitrogen

Condition

During Combustion
During Combustion
During Combustion
During Combustion
During Combustion
During Combustion
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. 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**

Avoid breathing of vapors created during cure cycle. Avoid breathing of dust created by cutting, sanding, grinding or

machining. 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 get in eyes, on skin, or on clothing. 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. Store away from amines.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

No occupational exposure limit values exist for any of the components listed in Section 3 of this SDS.

8.2. Exposure controls

8.2.1. Engineering controls

Curing enclosures must be exhausted to outdoors or to a suitable emission control device.

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

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:	Green, essentially no odor.
Odor threshold	No Data Available
pH	Not Applicable
Melting point	No Data Available

Boiling Point	<i>Not Applicable</i>
Flash Point	No flash point
Evaporation rate	<i>Not Applicable</i>
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
Vapor Pressure	<i>Not Applicable</i>
Vapor Density	<i>Not Applicable</i>
Density	<i>No Data Available</i>
Specific Gravity	<i>No Data Available</i>
Solubility in Water	Nil
Solubility- non-water	<i>No Data Available</i>
Partition coefficient: n-octanol/ water	<i>Not Applicable</i>
Autoignition temperature	<i>Not Applicable</i>
Decomposition temperature	<i>No Data Available</i>
Viscosity	<i>Not Applicable</i>
Volatile Organic Compounds	<i>Not Applicable</i>
Percent volatile	Nil
VOC Less H2O & Exempt Solvents	<i>Not Applicable</i>

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

<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:

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:

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.

May cause additional health effects (see below).

Additional Health Effects:

Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

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	Dermal	Rat	LD50 > 1,600 mg/kg
Epoxy Resin	Ingestion	Rat	LD50 > 1,000 mg/kg
4,4'-Isopropylidenediphenol	Dermal	Rabbit	LD50 > 2,000 mg/kg
4,4'-Isopropylidenediphenol	Ingestion	Rat	LD50 3,200 mg/kg
Dicyandiamide	Dermal	Rabbit	LD50 > 10,000 mg/kg
Dicyandiamide	Ingestion	Rat	LD50 > 30,000 mg/kg
4-(Diglycidylamino)Phenyl Glycidyl Ether	Dermal	Rabbit	LD50 > 4,000 mg/kg
4-(Diglycidylamino)Phenyl Glycidyl Ether	Ingestion	Rat	LD50 500-5000 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
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Dermal	Rabbit	LD50 4,000 mg/kg
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.3 mg/l
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Ingestion	Rat	LD50 7,010 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Epoxy Resin	Rabbit	Mild irritant
4,4'-Isopropylidenediphenol	Rabbit	No significant irritation
Dicyandiamide	Human and animal	Minimal irritation
4-(Diglycidylamino)Phenyl Glycidyl Ether	Rabbit	Irritant
N,N'-(Methyl-1,3-Phenylene)bis(N,N'-Dimethylurea)	Rabbit	No significant irritation
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Rabbit	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
Epoxy Resin	Rabbit	Moderate irritant
4,4'-Isopropylidenediphenol	Rabbit	Corrosive
Dicyandiamide	Professional judgement	Mild irritant
4-(Diglycidylamino)Phenyl Glycidyl Ether	Rabbit	Severe irritant
N,N'-(Methyl-1,3-Phenylene)bis(N,N'-Dimethylurea)	Rabbit	No significant irritation
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Rabbit	Corrosive

Skin Sensitization

Name	Species	Value
Epoxy Resin	Human and animal	Sensitizing
4,4'-Isopropylidenediphenol	official classification	Sensitizing
Dicyandiamide	Guinea pig	Not classified
4-(Diglycidylamino)Phenyl Glycidyl Ether	Guinea pig	Sensitizing
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Guinea pig	Not classified

Photosensitization

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

Respiratory Sensitization

Name	Species	Value
Epoxy Resin	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
4,4'-Isopropylidenediphenol	In vivo	Not mutagenic
4,4'-Isopropylidenediphenol	In Vitro	Some positive data exist, but the data are not sufficient for classification
Dicyandiamide	In Vitro	Not mutagenic

4-(Diglycidylamino)Phenyl Glycidyl Ether	In Vitro	Some positive data exist, but the data are not sufficient for classification
4-(Diglycidylamino)Phenyl Glycidyl Ether	In vivo	Mutagenic
3-(Trimethoxysilyl)Propyl Glycidyl Ether	In vivo	Not mutagenic
3-(Trimethoxysilyl)Propyl Glycidyl Ether	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Epoxy Resin	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
Dicyandiamide	Ingestion	Rat	Not carcinogenic
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Dermal	Mouse	Not 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
4,4'-Isopropylidenediphenol	Ingestion	Not classified for female reproduction	Multiple animal species	NOAEL 50 mg/kg/day	
4,4'-Isopropylidenediphenol	Ingestion	Not classified for male reproduction	Multiple animal species	NOAEL 50 mg/kg/day	
4,4'-Isopropylidenediphenol	Ingestion	Toxic to development	Multiple animal species	NOAEL 50 mg/kg/day	
Dicyandiamide	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	prematuring & during gestation
Dicyandiamide	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	44 days
Dicyandiamide	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	prematuring & during gestation
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Ingestion	Not classified for development	Rat	NOAEL 3,000 mg/kg/day	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
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
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 heart endocrine system hematopoietic system liver eyes kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
4,4'-Isopropylidenediphenol	Inhalation	liver kidney and/or bladder hematopoietic system	Not classified	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	Not classified	Rat	NOAEL 500 mg/kg/day	3 generation
4,4'-Isopropylidenediphenol	Ingestion	nervous system	Not classified	Rat	NOAEL 185 mg/kg/day	90 days
4,4'-Isopropylidenediphenol	Ingestion	heart bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 2,400 mg/kg/day	13 weeks
Dicyandiamide	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 6,822 mg/kg/day	13 weeks
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Ingestion	heart endocrine system bone, teeth, nails, and/or hair hematopoietic system liver immune system nervous system kidney and/or bladder respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days

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. 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.

EPCRA 311/312 Hazard Classifications:

Physical Hazards

Not applicable

Health Hazards

Germ cell mutagenicity

Reproductive toxicity

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

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
4,4'-Isopropylidenediphenol	80-05-7	Trade Secret 3 - 7

This material contains a chemical which requires export notification under TSCA Section 12[b]:

<u>Ingredient (Category if applicable)</u>	<u>C.A.S. No</u>	<u>Regulation</u>	<u>Status</u>
4-(Diglycidylamino)Phenyl Glycidyl Ether	5026-74-4	Toxic Substances Control Act (TSCA) 4 Test Rule Chemicals	Applicable

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.
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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.

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