



Safety Data Sheet

Copyright,2024, 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:	10-8292-4	Version Number:	42.00
Issue Date:	11/22/24	Supersedes Date:	06/30/21

SECTION 1: Identification

1.1. Product identifier

3M™ Scotch-Weld™ Structural Adhesive Film AF-3109-2U

Product Identification Numbers

62-3059-3906-8, 62-3059-5305-1, 62-3059-5306-9, 62-3059-5308-5, 62-3059-5309-3, 62-3059-9909-6, 62-3060-0155-3, 62-3060-0452-4, 62-3060-0505-9, 62-3060-0805-3, 62-3060-1005-9, 62-3060-1105-7, 62-3060-1205-5, 62-3060-1475-4, 62-3060-1705-4, 62-3060-2005-8, 62-3060-2205-4, 62-3060-2805-1, 62-3060-3905-8, 62-3060-5301-8, 62-3060-5305-9, 62-3060-5306-7, 62-3060-5307-5, 62-3060-5308-3, 62-3060-5309-1, 62-3060-6003-9, 62-3060-6005-4, 62-3060-6008-8, 62-3060-6009-6, 62-3132-0025-5, 62-3132-0145-1, 62-3132-0146-9, 62-3132-0155-0, 62-3132-0156-8, 62-3132-3905-5, 62-3132-4805-6, 62-3132-5305-6, 62-3132-5306-4, 62-3136-3905-6, 62-3173-6005-5, 62-3173-6006-3, 87-3300-0009-9, 87-3300-0035-4, 87-3300-0092-5, 87-3300-0528-8, 87-3300-0529-6, 87-3300-0578-3, FS-9100-3931-2, 7000046407, 7000000836, 7010309767, 7000046408, 7000046432, 7100016213, 7000080054, 7010304401, 7100067332, 7100067331, 7100067555, 7010304403

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

Germ Cell Mutagenicity: Category 2.

2.2. Label elements

Signal word

Warning

Symbols

Health Hazard |

Pictograms**Hazard Statements**

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.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Polymeric Epoxy Reaction Product (M.W. >700)	Trade Secret*	45 - 65
Epoxy Resin 2	28768-32-3	10 - 30 Trade Secret *
Dicyandiamide	461-58-5	5 - 10
Epoxy Resin 1	25068-38-6	5 - 10 Trade Secret *
Epoxy Resin 3	1675-54-3	5 - 10 Trade Secret *
N,N'-(Methyl-1,3-Phenylene)bis(N',N'-Dimethylurea)	17526-94-2	1 - 5
Non-Volatile Amide	1071-93-8	0.5 - 1.5 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 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

No critical symptoms or effects. 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. Ventilate the area with fresh air. 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 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.

Gloves made from the following material(s) are recommended: Chemical Protective glove of any material type

Respiratory protection

None required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state

Solid

Color

Blue

Specific Physical Form:

Film

Odor

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

Not Applicable

Vapor Density

Not Applicable

Density

No Data Available

Specific Gravity

No Data Available

Solubility in Water	Nil
Solubility- non-water	No Data Available
Partition coefficient: n-octanol/ water	No Data Available
Autoignition temperature	Not Applicable
Decomposition temperature	No Data Available
Viscosity	Not Applicable
Percent volatile	No Data Available
Percent volatile	Negligible
VOC Less H2O & Exempt Solvents	No Data Available

SECTION 10: Stability and reactivity

10.1. Reactivity

This material is considered to be non reactive under normal use conditions.

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:

No health effects are expected.

Skin Contact:

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

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:**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	Ingestion		No data available; calculated ATE >5,000 mg/kg
Epoxy Resin 2	Dermal	Rabbit	LD50 > 3,000 mg/kg
Epoxy Resin 2	Ingestion	Rat	LD50 > 5,000 mg/kg
Epoxy Resin 1	Dermal	Rat	LD50 > 1,600 mg/kg
Epoxy Resin 1	Ingestion	Rat	LD50 > 1,000 mg/kg
Epoxy Resin 3	Dermal	Rat	LD50 > 1,600 mg/kg
Epoxy Resin 3	Ingestion	Rat	LD50 > 1,000 mg/kg
Dicyandiamide	Dermal	Rabbit	LD50 > 10,000 mg/kg
Dicyandiamide	Ingestion	Rat	LD50 > 30,000 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
Non-Volatile Amide	Ingestion	Mouse	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Overall product	Multiple animal species	No significant irritation
Epoxy Resin 2	Rabbit	No significant irritation
Epoxy Resin 1	Rabbit	Mild irritant
Epoxy Resin 3	Rabbit	Mild irritant
Dicyandiamide	Human and animal	Minimal irritation
N,N'-(Methyl-1,3-Phenylene)bis(N,N'-Dimethylurea)	Rabbit	No significant irritation
Non-Volatile Amide	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Epoxy Resin 2	Rabbit	Mild irritant
Epoxy Resin 1	Rabbit	Moderate irritant
Epoxy Resin 3	Rabbit	Moderate irritant
Dicyandiamide	Professional judgement	Mild irritant
N,N'-(Methyl-1,3-Phenylene)bis(N,N'-Dimethylurea)	Rabbit	No significant irritation

Skin Sensitization

Name	Species	Value
Overall product	Guinea pig	Not classified

Epoxy Resin 2	Human and animal	Sensitizing
Epoxy Resin 1	Human and animal	Sensitizing
Epoxy Resin 3	Human and animal	Sensitizing
Dicyandiamide	Guinea pig	Not classified
Non-Volatile Amide	Guinea pig	Sensitizing

Respiratory Sensitization

Name	Species	Value
Epoxy Resin 1	Human	Not classified
Epoxy Resin 3	Human	Not classified

Germ Cell Mutagenicity

Name	Route	Value
Epoxy Resin 2	In Vitro	Some positive data exist, but the data are not sufficient for classification
Epoxy Resin 2	In vivo	Mutagenic
Epoxy Resin 1	In vivo	Not mutagenic
Epoxy Resin 1	In Vitro	Some positive data exist, but the data are not sufficient for classification
Epoxy Resin 3	In vivo	Not mutagenic
Epoxy Resin 3	In Vitro	Some positive data exist, but the data are not sufficient for classification
Dicyandiamide	In Vitro	Not mutagenic
Non-Volatile Amide	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Epoxy Resin 1	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Epoxy Resin 3	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Dicyandiamide	Ingestion	Rat	Not carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Epoxy Resin 2	Ingestion	Not classified for development	Rat	NOAEL 90 mg/kg/day	during gestation
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
Epoxy Resin 3	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
Epoxy Resin 3	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation

Epoxy Resin 3	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
Epoxy Resin 3	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
Dicyandiamide	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	prematings & 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	prematings & during gestation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

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

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Epoxy Resin 2	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 2	Ingestion	gastrointestinal tract liver immune system nervous system eyes kidney and/or bladder	Not classified	Rat	NOAEL 200 mg/kg/day	13 weeks
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 heart endocrine system hematopoietic system liver eyes kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Epoxy Resin 3	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
Epoxy Resin 3	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Epoxy Resin 3	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
Dicyandiamide	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 6,822 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. 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.

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

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: 0 **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.

Document Group:	10-8292-4	Version Number:	42.00
Issue Date:	11/22/24	Supersedes Date:	06/30/21

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