



Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the Canadian Hazardous Products Regulations.

SECTION 1: Identification

1.1. Product identifier

3M™ Scotch-Weld™ Epoxy Adhesive 2290, Amber

Product Identification Numbers

| | | | | |
|----------------|----------------|----------------|----------------|----------------|
| 62-3847-5530-2 | 62-3847-7530-0 | 62-3847-7535-9 | 62-3847-8530-9 | 62-3847-8531-7 |
| 62-3847-9530-8 | JS-3000-5098-1 | JS-3000-5099-9 | JS-3000-5130-2 | |

1.2. Recommended use and restrictions on use

Intended Use

Industrial use

Restrictions on use

Not applicable

1.3. Supplier's details

| | |
|-------------------|--|
| Company: | 3M Canada Company |
| Division: | Industrial Adhesives and Tapes Division |
| Address: | 1840 Oxford Street East, Post Office Box 5757, London, Ontario N6A 4T1 |
| Telephone: | (800) 364-3577 |
| Website: | www.3M.ca |

1.4. Emergency telephone number

Medical Emergency Telephone: 1-800-3M HELPS / 1800 364 3577

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Flammable Liquid: Category 2.
Serious Eye Damage/Irritation: Category 1.
Skin Sensitizer: Category 1.
Reproductive Toxicity: Category 1B.
Carcinogenicity: Category 2.
Germ Cell Mutagenicity: Category 2.
Specific Target Organ Toxicity (single exposure): Category 3.

2.2. Label elements**Signal word**

Danger

Symbols

Flame | Corrosion | Exclamation mark | Health Hazard |

Pictograms**Hazard statements**

Highly flammable liquid and vapour.

Causes serious eye damage. May cause an allergic skin reaction. May cause drowsiness or dizziness. May damage fertility or the unborn child. Suspected of causing cancer. 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. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond container and receiving equipment. Use non-sparking tools. Take action to prevent static discharges. Keep container tightly closed. Use explosion-proof electrical/ventilating/lighting equipment. Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Wear protective gloves and eye/face protection. 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 or 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 CENTRE or doctor/physician. 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. In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

Storage:

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

Disposal:

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

2.3. Other hazards

None known.

4% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

This material is a mixture.

| Ingredient | C.A.S. No. | % by Wt | Common Name |
|---------------------|------------|------------------------|--|
| Methyl Ethyl Ketone | 78-93-3 | 45 - 70 Trade Secret * | 2-Butanone |
| Epoxy Resin | 25068-38-6 | 10 - 30 Trade Secret * | Phenol, 4,4'-(1-methylethylidene)bis-, |

| | | | |
|--------------------------|-----------|------------------------|---|
| | | | polymer with (chloromethyl)oxirane |
| Tetrahydrofuran | 109-99-9 | 10 - 30 Trade Secret * | Furan, tetrahydro- |
| phenoxy resin | 5026-74-4 | 3 - 7 Trade Secret * | Oxiranemethanamine, N-[4-(oxiranymethoxy)phenyl]-N-(oxiranymethyl)- |
| 1-Methyl-2-Pyrrolidinone | 872-50-4 | 1 - 5 Trade Secret * | 2-Pyrrolidinone, 1-methyl- |
| toluene | 108-88-3 | < 0.4 | No Data Available |

*The actual concentration of this ingredient 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 for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately 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

Allergic skin reaction (redness, swelling, blistering, and itching). Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of vision). Central nervous system depression (headache, dizziness, drowsiness, incoordination, nausea, slurred speech, giddiness, and unconsciousness).

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 flammable liquids such as dry chemical or carbon dioxide to extinguish.

5.2. Unsuitable extinguishing media

None Determined

5.3. 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
Hydrocarbons
Carbon monoxide
Carbon dioxide
Hydrogen Chloride
Hydrogen Cyanide
Ketones

Condition

During Combustion
During Combustion
During Combustion
During Combustion
During Combustion
During Combustion
During Combustion

Oxides of Nitrogen

During Combustion

5.4. Special protection 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. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapours, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapours 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. Cover spill area with a fire-extinguishing foam. 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 using non-sparking tools. Place in a metal 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**

For industrial or professional use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapours/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.) Wear low static or properly grounded shoes. Use personal protective equipment (gloves, respirators, etc.) as required. To minimize the risk of ignition, determine applicable electrical classifications for the process using this product and select specific local exhaust ventilation equipment to avoid flammable vapor accumulation. Ground/bond container and receiving equipment if there is potential for static electricity accumulation during transfer.

