



## Safety Data Sheet

Copyright, 2018, 3M Company.

All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that: (1) the information is copied in full with no changes unless prior written agreement is obtained from 3M, and (2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

|                        |           |                         |          |
|------------------------|-----------|-------------------------|----------|
| <b>Document Group:</b> | 10-5215-8 | <b>Version Number:</b>  | 27.02    |
| <b>Issue Date:</b>     | 01/12/18  | <b>Supersedes Date:</b> | 09/06/17 |

### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Thread Sealant 4291

#### Product Identification Numbers

62-4291-8551-5, CG-7901-0791-8, CT-0609-1066-9

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

##### Recommended use

Adhesive

#### 1.3. Supplier's details

|                      |  |
|----------------------|--|
| <b>MANUFACTURER:</b> | 3M   |
| <b>DIVISION:</b>     | 3M Canada<br>Automotive and Aerospace Solutions Division |
| <b>ADDRESS:</b>      | 3M Center, St. Paul, MN 55144-1000, USA                  |
| <b>Telephone:</b>    | 1-888-3M HELPS (1-888-364-3577)                          |

#### 1.4. Emergency telephone number

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

### SECTION 2: Hazard identification

#### 2.1. Hazard classification

Carcinogenicity: Category 1A.

Specific Target Organ Toxicity (repeated exposure): Category 1.

#### 2.2. Label elements

##### Signal word

Danger

##### Symbols

Health Hazard |

##### Pictograms

**Hazard Statements**

May cause cancer.

Causes damage to organs through prolonged or repeated exposure:  
respiratory system |

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

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Do not breathe dust/fume/gas/mist/vapors/spray.  
Wear protective gloves.  
Do not eat, drink or smoke when using this product.  
Wash thoroughly after handling.

**Response:**

IF exposed or concerned: Get medical advice/attention.

**Storage:**

Store locked up.

**Disposal:**

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

34% of the mixture consists of ingredients of unknown acute oral toxicity.

### SECTION 3: Composition/information on ingredients

| Ingredient  | C.A.S. No.    | % by Wt                |
|---|---------------|------------------------|
| WATER   | 7732-18-5     | 30 - 60                |
| ACRYLIC POLYMER   | Trade Secret* | 15 - 40                |
| MICA-GROUP MINERALS                                     | 12001-26-2    | 10 - 30 Trade Secret * |
| POLYTETRAFLUOROETHYLENE                                 | 9002-84-0     | 5 - 10                 |
| TITANIUM DIOXIDE  | 13463-67-7    | 5 - 10 Trade Secret *  |
| Hydrotreated heavy naphthenic petroleum distillates     | 64742-52-5    | 1 - 5                  |
| Solvent dewaxed heavy paraffinic distillate (petroleum) | 64742-65-0    | 1 - 5 Trade Secret *   |
| Quartz Silica   | 14808-60-7    | < 1 Trade Secret *     |
| Formaldehyde  | 50-00-0       | < 0.05                 |

\*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

### SECTION 4: First aid measures

**4.1. Description of first aid measures****Inhalation:**

Remove person to fresh air. If you feel unwell, get medical attention.

**Skin Contact:**

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

**Eye Contact:**

Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.

**If Swallowed:**

Rinse mouth. If you feel unwell, get medical attention.

**4.2. Most important symptoms and effects, both acute and delayed**

See Section 11.1. Information on toxicological effects.

**4.3. Indication of any immediate medical attention and special treatment required**

Not applicable

**SECTION 5: Fire-fighting measures****5.1. Suitable extinguishing media**

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

**5.2. Special hazards arising from the substance or mixture**

Exposure to extreme heat can give rise to thermal decomposition.

**Hazardous Decomposition or By-Products****Substance**

Carbonyl Fluoride  
Carbon monoxide  
Carbon dioxide  
Hydrogen Fluoride  
Perfluoroisobutylene (PFIB)

**Condition**

During Combustion  
During Combustion  
During Combustion  
During Combustion  
During Combustion

**5.3. Special protective actions for fire-fighters**

When fire fighting conditions are severe and total thermal decomposition of the product is possible, 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.

