



Safety Data Sheet

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|------------------------|-----------|-------------------------|----------|
| Document Group: | 29-1915-7 | Version Number: | 2.01 |
| Issue Date: | 05/08/17 | Supersedes Date: | 04/19/17 |

Product identifier

3M™ Scotch-Weld™ Structural Void Filling Compound EC-3505 B/A FR

ID Number(s):

87-2500-0432-9, 87-2500-0433-7, 87-2500-0452-7, 87-2500-0481-6

Recommended use

Adhesive

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)

Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

This product is a kit or a multipart product which consists of multiple, independently packaged components. A Safety Data Sheet (SDS), Article Information Sheet (AIS), or Article Information Letter (AIL) for each of these components is included. Please do not separate the component documents from this cover page. The document numbers for components of this product are:

29-1912-4, 29-1913-2

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|------------------------|-----------|-------------------------|----------|
| Document Group: | 29-1913-2 | Version Number: | 4.03 |
| Issue Date: | 05/08/17 | Supersedes Date: | 04/26/17 |

SECTION 1: Identification

1.1. Product identifier

3M™ Scotch-Weld™ Structural Void Filling Compound EC-3505 B/A FR Part A

Product Identification Numbers

LC-B100-1077-4, LC-B100-0904-9, LC-B100-0905-0, 87-2500-0459-2, 87-2500-0484-0

1.2. Recommended use and restrictions on use

Recommended use

Accelerator for two component adhesive

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

Corrosive to metal: Category 1.
Acute Toxicity (oral): Category 4.
Serious Eye Damage/Irritation: Category 1.
Skin Corrosion/Irritation: Category 1C.
Skin Sensitizer: Category 1A.
Specific Target Organ Toxicity (single exposure): Category 1.
Specific Target Organ Toxicity (single exposure): Category 3.

2.2. Label elements

Signal word

Danger

Symbols

Corrosion | Exclamation mark | Health Hazard |

Pictograms



Hazard Statements

May be corrosive to metals.

Harmful if swallowed.

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

May cause respiratory irritation.

May cause drowsiness or dizziness.

Causes damage to organs:

blood or blood-forming organs |

Precautionary Statements

Prevention:

Keep only in original container.

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

Use only outdoors or in a well-ventilated area.

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

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

Wash thoroughly after handling.

Contaminated work clothing must not be allowed out of the workplace.

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.

If skin irritation or rash occurs: Get medical advice/attention.

Wash contaminated clothing before reuse.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Call a POISON CENTER or doctor/physician if you feel unwell.

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

Absorb spillage to prevent material damage.

Storage:

Store in a corrosive resistant container with a resistant inner liner.

Store in a well-ventilated place. Keep container tightly closed.

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 consider as part of the medical management.

2.3. Hazards not otherwise classified

May cause chemical gastrointestinal burns.

Supplemental Information:

Persons previously sensitized to amines may develop a cross-sensitization reaction to certain other amines.

17% of the mixture consists of ingredients of unknown acute oral toxicity.

43% of the mixture consists of ingredients of unknown acute dermal toxicity.

SECTION 3: Composition/information on ingredients

| Ingredient | C.A.S. No. | % by Wt |
|---|---------------|--------------------------|
| BENZYL ALCOHOL | 100-51-6 | 15 - 40 Trade Secret * |
| ISOPHORONE DIAMINE | 2855-13-2 | 15 - 40 Trade Secret * |
| GLASS BUBBLES | 65997-17-3 | 10 - 30 |
| MODIFIED ALIPHATIC AMINE | 68609-08-5 | 5 - 25 |
| TRIS(2,4,6-DIMETHYLAMINOMONOMETHYL)PHENOL | 90-72-2 | 10 - 20 Trade Secret * |
| CALCIUM SALT | 13477-34-4 | 1 - 10 Trade Secret * |
| LIMESTONE | 1317-65-3 | 1 - 10 |
| POLYAMIDE | Trade Secret* | 0.5 - 5 |
| BIS[(DIMETHYLAMINO)METHYL]PHENOL | 71074-89-0 | 0.5 - 2.5 Trade Secret * |
| ISOPENTANE | 78-78-4 | < 0.5 |

*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

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 flammable liquids such as dry chemical or carbon dioxide 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

| <u>Substance</u> | <u>Condition</u> |
|--------------------|-------------------|
| Carbon monoxide | During Combustion |
| Carbon dioxide | During Combustion |
| Oxides of Nitrogen | During Combustion |

5.3. Special protective actions for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture.

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. 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

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 metal container approved for use in transportation by appropriate authorities. The container must be lined with polyethylene plastic or contain a plastic drum liner made of polyethylene. 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. Cover, but do not seal for 48 hours. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid skin contact with hot material. 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. Contaminated work clothing should not be allowed out of the workplace. 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 in a well-ventilated place. Keep container tightly closed. Store away from heat. Keep only in original container. Store in a corrosive resistant container with a resistant inner liner. Store away from acids. Store away from oxidizing agents.