7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store away from heat. 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 |
|--------------------------|-------------------|---------------|---|--------------------------------|
| toluene | 108-88-3 | ACGIH | TWA:20 ppm | |
| Tetrahydrofuran | 109-99-9 | ACGIH | TWA:50 ppm;STEL:100 ppm | Danger of cutaneous absorption |
| Methyl Ethyl Ketone | 78-93-3 | ACGIH | TWA:75 ppm;STEL:150 ppm | Danger of cutaneous absorption |
| 1-Methyl-2-Pyrrolidinone | 872-50-4 | AIHA | TWA:60 mg/m ³ (15 ppm);STEL(15 minutes):120 mg/m ³ (30 ppm) | SKIN |

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

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/vapours/spray. If ventilation is not adequate, use respiratory protection equipment. Use explosion-proof ventilation 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. 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 vapours and particulates

Half facepiece or full facepiece supplied-air respirator

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

| | |
|---|--|
| Physical state | Liquid |
| Colour | Clear Yellow |
| Odour | Moderate Ketones |
| Odour threshold | No Data Available |
| pH | No Data Available |
| Melting point/Freezing point | No Data Available |
| Boiling point | 66.1 °C [Details:CONDITIONS: THF] |
| Flash Point | -14.4 °C [Test Method:Tagliabue Closed Cup] |
| Evaporation rate | >=2 [Ref Std:ETHER=1] |
| Flammability | Flammable Liquid: Category 2. |
| Flammable Limits(LEL) | 2 % volume |
| Flammable Limits(UEL) | 11.8 % volume |
| Vapour Pressure | 19,331.7 Pa [Details:CONDITIONS: @ 68F] |
| Vapour Density and/or Relative Vapour Density | 2.5 [Ref Std:AIR=1] |
| Density | 0.89 g/ml |
| Relative density | 0.89 [Ref Std:WATER=1] |
| Water solubility | Slight (less than 10%) |
| Solubility- non-water | No Data Available |
| Partition coefficient: n-octanol/ water | No Data Available |
| Autoignition temperature | No Data Available |
| Decomposition temperature | No Data Available |
| Kinematic Viscosity | 75.8 mm2/sec |
| Volatile Organic Compounds | No Data Available |
| Percent volatile | No Data Available |
| VOC Less H2O & Exempt Solvents | 701 g/l [Test Method:calculated SCAQMD rule 443.1] |
| VOC Less H2O & Exempt Solvents | 78.8 % [Test Method:calculated per CARB title 2] |
| Molecular weight | No Data Available |

| | |
|--------------------------|----------------|
| Particle Characteristics | Not Applicable |
|--------------------------|----------------|

SECTION 10: Stability and reactivity**10.1. Reactivity**

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat
Sparks and/or flames

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. May cause additional health effects (see below).

Skin Contact:

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching. May cause additional health effects (see below).

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:

May be harmful if swallowed. Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea. May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:

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

Reproductive/Developmental Toxicity:

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

Genotoxicity:

Genotoxicity and Mutagenicity: May interact with genetic material and possibly alter gene expression.

Carcinogenicity:

Contains a chemical or chemicals which can cause cancer.

| Ingredient | CAS No. | Class Description | Regulation |
|-----------------|----------|-------------------------------|---|
| Tetrahydrofuran | 109-99-9 | Grp. 2B: Possible human carc. | International Agency for Research on Cancer |

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 | Inhalation-Vapor(4 hr) | | No data available; calculated ATE >50 mg/l |
| Overall product | Ingestion | | No data available; calculated ATE >2,000 - =5,000 mg/kg |
| Methyl Ethyl Ketone | Dermal | Rabbit | LD50 > 8,050 mg/kg |
| Methyl Ethyl Ketone | Inhalation-Vapor (4 hours) | Rat | LC50 34.5 mg/l |
| Methyl Ethyl Ketone | Ingestion | Rat | LD50 2,737 mg/kg |
| Tetrahydrofuran | Dermal | Rat | LD50 > 2,000 mg/kg |
| Tetrahydrofuran | Inhalation-Vapor (4 hours) | Rat | LC50 54 mg/l |
| Tetrahydrofuran | Ingestion | Rat | LD50 1,650 mg/kg |
| Epoxy Resin | Dermal | Rat | LD50 > 1,600 mg/kg |
| Epoxy Resin | Ingestion | Rat | LD50 > 1,000 mg/kg |
| phenoxy resin | Dermal | Rabbit | LD50 > 4,000 mg/kg |
| phenoxy resin | Ingestion | Rat | LD50 500-5000 mg/kg |
| 1-Methyl-2-Pyrrolidinone | Dermal | Rabbit | LD50 4,000 mg/kg |
| 1-Methyl-2-Pyrrolidinone | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 5.1 mg/l |
| 1-Methyl-2-Pyrrolidinone | Ingestion | Rat | LD50 4,320 mg/kg |
| toluene | Dermal | Rat | LD50 12,000 mg/kg |
| toluene | Inhalation-Vapor (4 hours) | Rat | LC50 30 mg/l |
| toluene | Ingestion | Rat | LD50 5,550 mg/kg |