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

Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). 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

Do not breathe thermal decomposition products. For industrial or professional use only. Store work clothes separately from other clothing, food and tobacco products. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. No smoking: Smoking while using this product can result in contamination of the tobacco and/or smoke and lead to the formation of hazardous decomposition products. Use personal protective equipment (gloves, respirators, etc.) as required. May form combustible dust during processing. Dust clouds of this material in sufficient concentration in combination with an ignition source may be explosive. Dust deposits should not be allowed to accumulate on surfaces because of the potential for secondary explosions. Routine housekeeping should be instituted to ensure that combustible dusts do not accumulate on surfaces.

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

No special storage requirements.

## 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                                |
|-------------------------|------------|--------|--|--|
| MICA-GROUP MINERALS     | 12001-26-2 | OSHA   | TWA:20 millions of particles/cu. ft.   |  |
| DUST, INERT OR NUISANCE | 12001-26-2 | OSHA   | TWA(as total dust):15 mg/m <sup>3</sup> ;TWA(as total dust):50 millions of particles/cu. ft.(15 mg/m <sup>3</sup> );TWA(respirable fraction):15 millions of particles/cu. ft.(5 mg/m <sup>3</sup> );TWA(respirable fraction):5 mg/m <sup>3</sup> |  |
| MICA-GROUP MINERALS     | 12001-26-2 | ACGIH  | TWA(respirable fraction):3 mg/m <sup>3</sup>   |  |
| TITANIUM DIOXIDE        | 13463-67-7 | OSHA   | TWA(as total dust):15 mg/m <sup>3</sup>  |  |
| TITANIUM DIOXIDE        | 13463-67-7 | ACGIH  | TWA:10 mg/m <sup>3</sup>   | A4: Not class. as human carcin                     |
| Quartz Silica           | 14808-60-7 | OSHA   | TWA Table Z-1(respirable):0.05 mg/m <sup>3</sup> ;TWA Table Z-3(respirable):0.1 mg/m <sup>3</sup>  |  |
| Quartz Silica           | 14808-60-7 | ACGIH  | TWA(respirable fraction):0.025 mg/m <sup>3</sup>   | A2: Suspected human carcin.                        |
| Formaldehyde            | 50-00-0    | OSHA   | TWA:0.75 ppm;STEL:2 ppm  | 29 CFR 1910.1048                                   |
| Formaldehyde            | 50-00-0    | ACGIH  | TWA:0.1 ppm;STEL:0.3 ppm   | A2: Suspected human carcin.,<br>Dermal/Respiratory |

|                       |            |      |                         | Sensitizer |
|-----------------------|------------|------|-------------------------|------------|
| Paraffin oil          | 64742-52-5 | OSHA | TWA(as mist):5 mg/m3    |            |
| PETROLEUM DISTILLATES | 64742-52-5 | OSHA | TWA:2000 mg/m3(500 ppm) |            |
| Paraffin oil          | 64742-65-0 | OSHA | TWA(as mist):5 mg/m3    |            |
| PETROLEUM DISTILLATES | 64742-65-0 | OSHA | TWA:2000 mg/m3(500 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 appropriate local exhaust when product is heated. Provide local exhaust at process emission sources to control exposure near the source and to prevent the escape of dust into the work area. It is recommended that all dust control equipment (such as local exhaust ventilation), process equipment, and material transport systems involved in handling of this product be evaluated for the need for explosion-protection safeguards. Recognized safeguards include explosion relief vents, explosion suppression systems, and oxygen deficient process environments. 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. Evaluate the need for electrically classified 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.