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 |
|----------------|------------|-------------------------|--|---------------------|
| BENZYL ALCOHOL | 100-51-6 | AIHA | TWA:44.2 mg/m3(10 ppm) | |
| LIMESTONE | 1317-65-3 | OSHA | TWA(as total dust):15 mg/m3;TWA(respirable fraction):5 mg/m3 | |
| GLASS BUBBLES | 65997-17-3 | Manufacturer determined | TWA(as dust):10 mg/m3 | |
| ISOPENTANE | 78-78-4 | ACGIH | TWA:1000 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**

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.

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: Butyl Rubber

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 – Butyl rubber

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.

Thermal hazards

Wear heat insulating gloves when handling hot material to prevent thermal burns.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

| | |
|--|---|
| General Physical Form: | Liquid |
| Specific Physical Form: | Paste |
| Odor, Color, Grade: | Yellow, low odor paste |
| Odor threshold | <i>No Data Available</i> |
| pH | <i>No Data Available</i> |
| Melting point | <i>Not Applicable</i> |
| Boiling Point | <i>Not Applicable</i> |
| Flash Point | >=200 °F [<i>Test Method:Closed Cup</i>] |
| Evaporation rate | <i>Not Applicable</i> |
| Flammability (solid, gas) | Not Applicable |
| Flammable Limits(LEL) | <i>No Data Available</i> |
| Flammable Limits(UEL) | <i>No Data Available</i> |
| Vapor Pressure | <i>No Data Available</i> |
| Vapor Density | <i>No Data Available</i> |
| Density | 0.4 - 0.45 g/cm ³ |
| Specific Gravity | 0.3 - 0.6 [<i>Ref Std:WATER=1</i>] |
| Solubility in Water | Negligible |
| Solubility- non-water | <i>No Data Available</i> |
| Partition coefficient: n-octanol/ water | <i>No Data Available</i> |
| Autoignition temperature | <i>No Data Available</i> |
| Decomposition temperature | <i>No Data Available</i> |
| Viscosity | <i>No Data Available</i> |
| Hazardous Air Pollutants | <i>No Data Available</i> |
| Volatile Organic Compounds | <=135 g/l [<i>Test Method:calculated SCAQMD rule 443.1</i>] |
| VOC Less H₂O & Exempt Solvents | <=135 g/l [<i>Test Method:calculated SCAQMD rule 443.1</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
Heat is generated during cure. Do not cure a mass larger than 50 grams in a confined space to prevent a premature exothermic reaction with production of intense heat and smoke.

10.5. Incompatible materials

Strong oxidizing agents

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.

Dust from cutting, grinding, sanding or machining may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

Skin Contact:

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

Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

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.

Dust created by cutting, grinding, sanding, or machining may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion:

Harmful if swallowed. 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.

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.

Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Additional Information:

Persons previously sensitized to amines may develop a cross-sensitization reaction to certain other amines.