ATE = acute toxicity estimate

Skin Corrosion/Irritation

| Name | Species | Value |
|--------------------------|---------|--------------------|
| Methyl Ethyl Ketone | Rabbit | Minimal irritation |
| Tetrahydrofuran | Rabbit | Minimal irritation |
| Epoxy Resin | Rabbit | Mild irritant |
| phenoxy resin | Rabbit | Irritant |
| 1-Methyl-2-Pyrrolidinone | Rabbit | Minimal irritation |
| toluene | Rabbit | Irritant |

Serious Eye Damage/Irritation

| Name | Species | Value |
|--------------------------|---------|-------------------|
| Methyl Ethyl Ketone | Rabbit | Severe irritant |
| Tetrahydrofuran | Rabbit | Corrosive |
| Epoxy Resin | Rabbit | Moderate irritant |
| phenoxy resin | Rabbit | Severe irritant |
| 1-Methyl-2-Pyrrolidinone | Rabbit | Severe irritant |
| toluene | Rabbit | Moderate irritant |

Skin Sensitization

| Name | Species | Value |
|-----------------|------------------|----------------|
| Tetrahydrofuran | Human and animal | Not classified |
| Epoxy Resin | Human and animal | Sensitizing |
| phenoxy resin | Guinea | Sensitizing |

| | | |
|--------------------------|------------------|----------------|
| | pig | |
| 1-Methyl-2-Pyrrolidinone | Human and animal | Not classified |
| toluene | Guinea pig | Not classified |

Respiratory Sensitization

| Name | Species | Value |
|-------------|---------|----------------|
| Epoxy Resin | Human | Not classified |

Germ Cell Mutagenicity

| Name | Route | Value |
|--------------------------|----------|--|
| Methyl Ethyl Ketone | In Vitro | Not mutagenic |
| Tetrahydrofuran | In Vitro | Not mutagenic |
| Tetrahydrofuran | In vivo | Not mutagenic |
| Epoxy Resin | In vivo | Not mutagenic |
| Epoxy Resin | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| phenoxy resin | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| phenoxy resin | In vivo | Mutagenic |
| 1-Methyl-2-Pyrrolidinone | In vivo | Not mutagenic |
| 1-Methyl-2-Pyrrolidinone | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| toluene | In Vitro | Not mutagenic |
| toluene | In vivo | Not mutagenic |

Carcinogenicity

| Name | Route | Species | Value |
|--------------------------|------------|-------------------------|--|
| Methyl Ethyl Ketone | Inhalation | Human | Not carcinogenic |
| Tetrahydrofuran | Inhalation | Multiple animal species | Carcinogenic |
| Epoxy Resin | Dermal | Mouse | Some positive data exist, but the data are not sufficient for classification |
| 1-Methyl-2-Pyrrolidinone | Inhalation | Rat | Not carcinogenic |
| toluene | Dermal | Mouse | Some positive data exist, but the data are not sufficient for classification |
| toluene | Ingestion | Rat | Some positive data exist, but the data are not sufficient for classification |
| toluene | Inhalation | 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 |
|---------------------|------------|--|---------|---------------------|-------------------|
| Methyl Ethyl Ketone | Inhalation | Not classified for development | Rat | LOAEL 8.8 mg/l | during gestation |
| Tetrahydrofuran | Ingestion | Not classified for female reproduction | Rat | NOAEL 782 mg/kg/day | 2 generation |
| Tetrahydrofuran | Ingestion | Not classified for male reproduction | Rat | NOAEL 782 mg/kg/day | 2 generation |
| Tetrahydrofuran | Ingestion | Not classified for development | Rat | NOAEL 305 mg/kg/day | 2 generation |
| Tetrahydrofuran | Inhalation | Not classified for development | Mouse | NOAEL 1.8 mg/l | during gestation |
| 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 | 2 generation |