Gloves made from the following material(s) are recommended: Nitrile 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 – Nitrile

#### 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:

During heating:

Use a positive pressure supplied-air respirator if there is a potential for over exposure from an uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

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:                 | Opaque liquid                                       |
| Odor, Color, Grade:                     | White, slightly soapy                               |
| Odor threshold                          | <i>No Data Available</i>                            |
| pH                                      | 6 - 8   |
| Melting point                           | <i>No Data Available</i>                            |
| Boiling Point                           | Approximately 100 °C [Details:212 deg F]            |
| Flash Point                             | <i>Not Applicable</i>                               |
| Evaporation rate                        | Approximately 1 [Ref Std:WATER=1]                   |
| Flammability (solid, gas)               | <i>Not Applicable</i>                               |
| Flammable Limits(LEL)                   | <i>Not Applicable</i>                               |
| Flammable Limits(UEL)                   | <i>Not Applicable</i>                               |
| Vapor Pressure                          | Approximately 17 mmHg                               |
| Vapor Density                           | < 1 [Ref Std:AIR=1] [Details:Ref Std:AIR=1]]        |
| Density                                 | 1.2 kg/l  |
| Solubility In Water                     | Approximately 75 g/100 g                            |
| Solubility- non-water                   | <i>No Data Available</i>                            |
| Partition coefficient: n-octanol/ water | <i>No Data Available</i>                            |
| Autoignition temperature                | <i>Not Applicable</i>                               |
| Decomposition temperature               | <i>No Data Available</i>                            |
| Viscosity                               | 800 - 1,500 centipoise                              |
| Molecular weight                        | <i>No Data Available</i>                            |
| Volatile Organic Compounds              | 19.3 g/l [Test Method:calculated SCAQMD rule 443.1] |
| Percent volatile                        | 41 - 43 % weight                                    |
| VOC Less H2O & Exempt Solvents          | 37.3 g/l [Test Method:calculated SCAQMD rule 443.1] |

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

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

### 10.2. Chemical stability

Stable.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

None known.

### 10.5. Incompatible materials

None known.

### 10.6. Hazardous decomposition products

Substance

Condition

None known.

Refer to section 5.2 for hazardous decomposition products during combustion.

If the product is exposed to extreme condition of heat from misuse or equipment failure, toxic decomposition products that include hydrogen fluoride and perfluoroisobutylene can occur.

## SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

### 11.1. Information on Toxicological effects

#### Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

#### Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

#### Skin Contact:

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

#### Eye Contact:

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

#### Ingestion:

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

#### Additional Health Effects:

#### Prolonged or repeated exposure may cause target organ effects:

Pneumoconiosis: Sign/symptoms may include persistent cough, breathlessness, chest pain, increased amounts of sputum, and changes in lung function tests.

#### Carcinogenicity:

Contains a chemical or chemicals which can cause cancer.