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 ATE300 - 2,000 mg/kg |
| ISOPHORONE DIAMINE | Dermal | Rat | LD50 > 2,000 mg/kg |
| ISOPHORONE DIAMINE | Inhalation-Dust/Mist (4 hours) | Rat | LC50 estimated to be 1 - 5 mg/l |
| ISOPHORONE DIAMINE | Ingestion | Rat | LD50 1,030 mg/kg |
| BENZYL ALCOHOL | Inhalation-Dust/Mist (4 hours) | Rat | LC50 8.8 mg/l |
| BENZYL ALCOHOL | Ingestion | Rat | LD50 1,230 mg/kg |
| GLASS BUBBLES | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| GLASS BUBBLES | Ingestion | | LD50 estimated to be 2,000 - 5,000 mg/kg |
| TRIS(2,4,6-DIMETHYLAMINOMONOMETHYL)PHENOL | Dermal | Rat | LD50 1,280 mg/kg |
| TRIS(2,4,6-DIMETHYLAMINOMONOMETHYL)PHENOL | Ingestion | Rat | LD50 1,000 mg/kg |
| LIMESTONE | Dermal | Rat | LD50 > 2,000 mg/kg |
| LIMESTONE | Inhalation-Dust/Mist (4 hours) | Rat | LC50 3 mg/l |
| LIMESTONE | Ingestion | Rat | LD50 6,450 mg/kg |
| BIS(DIMETHYLAMINO)METHYLPHENOL | Ingestion | | LD50 estimated to be 300 - 2,000 mg/kg |
| CALCIUM SALT | Ingestion | Rat | LD50 >300, <2000 mg/kg |
| CALCIUM SALT | Dermal | similar compounds | LD50 > 2,000 mg/kg |
| POLYAMIDE | Dermal | Rat | LD50 > 2,000 |
| POLYAMIDE | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 6.3 |
| POLYAMIDE | Ingestion | Rat | LD50 > 2,000 |
| ISOPENTANE | Dermal | Rabbit | LD50 3,000 mg/kg |
| ISOPENTANE | Inhalation-Vapor (4 hours) | Rat | LC50 > 18 mg/l |
| ISOPENTANE | Ingestion | Rat | LD50 > 2,000 mg/kg |

ATE = acute toxicity estimate

Skin Corrosion/Irritation

| Name | Species | Value |
|------|---------|-------|
| | | |

| | | |
|---|-------------------------|---------------------------|
| ISOPHORONE DIAMINE | official classification | Corrosive |
| BENZYL ALCOHOL | Multiple animal species | Mild irritant |
| GLASS BUBBLES | Professional judgement | No significant irritation |
| TRIS(2,4,6-DIMETHYLAMINOMONOMETHYL)PHENOL | Rabbit | Corrosive |
| LIMESTONE | Rabbit | No significant irritation |
| BIS[(DIMETHYLAMINO)METHYL]PHENOL | similar compounds | Corrosive |
| CALCIUM SALT | similar compounds | No significant irritation |
| POLYAMIDE | Rabbit | No significant irritation |
| ISOPENTANE | Rabbit | Minimal irritation |

Serious Eye Damage/Irritation

| Name | Species | Value |
|---|------------------------|---------------------------|
| ISOPHORONE DIAMINE | Rabbit | Corrosive |
| BENZYL ALCOHOL | Rabbit | Severe irritant |
| GLASS BUBBLES | Professional judgement | No significant irritation |
| TRIS(2,4,6-DIMETHYLAMINOMONOMETHYL)PHENOL | Rabbit | Corrosive |
| LIMESTONE | Rabbit | No significant irritation |
| BIS[(DIMETHYLAMINO)METHYL]PHENOL | similar compounds | Corrosive |
| CALCIUM SALT | Rabbit | Corrosive |
| POLYAMIDE | Rabbit | Mild irritant |
| ISOPENTANE | Rabbit | Mild irritant |

Skin Sensitization

| Name | Species | Value |
|---|-------------------|----------------|
| ISOPHORONE DIAMINE | Guinea pig | Sensitizing |
| BENZYL ALCOHOL | Human and animal | Not classified |
| TRIS(2,4,6-DIMETHYLAMINOMONOMETHYL)PHENOL | Guinea pig | Not classified |
| CALCIUM SALT | similar compounds | Not classified |
| POLYAMIDE | Mouse | Not classified |
| ISOPENTANE | 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 |
|--------------------|----------|---------------|
| ISOPHORONE DIAMINE | In Vitro | Not mutagenic |
| ISOPHORONE DIAMINE | In vivo | Not mutagenic |
| BENZYL ALCOHOL | In vivo | Not mutagenic |

| | | |
|---|----------|--|
| BENZYL ALCOHOL | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| GLASS BUBBLES | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| TRIS(2,4,6-DIMETHYLAMINOMONOMETHYL)PHENOL | In Vitro | Not mutagenic |
| CALCIUM SALT | In Vitro | Not mutagenic |
| ISOPENTANE | In vivo | Not mutagenic |
| ISOPENTANE | In Vitro | Some positive data exist, but the data are not sufficient for classification |