| | | | | | |
|--------------------------|------------|--|--------|----------------------------------|------------------------|
| Epoxy Resin | Dermal | Not classified for development | Rabbit | mg/kg/day NOAEL 300 mg/kg/day | during organogenesis |
| Epoxy Resin | Ingestion | Not classified for development | Rat | NOAEL 750 mg/kg/day | 2 generation |
| 1-Methyl-2-Pyrrolidinone | Inhalation | Not classified for development | Rat | LOAEL 0.68 mg/l | during gestation |
| 1-Methyl-2-Pyrrolidinone | Ingestion | Toxic to female reproduction | Rat | LOAEL 50 mg/kg/day | 2 generation |
| 1-Methyl-2-Pyrrolidinone | Ingestion | Toxic to male reproduction | Rat | LOAEL 50 mg/kg/day | 2 generation |
| 1-Methyl-2-Pyrrolidinone | Dermal | Toxic to development | Rat | NOAEL 237 mg/kg/day | during organogenesis |
| 1-Methyl-2-Pyrrolidinone | Ingestion | Toxic to development | Rat | NOAEL 160 mg/kg/day | 2 generation |
| toluene | Inhalation | Not classified for female reproduction | Human | NOAEL Not available | occupational exposure |
| toluene | Inhalation | Not classified for male reproduction | Rat | NOAEL 2.3 mg/l | 1 generation |
| toluene | Ingestion | Toxic to development | Rat | LOAEL 520 mg/kg/day | during gestation |
| toluene | Inhalation | Toxic to development | Human | NOAEL Not available | poisoning and/or abuse |

Target Organ(s)

Specific Target Organ Toxicity - single exposure

| Name | Route | Target Organ(s) | Value | Species | Test result | Exposure Duration |
|--------------------------|------------|-----------------------------------|--|-------------------------|---------------------|------------------------|
| Methyl Ethyl Ketone | Inhalation | central nervous system depression | May cause drowsiness or dizziness | official classification | NOAEL Not available | |
| Methyl Ethyl Ketone | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | Human | NOAEL Not available | |
| Methyl Ethyl Ketone | Ingestion | central nervous system depression | May cause drowsiness or dizziness | Professional judgement | NOAEL Not available | |
| Methyl Ethyl Ketone | Ingestion | liver | Not classified | Rat | NOAEL Not available | not applicable |
| Methyl Ethyl Ketone | Ingestion | kidney and/or bladder | Not classified | Rat | LOAEL 1,080 mg/kg | not applicable |
| Tetrahydrofuran | Inhalation | central nervous system depression | May cause drowsiness or dizziness | Human | NOAEL Not available | |
| Tetrahydrofuran | Inhalation | respiratory irritation | May cause respiratory irritation | | NOAEL Not available | |
| Tetrahydrofuran | Inhalation | respiratory system | Not classified | Rabbit | NOAEL 2.9 mg/l | 4 hours |
| Tetrahydrofuran | Ingestion | central nervous system depression | May cause drowsiness or dizziness | Rat | NOAEL 180 mg/kg | not applicable |
| 1-Methyl-2-Pyrrolidinone | Inhalation | respiratory irritation | Not classified | Human | NOAEL 0.05 mg/l | 8 hours |
| toluene | Inhalation | central nervous system depression | May cause drowsiness or dizziness | Human | NOAEL Not available | |
| toluene | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | Human | NOAEL Not available | |
| toluene | Inhalation | immune system | Not classified | Mouse | NOAEL 0.004 mg/l | 3 hours |
| toluene | Ingestion | central nervous system depression | May cause drowsiness or dizziness | Human | NOAEL Not available | poisoning and/or abuse |