| Ingredient              | CAS No.    | Class Description              | Regulation                                  |
|-------------------------|------------|--------------------------------|---|
| SILICA, CRYSTAL AIRRESP | 14808-60-7 | Known human carcinogen         | National Toxicology Program Carcinogens     |
| Formaldehyde            | 50-00-0    | Grp. 1: Carcinogenic to humans | International Agency for Research on Cancer |
| Formaldehyde            | 50-00-0    | Known human carcinogen         | National Toxicology Program Carcinogens     |
| Formaldehyde            | 50-00-0    | Cancer hazard                  | OSHA Carcinogens                            |
| Quartz Silica           | 14808-60-7 | Grp. 1: Carcinogenic to humans | International Agency for Research on Cancer |
| TITANIUM DIOXIDE        | 13463-67-7 | 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   | Ingestion                      |         | No data available; calculated ATE >5,000 mg/kg |
| MICA-GROUP MINERALS                                     | Dermal                         |         | LD50 estimated to be > 5,000 mg/kg             |
| MICA-GROUP MINERALS                                     | Ingestion                      |         | LD50 estimated to be 2,000 - 5,000 mg/kg       |
| POLYTETRAFLUOROETHYLENE                                 | Dermal                         |         | LD50 estimated to be > 5,000 mg/kg             |
| POLYTETRAFLUOROETHYLENE                                 | Ingestion                      |         | LD50 estimated to be > 5,000 mg/kg             |
| TITANIUM DIOXIDE  | Dermal                         | Rabbit  | LD50 > 10,000 mg/kg                            |
| TITANIUM DIOXIDE  | Inhalation-Dust/Mist (4 hours) | Rat     | LC50 > 6.82 mg/l                               |
| TITANIUM DIOXIDE  | Ingestion                      | Rat     | LD50 > 10,000 mg/kg                            |
| Hydrotreated heavy naphthenic petroleum distillates     | Dermal                         | Rabbit  | LD50 > 2,000 mg/kg                             |
| Hydrotreated heavy naphthenic petroleum distillates     | Ingestion                      | Rat     | LD50 > 5,000 mg/kg                             |
| Solvent dewaxed heavy paraffinic distillate (petroleum) | Dermal                         | Rabbit  | LD50 > 5,000 mg/kg                             |
| Solvent dewaxed heavy paraffinic distillate (petroleum) | Inhalation-Dust/Mist (4 hours) | Rat     | LC50 > 4 mg/l                                  |
| Solvent dewaxed heavy paraffinic distillate (petroleum) | Ingestion                      | Rat     | LD50 > 5,000 mg/kg                             |
| Quartz Silica   | Dermal                         |         | LD50 estimated to be > 5,000 mg/kg             |
| Quartz Silica   | Ingestion                      |         | LD50 estimated to be > 5,000 mg/kg             |
| Formaldehyde  | Dermal                         | Rabbit  | LD50 270 mg/kg                                 |
| Formaldehyde  | Inhalation-Gas (4 hours)       | Rat     | LC50 470 ppm                                   |
| Formaldehyde  | Ingestion                      | Rat     | LD50 800 mg/kg                                 |

ATE = acute toxicity estimate

### Skin Corrosion/Irritation

| Name  | Species                 | Value                     |
|---|-------------------------|---------------------------|
| POLYTETRAFLUOROETHYLENE                             | Human and animal        | No significant irritation |
| TITANIUM DIOXIDE                                    | Rabbit                  | No significant irritation |
| Hydrotreated heavy naphthenic petroleum distillates | Rabbit                  | Minimal irritation        |
| Quartz Silica                                       | Professional judgement  | No significant irritation |
| Formaldehyde  | official classification | Corrosive                 |

### Serious Eye Damage/Irritation

| Name  | Species                 | Value                     |
|---|-------------------------|---------------------------|
| POLYTETRAFLUOROETHYLENE                             | Professional judgement  | No significant irritation |
| TITANIUM DIOXIDE                                    | Rabbit                  | No significant irritation |
| Hydrotreated heavy naphthenic petroleum distillates | Rabbit                  | Mild irritant             |
| Formaldehyde  | official classification | Corrosive                 |

### Skin Sensitization

| Name                    | Species | Value          |
|-------------------------|---------|----------------|
| POLYTETRAFLUOROETHYLENE | Human   | Not classified |



|   |                  |                |
|---|------------------|----------------|
| TITANIUM DIOXIDE                                    | Human and animal | Not classified |
| Hydrotreated heavy naphthenic petroleum distillates | Guinea pig       | Not classified |
| Formaldehyde  | Guinea pig       | Sensitizing    |

### Respiratory Sensitization

| Name         | Species | Value  |
|--------------|---------|--|
| Formaldehyde | Human   | Some positive data exist, but the data are not sufficient for classification |

### Germ Cell Mutagenicity

| Name             | Route    | Value  |
|------------------|----------|--|
| TITANIUM DIOXIDE | In Vitro | Not mutagenic  |
| TITANIUM DIOXIDE | In vivo  | Not mutagenic  |
| Quartz Silica    | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| Quartz Silica    | In vivo  | Some positive data exist, but the data are not sufficient for classification |
| Formaldehyde     | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| Formaldehyde     | In vivo  | Mutagenic  |