Carcinogenicity

| Name | Route | Species | Value |
|----------------|------------|-------------------------|--|
| BENZYL ALCOHOL | Ingestion | Multiple animal species | Not carcinogenic |
| GLASS BUBBLES | Inhalation | 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 |
|--------------------|------------|--|-------------------|-----------------------|--------------------------------|
| ISOPHORONE DIAMINE | Ingestion | Not classified for development | Rat | NOAEL 250 mg/kg/day | during gestation |
| BENZYL ALCOHOL | Ingestion | Not classified for development | Mouse | NOAEL 550 mg/kg/day | during organogenesis |
| LIMESTONE | Ingestion | Not classified for development | Rat | NOAEL 625 mg/kg/day | prematuring & during gestation |
| CALCIUM SALT | Ingestion | Not classified for female reproduction | similar compounds | NOAEL 1,500 mg/kg/day | prematuring into lactation |
| CALCIUM SALT | Ingestion | Not classified for male reproduction | similar compounds | NOAEL 1,500 mg/kg/day | 28 days |
| CALCIUM SALT | Ingestion | Not classified for development | similar compounds | NOAEL 1,500 mg/kg/day | prematuring into lactation |
| ISOPENTANE | Ingestion | Not classified for development | Rat | NOAEL 1,000 mg/kg/day | during organogenesis |
| ISOPENTANE | Inhalation | Not classified for development | Rat | NOAEL 30 mg/l | during organogenesis |

Target Organ(s)

Specific Target Organ Toxicity - single exposure

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|---|------------|-----------------------------------|--|---------|---------------------|-------------------|
| ISOPHORONE DIAMINE | Inhalation | respiratory irritation | May cause respiratory irritation | Rat | LOAEL 0.002 mg/l | 2 weeks |
| BENZYL ALCOHOL | Inhalation | central nervous system depression | May cause drowsiness or dizziness | | NOAEL Not available | |
| BENZYL ALCOHOL | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | | NOAEL Not available | |
| BENZYL ALCOHOL | Ingestion | central nervous system depression | May cause drowsiness or dizziness | | NOAEL Not available | |
| TRIS(2,4,6-DIMETHYLAMINOMONOMETHYL)PHENOL | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | | NOAEL Not available | |

| | | | | | | |
|--------------|------------|-----------------------------------|--|-------------------------|---------------------|---------------|
| LIMESTONE | Inhalation | respiratory system | Not classified | Rat | NOAEL 0.812 mg/l | 90 minutes |
| CALCIUM SALT | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | similar health hazards | NOAEL Not available | |
| ISOPENTANE | Inhalation | central nervous system depression | May cause drowsiness or dizziness | Multiple animal species | NOAEL Not available | not available |
| ISOPENTANE | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | Not available | NOAEL Not available | not available |
| ISOPENTANE | Inhalation | cardiac sensitization | Not classified | Dog | NOAEL Not available | not available |
| ISOPENTANE | Ingestion | central nervous system depression | May cause drowsiness or dizziness | Professional judgement | NOAEL Not available | not available |

Specific Target Organ Toxicity - repeated exposure

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|---|------------|---|----------------|-------------------|-----------------------|-----------------------|
| ISOPHORONE DIAMINE | Ingestion | hematopoietic system liver kidney and/or bladder | Not classified | Rat | NOAEL 160 mg/kg/day | 13 weeks |
| BENZYL ALCOHOL | Ingestion | endocrine system muscles kidney and/or bladder | Not classified | Rat | NOAEL 400 mg/kg/day | 13 weeks |
| BENZYL ALCOHOL | Ingestion | nervous system respiratory system | Not classified | Mouse | NOAEL 645 mg/kg/day | 8 days |
| GLASS BUBBLES | Inhalation | respiratory system | Not classified | Human | NOAEL not available | occupational exposure |
| TRIS(2,4,6-DIMETHYLAMINOMONOMETHYL)PHENOL | Dermal | skin liver nervous system auditory system hematopoietic system eyes | Not classified | Rat | NOAEL 125 mg/kg/day | 28 days |
| LIMESTONE | Inhalation | respiratory system | Not classified | Human | NOAEL Not available | occupational exposure |
| CALCIUM SALT | Ingestion | heart skin endocrine system bone, teeth, nails, and/or hair hematopoietic system liver immune system nervous system eyes kidney and/or bladder respiratory system vascular system | Not classified | similar compounds | NOAEL 1,500 mg/kg/day | 28 days |
| ISOPENTANE | Inhalation | peripheral nervous system | Not classified | Human | NOAEL Not available | occupational exposure |
| ISOPENTANE | Inhalation | heart skin endocrine system bone, teeth, nails, and/or hair hematopoietic system liver immune system muscles nervous system eyes kidney and/or bladder respiratory system | Not classified | Rat | NOAEL 20 mg/l | 13 weeks |
| ISOPENTANE | Ingestion | kidney and/or bladder | Not classified | Rat | NOAEL 2,000 | 28 days |

| | | | | | | |
|--|--|--|--|--|-----------|--|
| | | | | | mg/kg/day | |
|--|--|--|--|--|-----------|--|

