



## Safety Data Sheet

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|                        |           |                         |          |
|------------------------|-----------|-------------------------|----------|
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### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Scotch-Weld™ Epoxy Adhesive 460 Off-White, Part A

#### Product Identification Numbers

62-3693-8530-7, 62-3693-9530-6

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Structural adhesive

#### 1.3. Supplier's details

|                      |   |
|----------------------|---|
| <b>MANUFACTURER:</b> | 3M                                      |
| <b>DIVISION:</b>     | Industrial Adhesives and Tapes Division |
| <b>ADDRESS:</b>      | 3M Center, St. Paul, MN 55144-1000, USA |
| <b>Telephone:</b>    | 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

Serious Eye Damage/Irritation: Category 1.

Skin Corrosion/Irritation: Category 1B.

#### 2.2. Label elements

##### Signal word

Danger

##### Symbols

Corrosion |

##### Pictograms

**Hazard Statements**

Causes severe skin burns and eye damage.

**Precautionary Statements****Prevention:**

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

Wear protective gloves, protective clothing, and eye/face protection.

Wash thoroughly after handling.

**Response:**

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER or doctor/physician.

Wash contaminated clothing before reuse.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

**Storage:**

Store locked up.

**Disposal:**

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

**2.3. Hazards not otherwise classified**

May cause chemical gastrointestinal burns.

## SECTION 3: Composition/information on ingredients

| Ingredient   | C.A.S. No.    | % by Wt                |
|--|---------------|------------------------|
| Modified Epoxy Resin (NJTS Reg. No. 04499600-6840) | Trade Secret* | 40 - 70 Trade Secret * |
| 4,7,10-Trioxatridecane-1,13-Diamine                | 4246-51-9     | 30 - 60 Trade Secret * |
| Amorphous Silica                                   | 67762-90-7    | 3 - 7 Trade Secret *   |
| 2,4,6-tris((Dimethylamino)-Methyl)Phenol           | 90-72-2       | 1 - 5 Trade Secret *   |

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

\*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 flush with large amounts of water for at least 15 minutes. Remove contaminated clothing. Get immediate medical attention. Wash clothing before reuse.

**Eye Contact:**

Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

**If Swallowed:**

Rinse mouth. Do not induce vomiting. Get immediate 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  
Oxides of Nitrogen

**Condition**

During Combustion  
During Combustion  
During Combustion  
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**

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. 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. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

**6.3. Methods and material for containment and cleaning up**

Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. 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 breathe 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. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.)

### 7.2. Conditions for safe storage including any incompatibilities

Store away from acids. Store away from strong bases. Store away from oxidizing agents. 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 |
|--|------------|--------|---|---------------------|
| SILICA, AMORPHOUS                        | 67762-90-7 | OSHA   | TWA concentration:0.8 mg/m <sup>3</sup> ;TWA:20 millions of particles/cu. ft. |                     |
| Amorphous Silica                         | 67762-90-7 | CMRG   | CEIL:5 mg/m <sup>3</sup>  |                     |
| 2,4,6-tris((Dimethylamino)-Methyl)Phenol | 90-72-2    | CMRG   | TWA:5 ppm   |                     |

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

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:

Full Face Shield

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: Fluoroelastomer

## 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

|  |  |
|--|--|
| <b>General Physical Form:</b>                  | Liquid   |
| <b>Specific Physical Form:</b>                 | viscous liquid   |
| <b>Odor, Color, Grade:</b>                     | Amber, very mild pungent odor.   |
| <b>Odor threshold</b>                          | <i>No Data Available</i>   |
| <b>pH</b>                                      | <i>Not Applicable</i>  |
| <b>Melting point</b>                           | <i>Not Applicable</i>  |
| <b>Boiling Point</b>                           | $\geq 171$ °C  |
| <b>Flash Point</b>                             | 340 °F [ <i>Test Method: Closed Cup</i> ]  |
| <b>Evaporation rate</b>                        | <i>No Data Available</i>   |
| <b>Flammability (solid, gas)</b>               | Not Applicable   |
| <b>Flammable Limits(LEL)</b>                   | <i>No Data Available</i>   |
| <b>Flammable Limits(UEL)</b>                   | <i>No Data Available</i>   |
| <b>Vapor Pressure</b>                          | $\leq 3.0$ mmHg [ <i>@ 68 °F</i> ]   |
| <b>Vapor Density</b>                           | 3.72 [ <i>Ref Std: AIR=1</i> ]   |
| <b>Density</b>                                 | 1.09 g/ml  |
| <b>Specific Gravity</b>                        | 1.09 [ <i>Ref Std: WATER=1</i> ]   |
| <b>Solubility in Water</b>                     | Slight (less than 10%)   |
| <b>Solubility- non-water</b>                   | <i>No Data Available</i>   |
| <b>Partition coefficient: n-octanol/ water</b> | <i>No Data Available</i>   |
| <b>Autoignition temperature</b>                | <i>No Data Available</i>   |
| <b>Decomposition temperature</b>               | <i>No Data Available</i>   |
| <b>Viscosity</b>                               | 8,500 - 13,000 centipoise [ <i>@ 73.4 °F</i> ] [ <i>Test Method: Brookfield</i> ]                                |
| <b>Hazardous Air Pollutants</b>                | 0 % weight [ <i>Test Method: Calculated</i> ]  |
| <b>VOC Less H2O &amp; Exempt Solvents</b>      | 0 g/l [ <i>Test Method: calculated SCAQMD rule 443.1</i> ] [ <i>Details: when used as intended with Part B</i> ] |
| <b>VOC Less H2O &amp; Exempt Solvents</b>      | 0 g/l [ <i>Test Method: calculated SCAQMD rule 443.1</i> ] [ <i>Details: as supplied</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

None known.