Specific Target Organ Toxicity - repeated exposure

3M™ Scotch-Weld™ Epoxy Adhesive 2290, Amber

| Name | Route | Target Organ(s) | Value | Species | Test result | Exposure Duration |
|--------------------------|------------|--|--|------------|-----------------------|------------------------|
| Methyl Ethyl Ketone | Dermal | nervous system | Not classified | Guinea pig | NOAEL Not available | 31 weeks |
| Methyl Ethyl Ketone | Inhalation | liver kidney and/or bladder heart endocrine system gastrointestinal tract bone, teeth, nails, and/or hair hematopoietic system immune system muscles | Not classified | Rat | NOAEL 14.7 mg/l | 90 days |
| Methyl Ethyl Ketone | Ingestion | liver | Not classified | Rat | NOAEL Not available | 7 days |
| Methyl Ethyl Ketone | Ingestion | nervous system | Not classified | Rat | NOAEL 173 mg/kg/day | 90 days |
| Tetrahydrofuran | Inhalation | liver | Some positive data exist, but the data are not sufficient for classification | Rat | NOAEL 0.6 mg/l | 12 weeks |
| Tetrahydrofuran | Inhalation | respiratory system | Not classified | Rat | NOAEL 2.9 mg/l | 12 weeks |
| Tetrahydrofuran | Inhalation | kidney and/or bladder | Not classified | Rat | NOAEL 0.6 mg/l | 105 weeks |
| Tetrahydrofuran | Ingestion | liver | Some positive data exist, but the data are not sufficient for classification | Rat | NOAEL Not available | 2 weeks |
| Epoxy Resin | Dermal | liver | Not classified | Rat | NOAEL 1,000 mg/kg/day | 2 years |
| Epoxy Resin | Dermal | nervous system | Not classified | Rat | NOAEL 1,000 mg/kg/day | 13 weeks |
| Epoxy Resin | Ingestion | auditory system heart endocrine system hematopoietic system liver eyes kidney and/or bladder | Not classified | Rat | NOAEL 1,000 mg/kg/day | 28 days |
| 1-Methyl-2-Pyrrolidinone | Inhalation | bone marrow immune system respiratory system | Some positive data exist, but the data are not sufficient for classification | Rat | NOAEL 0.5 mg/l | 4 weeks |
| 1-Methyl-2-Pyrrolidinone | Ingestion | endocrine system | Not classified | Rat | NOAEL 250 mg/kg/day | 90 days |
| 1-Methyl-2-Pyrrolidinone | Ingestion | kidney and/or bladder | Not classified | Rat | NOAEL 2,060 mg/kg/day | 4 weeks |
| 1-Methyl-2-Pyrrolidinone | Ingestion | nervous system | Not classified | Rat | NOAEL 1,057 mg/kg/day | 90 days |
| 1-Methyl-2-Pyrrolidinone | Ingestion | hematopoietic system | Not classified | Mouse | NOAEL 300 mg/kg/day | 90 days |
| 1-Methyl-2-Pyrrolidinone | Ingestion | liver | Not classified | Mouse | NOAEL 150 mg/kg/day | 3 months |
| toluene | Inhalation | auditory system nervous system eyes olfactory system | Causes damage to organs through prolonged or repeated exposure | Human | NOAEL Not available | poisoning and/or abuse |
| toluene | Inhalation | respiratory system | Some positive data exist, but the data are not sufficient for classification | Rat | LOAEL 2.3 mg/l | 15 months |
| toluene | Inhalation | heart liver kidney and/or bladder | Not classified | Rat | NOAEL 11.3 mg/l | 15 weeks |
| toluene | Inhalation | endocrine system | Not classified | Rat | NOAEL 1.1 mg/l | 4 weeks |
| toluene | Inhalation | immune system | Not classified | Mouse | NOAEL Not available | 20 days |

3M™ Scotch-Weld™ Epoxy Adhesive 2290, Amber

| | | | | | | |
|---------|------------|--|--|-------------------------|-----------------------|-----------------------|
| toluene | Inhalation | bone, teeth, nails, and/or hair | Not classified | Mouse | NOAEL 1.1 mg/l | 8 weeks |
| toluene | Inhalation | hematopoietic system vascular system | Not classified | Human | NOAEL Not available | occupational exposure |
| toluene | Inhalation | gastrointestinal tract | Not classified | Multiple animal species | NOAEL 11.3 mg/l | 15 weeks |
| toluene | Ingestion | nervous system | Some positive data exist, but the data are not sufficient for classification | Rat | NOAEL 625 mg/kg/day | 13 weeks |
| toluene | Ingestion | heart | Not classified | Rat | NOAEL 2,500 mg/kg/day | 13 weeks |
| toluene | Ingestion | liver kidney and/or bladder | Not classified | Multiple animal species | NOAEL 2,500 mg/kg/day | 13 weeks |
| toluene | Ingestion | hematopoietic system | Not classified | Mouse | NOAEL 600 mg/kg/day | 14 days |
| toluene | Ingestion | endocrine system | Not classified | Mouse | NOAEL 105 mg/kg/day | 28 days |
| toluene | Ingestion | immune system | Not classified | Mouse | NOAEL 105 mg/kg/day | 4 weeks |

Aspiration Hazard

| Name | Value |
|---------|-------------------|
| toluene | 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

No data available.

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. 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. Safety, health and environmental regulations/legislation specific for the substance or mixture****Global inventory status**

Contact 3M for more information. The components of this material are in compliance with the provisions of the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Japan Chemical Substance Control Law. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the new substance notification requirements of CEPA. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory. The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

SECTION 16: Other information

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.

Health: 3 Flammability: 3 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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3M Canada SDSs are available at www.3M.ca