Aspiration Hazard

| Name | Value |
|------------|-------------------|
| ISOPENTANE | 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): D002 (Corrosive)

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 - Yes Immediate Hazard - Yes Delayed Hazard - No

EPCRA 311/312 Hazard Classifications (effective January 1, 2018):**Physical Hazards**

Corrosive to metal

Health Hazards

Acute toxicity

Hazard Not Otherwise Classified (HNOC)

Respiratory or Skin Sensitization

Serious eye damage or eye irritation

Skin Corrosion or Irritation

Specific target organ toxicity (single or repeated exposure)

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> |
|--|------------------|----------------|
| CALCIUM SALT (NITRATE COMPOUNDS (WATER DISSOCIABLE; REPORTABLE ONLY WHEN IN AQUEOUS SOLUTION)) | 13477-34-4 | 1 - 10 |

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:** 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.

| | | | |
|------------------------|-----------|-------------------------|----------|
| Document Group: | 29-1913-2 | Version Number: | 4.03 |
| Issue Date: | 05/08/17 | Supersedes Date: | 04/26/17 |

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Safety Data Sheet

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| | | | |
|------------------------|-----------|-------------------------|----------|
| Document Group: | 29-1912-4 | Version Number: | 5.00 |
| Issue Date: | 11/13/18 | Supersedes Date: | 08/14/18 |

SECTION 1: Identification

1.1. Product identifier

3M™ Scotch-Weld™ Structural Void Filling Compound EC-3505 B/A FR, Part B

Product Identification Numbers

LC-B100-1077-5, LC-B100-0904-7, LC-B100-0904-8, 87-2500-0458-4, 87-2500-0485-7
7100141412, 7100181030

1.2. Recommended use and restrictions on use

Recommended use

Base for two component void filling compound

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

Serious Eye Damage/Irritation: Category 2A.

Skin Corrosion/Irritation: Category 2.

Skin Sensitizer: Category 1A.

Carcinogenicity: Category 2.

2.2. Label elements

Signal word

Warning

Symbols

Exclamation mark | Health Hazard |

Pictograms**Hazard Statements**

Causes serious eye irritation.
 Causes skin irritation.
 May cause an allergic skin reaction.
 Suspected of causing cancer.

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 and eye/face protection.
 Wash thoroughly after handling.
 Contaminated work clothing must not be allowed out of the workplace.

Response:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 If eye irritation persists: Get medical advice/attention.
 IF ON SKIN: Wash with plenty of soap and water.
 If skin irritation or rash occurs: Get medical advice/attention.
 Take off contaminated clothing and wash it 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.

1% of the mixture consists of ingredients of unknown acute oral toxicity.

1% of the mixture consists of ingredients of unknown acute dermal toxicity.

SECTION 3: Composition/information on ingredients

| Ingredient | C.A.S. No. | % by Wt |
|---|---------------|------------------------|
| EPICHLOROHYDRIN-PHENOL-FORMALDEHYDE RESIN | 9003-36-5 | 20 - 40 Trade Secret * |
| EPOXY DILUENT | 14228-73-0 | 10 - 30 Trade Secret * |
| GLASS BUBBLES | 65997-17-3 | 10 - 30 |
| EPOXY RESIN | 25068-38-6 | 1 - 15 Trade Secret * |
| GRAPHITE | 7782-42-5 | 1 - 15 |
| PHENOL-FORMALDEHYDE POLYMER | 28064-14-4 | 1 - 15 Trade Secret * |
| LIMESTONE | 1317-65-3 | 1 - 10 |
| PHOSPHOROUS | 7723-14-0 | <= 10 Trade Secret * |
| PHOSPHORIC ACID POLYESTER | Trade Secret* | 0.1 - 5 |

| | | |
|---------------|-----------|------------------------|
| SILANE | 2530-83-8 | 0.1 - 3 Trade Secret * |
| Sulfuric Acid | 7664-93-9 | <= 1.5 Trade Secret * |
| Nickel | 7440-02-0 | < 0.6 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:

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:

Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. 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

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

Hazardous Decomposition or By-Products

Substance

Aldehydes
Carbon monoxide
Carbon dioxide
Hydrogen Chloride
Oxides of Sulfur

Condition

During Combustion
During Combustion
During Combustion
During Combustion
During Combustion