### Carcinogenicity

| Name  | Route         | Species                 | Value  |
|---|---------------|-------------------------|--|
| POLYTETRAFLUOROETHYLENE                             | Not Specified | Multiple animal species | Some positive data exist, but the data are not sufficient for classification |
| TITANIUM DIOXIDE                                    | Ingestion     | Multiple animal species | Not carcinogenic   |
| TITANIUM DIOXIDE                                    | Inhalation    | Rat                     | Carcinogenic   |
| Hydrotreated heavy naphthenic petroleum distillates | Ingestion     | Rat                     | Not carcinogenic   |
| Hydrotreated heavy naphthenic petroleum distillates | Dermal        | Mouse                   | Some positive data exist, but the data are not sufficient for classification |
| Quartz Silica                                       | Inhalation    | Human and animal        | Carcinogenic   |
| Formaldehyde  | Not Specified | Human and animal        | Carcinogenic   |

### Reproductive Toxicity

#### Reproductive and/or Developmental Effects

| Name         | Route      | Value                                | Species | Test Result     | Exposure Duration |
|--------------|------------|--------------------------------------|---------|-----------------|-------------------|
| Formaldehyde | Ingestion  | Not classified for male reproduction | Rat     | NOAEL 100 mg/kg | not applicable    |
| Formaldehyde | Inhalation | Not classified for development       | Rat     | NOAEL 10 ppm    | during gestation  |

### Target Organ(s)

#### Specific Target Organ Toxicity - single exposure

| Name                                    | Route      | Target Organ(s)        | Value   | Species | Test Result         | Exposure Duration |
|---|------------|------------------------|---|---------|---------------------|-------------------|
| Hydrotreated heavy naphthenic petroleum | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for |         | NOAEL Not available |                   |

| distillates  |            |                        | classification   |       |                     |         |
|--------------|------------|------------------------|--|-------|---------------------|---------|
| Formaldehyde | Inhalation | respiratory system     | Causes damage to organs  | Rat   | LOAEL 128 ppm       | 6 hours |
| Formaldehyde | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | Human | NOAEL Not available |         |