**10.5. Incompatible materials**

Amines  
Alcohols  
Strong bases  
Strong acids  
Strong oxidizing agents

**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.

**Skin Contact:**

Corrosive (Skin Burns): Signs/symptoms may include localized redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.

**Eye Contact:**

Corrosive (Eye Burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

**Ingestion:**

Gastrointestinal Corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain; nausea; vomiting; and diarrhea; blood in the feces and/or vomitus may also be seen.

**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 |
| 4,7,10-Trioxatridecane-1,13-Diamine | Dermal    | Rabbit  | LD50 2,500 mg/kg                                |
| 4,7,10-Trioxatridecane-1,13-Diamine | Ingestion | Rat     | LD50 3,160 mg/kg                                |
| Amorphous Silica                    | Dermal    | Rabbit  | LD50 > 5,000 mg/kg                              |

|  |                                |     |                    |
|--|--------------------------------|-----|--------------------|
| Amorphous Silica                         | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 0.691 mg/l  |
| Amorphous Silica                         | Ingestion                      | Rat | LD50 > 5,110 mg/kg |
| 2,4,6-tris((Dimethylamino)-Methyl)Phenol | Dermal                         | Rat | LD50 1,280 mg/kg   |
| 2,4,6-tris((Dimethylamino)-Methyl)Phenol | Ingestion                      | Rat | LD50 1,000 mg/kg   |

ATE = acute toxicity estimate

### Skin Corrosion/Irritation

| Name                                     | Species       | Value                     |
|--|---------------|---------------------------|
| Overall product                          | In vitro data | Corrosive                 |
| 4,7,10-Trioxatridecane-1,13-Diamine      | Rabbit        | Corrosive                 |
| Amorphous Silica                         | Rabbit        | No significant irritation |
| 2,4,6-tris((Dimethylamino)-Methyl)Phenol | Rabbit        | Corrosive                 |

### Serious Eye Damage/Irritation

| Name                                     | Species                | Value                     |
|--|------------------------|---------------------------|
| 4,7,10-Trioxatridecane-1,13-Diamine      | similar health hazards | Corrosive                 |
| Amorphous Silica                         | Rabbit                 | No significant irritation |
| 2,4,6-tris((Dimethylamino)-Methyl)Phenol | Rabbit                 | Corrosive                 |

### Skin Sensitization

| Name                                     | Species          | Value  |
|--|------------------|--|
| Amorphous Silica                         | Human and animal | Not sensitizing  |
| 2,4,6-tris((Dimethylamino)-Methyl)Phenol | Guinea pig       | Some positive data exist, but the data are not sufficient for classification |

### 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         |
|--|----------|---------------|
| Overall product                          | In Vitro | Not mutagenic |
| Amorphous Silica                         | In Vitro | Not mutagenic |
| 2,4,6-tris((Dimethylamino)-Methyl)Phenol | In Vitro | Not mutagenic |

### Carcinogenicity

| Name             | Route         | Species | Value  |
|------------------|---------------|---------|--|
| Amorphous Silica | Not Specified | 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    |
|------------------|-----------|----------------------------------|---------|-----------------------|----------------------|
| Amorphous Silica | Ingestion | Not toxic to female reproduction | Rat     | NOAEL 509 mg/kg/day   | 1 generation         |
| Amorphous Silica | Ingestion | Not toxic to male reproduction   | Rat     | NOAEL 497 mg/kg/day   | 1 generation         |
| Amorphous Silica | Ingestion | Not toxic to development         | Rat     | NOAEL 1,350 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 |
|--|------------|------------------------|--|---------|---------------------|-------------------|
| 4,7,10-Trioxatridecane-1,13-Diamine      | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification |         | NOAEL Not available |                   |
| 2,4,6-tris((Dimethylamino)-Methyl)Phenol | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification |         | NOAEL Not available |                   |

**Specific Target Organ Toxicity - repeated exposure**

| Name                                     | Route      | Target Organ(s)                               | Value  | Species | Test Result         | Exposure Duration     |
|--|------------|---|--|---------|---------------------|-----------------------|
| Amorphous Silica                         | Inhalation | respiratory system   silicosis                | All data are negative  | Human   | NOAEL Not available | occupational exposure |
| 2,4,6-tris((Dimethylamino)-Methyl)Phenol | Dermal     | skin   liver   nervous system                 | Some positive data exist, but the data are not sufficient for classification | Rat     | NOAEL 125 mg/kg/day | 28 days               |
| 2,4,6-tris((Dimethylamino)-Methyl)Phenol | Dermal     | auditory system   hematopoietic system   eyes | All data are negative  | Rat     | NOAEL 125 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. 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 - No

### 15.2. State Regulations

Contact 3M for more information.

### 15.3. Chemical Inventories

The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information.

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:** 3 **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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