5.3. Special protective actions for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. 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. 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. 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

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 in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid skin contact with hot material. For industrial/occupational use only. Not for consumer sale or use. 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. 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 |
|--|------------|--------|---|--------------------------------|
| LIMESTONE | 1317-65-3 | OSHA | TWA(as total dust):15 mg/m ³ ;TWA(respirable fraction):5 mg/m ³ | |
| Nickel | 7440-02-0 | ACGIH | TWA(inhalable fraction):1.5 mg/m ³ | A5: Not suspected human carcin |
| Nickel | 7440-02-0 | OSHA | TWA(as Ni):1 mg/m ³ | |
| STRONG INORGANIC ACID MISTS CONTAINING SULFURIC ACID | 7664-93-9 | ACGIH | Limit value not established: | A2: Suspected human carcin. |
| Sulfuric Acid | 7664-93-9 | ACGIH | TWA(thoracic fraction):0.2 mg/m ³ | |
| Sulfuric Acid | 7664-93-9 | OSHA | TWA:1 mg/m ³ | |
| PHOSPHOROUS | 7723-14-0 | OSHA | TWA:0.1 mg/m ³ | |

| | | | | |
|-------------------------|-----------|-------|---|--|
| DUST, INERT OR NUISANCE | 7782-42-5 | OSHA | TWA(as total dust):15 mg/m3;TWA(as total dust):50 millions of particles/cu. ft.(15 mg/m3);TWA(respirable fraction):15 millions of particles/cu. ft.(5 mg/m3);TWA(respirable fraction):5 mg/m3 | |
| GRAPHITE | 7782-42-5 | ACGIH | TWA(respirable fraction):2 mg/m3 | |
| GRAPHITE | 7782-42-5 | OSHA | TWA:15 millions of particles/cu. ft. | |
| GRAPHITE SYNTHETIC | 7782-42-5 | OSHA | TWA(as total dust):15 mg/m3;TWA(respirable fraction):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.

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:
 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. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.
 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

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.

Thermal hazards

Wear heat insulating gloves when handling hot material to prevent thermal burns.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|--|
| General Physical Form: | Liquid |
| Specific Physical Form: | Paste |
| Odor, Color, Grade: | Brown; low odor |
| Odor threshold | <i>No Data Available</i> |
| pH | <i>No Data Available</i> |
| Melting point | <i>Not Applicable</i> |
| Boiling Point | <i>Not Applicable</i> |
| Flash Point | ≥200 °F [<i>Test Method: Closed Cup</i>] |
| Evaporation rate | <i>Not Applicable</i> |
| Flammability (solid, gas) | <i>Not Applicable</i> |
| Flammable Limits(LEL) | <i>No Data Available</i> |
| Flammable Limits(UEL) | <i>No Data Available</i> |
| Vapor Pressure | <i>Not Applicable</i> |
| Vapor Density | <i>Not Applicable</i> |
| Density | 0.5 - 0.6 g/cm ³ |
| Specific Gravity | 0.53 [<i>Ref Std: WATER=1</i>] |
| Solubility in Water | Negligible |
| Solubility- non-water | <i>No Data Available</i> |
| Partition coefficient: n-octanol/ water | <i>No Data Available</i> |
| Autoignition temperature | <i>No Data Available</i> |
| Decomposition temperature | <i>No Data Available</i> |
| Viscosity | <i>No Data Available</i> |
| Hazardous Air Pollutants | <i>No Data Available</i> |
| Percent volatile | Negligible |

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
Heat is generated during cure. Do not cure a mass larger than 50 grams in a confined space to prevent a premature exothermic reaction with production of intense heat and smoke.

10.5. Incompatible materials

Amines

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.

Dust from cutting, grinding, sanding or machining may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

Skin Contact:

Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain.

Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye Contact:

Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Dust created by cutting, grinding, sanding, or machining may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Additional Health Effects:**Carcinogenicity:**

Contains a chemical or chemicals which can cause cancer.

| <u>Ingredient</u> | <u>CAS No.</u> | <u>Class Description</u> | <u>Regulation</u> |
|--------------------------|-----------------------|---------------------------------|---|
| Nickel | 7440-02-0 | Grp. 2B: Possible human carc. | International Agency for Research on Cancer |
| Nickel | 7440-02-0 | Anticipated human carcinogen | National Toxicology Program Carcinogens |

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 |
| EPICHLOROHYDRIN-PHENOL-FORMALDEHYDE RESIN | Dermal | Rabbit | LD50 > 2,000 mg/kg |
| EPICHLOROHYDRIN-PHENOL-FORMALDEHYDE RESIN | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 1.7 mg/l |
| EPICHLOROHYDRIN-PHENOL-FORMALDEHYDE RESIN | Ingestion | Rat | LD50 > 5,000 mg/kg |
| GLASS BUBBLES | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| GLASS BUBBLES | Ingestion | | LD50 estimated to be 2,000 - 5,000 mg/kg |
| EPOXY DILUENT | Dermal | Rabbit | LD50 > 2,000 mg/kg |
| EPOXY DILUENT | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 5.19 mg/l |
| EPOXY DILUENT | Ingestion | Rat | LD50 1,098 mg/kg |
| EPOXY RESIN | Dermal | Rat | LD50 > 1,600 mg/kg |
| EPOXY RESIN | Ingestion | Rat | LD50 > 1,000 mg/kg |
| PHENOL-FORMALDEHYDE POLYMER | Dermal | Rabbit | LD50 > 6,000 mg/kg |
| PHENOL-FORMALDEHYDE POLYMER | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 1.7 mg/l |
| PHENOL-FORMALDEHYDE POLYMER | Ingestion | Rat | LD50 > 4,000 mg/kg |
| GRAPHITE | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| GRAPHITE | Ingestion | Rat | LD50 > 2,000 mg/kg |
| PHOSPHOROUS | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| PHOSPHOROUS | Inhalation-Dust/Mist (4 hours) | Rat | LC50 1.1 mg/l |
| PHOSPHOROUS | Ingestion | Rat | LD50 > 15,000 mg/kg |
| LIMESTONE | Dermal | Rat | LD50 > 2,000 mg/kg |
| LIMESTONE | Inhalation-Dust/Mist (4 hours) | Rat | LC50 3 mg/l |
| LIMESTONE | Ingestion | Rat | LD50 6,450 mg/kg |
| SILANE | Dermal | Rabbit | LD50 4,000 mg/kg |
| SILANE | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 5.3 mg/l |
| SILANE | Ingestion | Rat | LD50 7,010 mg/kg |
| Nickel | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| Nickel | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 2.55 mg/l |
| Nickel | Ingestion | Rat | LD50 > 9,000 mg/kg |

ATE = acute toxicity estimate

Skin Corrosion/Irritation

| Name | Species | Value |
|---|------------------------|---------------------------|
| EPICHLOROHYDRIN-PHENOL-FORMALDEHYDE RESIN | Rabbit | Mild irritant |
| GLASS BUBBLES | Professional judgement | No significant irritation |
| EPOXY DILUENT | In vitro data | Irritant |
| EPOXY RESIN | Rabbit | Mild irritant |
| PHENOL-FORMALDEHYDE POLYMER | Rabbit | Minimal irritation |
| GRAPHITE | Rabbit | No significant irritation |
| LIMESTONE | Rabbit | No significant irritation |
| SILANE | Rabbit | Mild irritant |

| | | |
|--------|--------|--------------------|
| Nickel | Rabbit | Minimal irritation |
|--------|--------|--------------------|

Serious Eye Damage/Irritation

| Name | Species | Value |
|---|------------------------|---------------------------|
| EPICHLOROHYDRIN-PHENOL-FORMALDEHYDE RESIN | Rabbit | No significant irritation |
| GLASS BUBBLES | Professional judgement | No significant irritation |
| EPOXY DILUENT | In vitro data | No significant irritation |
| EPOXY RESIN | Rabbit | Moderate irritant |
| PHENOL-FORMALDEHYDE POLYMER | Rabbit | Mild irritant |
| GRAPHITE | Rabbit | No significant irritation |
| LIMESTONE | Rabbit | No significant irritation |
| SILANE | Rabbit | Corrosive |
| Nickel | Rabbit | Mild irritant |

Skin Sensitization

| Name | Species | Value |
|---|-------------------------|----------------|
| EPICHLOROHYDRIN-PHENOL-FORMALDEHYDE RESIN | Multiple animal species | Sensitizing |
| EPOXY DILUENT | Mouse | Sensitizing |
| EPOXY RESIN | Human and animal | Sensitizing |
| PHENOL-FORMALDEHYDE POLYMER | Human and animal | Sensitizing |
| SILANE | Guinea pig | Not classified |
| Nickel | Human | Sensitizing |

Respiratory Sensitization

| Name | Species | Value |
|-------------|---------|----------------|
| EPOXY RESIN | Human | Not classified |

Germ Cell Mutagenicity

| Name | Route | Value |
|-----------------------------|----------|--|
| GLASS BUBBLES | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| EPOXY DILUENT | In vivo | Not mutagenic |
| EPOXY DILUENT | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| EPOXY RESIN | In vivo | Not mutagenic |
| EPOXY RESIN | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| PHENOL-FORMALDEHYDE POLYMER | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| GRAPHITE | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| SILANE | In vivo | Not mutagenic |
| SILANE | In Vitro | Some positive data exist, but the data are not sufficient for classification |

Carcinogenicity

| Name | Route | Species | Value |
|---------------|------------|-----------------|--|
| GLASS BUBBLES | Inhalation | Multiple animal | Some positive data exist, but the data are not sufficient for classification |

| | | | |
|-------------|------------|-------------------|--|
| EPOXY RESIN | Dermal | Mouse | Some positive data exist, but the data are not sufficient for classification |
| SILANE | Dermal | Mouse | Not carcinogenic |
| Nickel | Inhalation | similar compounds | Carcinogenic |

Reproductive Toxicity

Reproductive and/or Developmental Effects

| Name | Route | Value | Species | Test Result | Exposure Duration |
|---------------|-----------|--|---------|-----------------------|--------------------------------|
| EPOXY DILUENT | Ingestion | Not classified for female reproduction | Rat | NOAEL 300 mg/kg/day | prematuring into lactation |
| EPOXY DILUENT | Ingestion | Not classified for male reproduction | Rat | NOAEL 300 mg/kg/day | 33 days |
| EPOXY DILUENT | Ingestion | Not classified for development | Rat | NOAEL 300 mg/kg/day | prematuring into lactation |
| 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 |
| LIMESTONE | Ingestion | Not classified for development | Rat | NOAEL 625 mg/kg/day | prematuring & during gestation |
| SILANE | Ingestion | Not classified for female reproduction | Rat | NOAEL 1,000 mg/kg/day | 1 generation |
| SILANE | Ingestion | Not classified for male reproduction | Rat | NOAEL 1,000 mg/kg/day | 1 generation |
| SILANE | 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 |
|---------------|------------|------------------------|--|------------------------|---------------------|-------------------|
| EPOXY DILUENT | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | similar health hazards | NOAEL Not available | |
| LIMESTONE | Inhalation | respiratory system | Not classified | Rat | NOAEL 0.812 mg/l | 90 minutes |

Specific Target Organ Toxicity - repeated exposure

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|---------------|------------|---|----------------|---------|---------------------|-----------------------|
| GLASS BUBBLES | Inhalation | respiratory system | Not classified | Human | NOAEL not available | occupational exposure |
| EPOXY DILUENT | Ingestion | endocrine system gastrointestinal tract liver heart hematopoietic system immune system nervous system kidney and/or bladder | Not classified | Rat | NOAEL 300 mg/kg/day | 33 days |
| EPOXY RESIN | Dermal | liver | Not classified | Rat | NOAEL 1,000 | 2 years |

| | | | | | mg/kg/day | |
|-------------|------------|---|--|-------|-----------------------------|-----------------------|
| 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 |
| GRAPHITE | Inhalation | pneumoconiosis | Not classified | Human | NOAEL Not available | occupational exposure |
| LIMESTONE | Inhalation | respiratory system | Not classified | Human | NOAEL Not available | occupational exposure |
| SILANE | 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 |
| Nickel | Inhalation | respiratory system | Causes damage to organs through prolonged or repeated exposure | Rat | LOAEL 0.001 mg/l | 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 waste product in a permitted industrial waste facility. 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

Carcinogenicity

Respiratory or Skin Sensitization

Serious eye damage or eye irritation

Skin Corrosion or Irritation

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> |
|-------------------------------|------------------|---------------------|
| PHOSPHOROUS | 7723-14-0 | Trade Secret <= 10 |
| Sulfuric Acid | 7664-93-9 | Trade Secret <= 1.5 |
| Sulfuric Acid (Sulfuric acid) | 7664-93-9 | <= 1.5 |
| Nickel | 7440-02-0 | Trade Secret < 0.6 |
| Nickel (Nickel) | 7440-02-0 | < 0.6 |

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: 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: 29-1912-4 Version Number: 5.00

Issue Date: 11/13/18**Supersedes Date:** 08/14/18

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