### Specific Target Organ Toxicity - repeated exposure

| Name                    | Route      | Target Organ(s)  | Value  | Species | Test Result         | Exposure Duration     |
|-------------------------|------------|--|--|---------|---------------------|-----------------------|
| MICA-GROUP MINERALS     | Inhalation | pneumoconiosis   | Causes damage to organs through prolonged or repeated exposure               | Human   | NOAEL Not available | occupational exposure |
| POLYTETRAFLUOROETHYLENE | Ingestion  | hematopoietic system   | Not classified   | Rat     | NOAEL Not available | 90 days               |
| TITANIUM DIOXIDE        | Inhalation | respiratory system   | Some positive data exist, but the data are not sufficient for classification | Rat     | LOAEL 0.01 mg/l     | 2 years               |
| TITANIUM DIOXIDE        | Inhalation | pulmonary fibrosis   | Not classified   | Human   | NOAEL Not available | occupational exposure |
| Quartz Silica           | Inhalation | silicosis  | Causes damage to organs through prolonged or repeated exposure               | Human   | NOAEL Not available | occupational exposure |
| Formaldehyde            | Dermal     | respiratory system   | Not classified   | Mouse   | NOAEL 80 mg/kg/day  | 60 weeks              |
| Formaldehyde            | Inhalation | respiratory system   | Causes damage to organs through prolonged or repeated exposure               | Rat     | NOAEL 0.3 ppm       | 28 months             |
| Formaldehyde            | Inhalation | liver  | Not classified   | Rat     | NOAEL 20 ppm        | 13 weeks              |
| Formaldehyde            | Inhalation | hematopoietic system   | Not classified   | Mouse   | NOAEL 15 ppm        | 3 weeks               |
| Formaldehyde            | Inhalation | nervous system   | Not classified   | Mouse   | NOAEL 10 ppm        | 13 weeks              |
| Formaldehyde            | Inhalation | endocrine system   immune system   muscles   kidney and/or bladder                     | Not classified   | Rat     | NOAEL 15 ppm        | 28 months             |
| Formaldehyde            | Inhalation | eyes   vascular system   | Not classified   | Rat     | NOAEL 14.3 ppm      | 2 years               |
| Formaldehyde            | Inhalation | heart  | Not classified   | Mouse   | NOAEL 14.3 ppm      | 2 years               |
| Formaldehyde            | Ingestion  | liver  | Not classified   | Rat     | NOAEL 300 mg/kg/day | 2 years               |
| Formaldehyde            | Ingestion  | immune system  | Not classified   | Rat     | NOAEL 20 mg/kg/day  | 4 weeks               |
| Formaldehyde            | Ingestion  | kidney and/or bladder  | Not classified   | Rat     | NOAEL 15 mg/kg/day  | 24 months             |
| Formaldehyde            | Ingestion  | nervous system   | Not classified   | Rat     | NOAEL 109 mg/kg/day | 2 years               |
| Formaldehyde            | Ingestion  | heart   endocrine system   hematopoietic system   respiratory system   vascular system | Not classified   | Rat     | NOAEL 300 mg/kg/day | 2 years               |
| Formaldehyde            | Ingestion  | skin   muscles   eyes  | Not classified   | Rat     | NOAEL 109 mg/kg/day | 2 years               |

### 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. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include HF. Facility must be capable of handling halogenated materials. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

**EPA Hazardous Waste Number (RCRA):** Not regulated

**SECTION 14: Transport Information**

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

**SECTION 15: Regulatory information**

**15.1. US Federal Regulations**

Contact 3M for more information.

**EPCRA 311/312 Hazard Classifications:**

**Physical Hazards**

Not applicable

**Health Hazards**

Carcinogenicity

Specific target organ toxicity (single or repeated exposure)

**15.2. State Regulations**

Contact 3M for more information.

**California Proposition 65**

| <b>Ingredient</b> | <b>C.A.S. No.</b> | <b>Listing</b>            |
|-------------------|-------------------|---------------------------|
| 1,4-DIOXANE       | 123-91-1          | Carcinogen                |
| BERYLLIUM         | 7440-41-7         | Carcinogen                |
| Arsenic           | 7440-38-2         | Carcinogen                |
| ACETALDEHYDE      | 75-07-0           | Carcinogen                |
| ETHYLENE OXIDE    | 75-21-8           | Female reproductive toxin |

|                |           |                         |
|----------------|-----------|-------------------------|
| ETHYLENE OXIDE | 75-21-8   | Male reproductive toxin |
| ETHYLENE OXIDE | 75-21-8   | Carcinogen              |
| ETHYLENE OXIDE | 75-21-8   | Developmental Toxin     |
| Mercury        | 7439-97-6 | Developmental Toxin     |

**15.3. Chemical Inventories**

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 product are in compliance with the new substance notification requirements of CEPA.

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 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.

The NFPA Health code of 3 is due to emergency situations where the material may thermally decompose and release Hydrogen Fluoride and Perfluoroisobutylene (PFIB). During normal use conditions, please reference Section 2 and Section 11 of the SDS for additional health hazard information.

|                        |           |                         |          |
|------------------------|-----------|-------------------------|----------|
| <b>Document Group:</b> | 10-5215-8 | <b>Version Number:</b>  | 27.02    |
| <b>Issue Date:</b>     | 01/12/18  | <b>Supersedes Date:</b> | 09/06/17 |

**Reason for Reissue**

Conversion to GHS format SDS.

**DISCLAIMER:** The information in this Safety Data Sheet (SDS) is believed to be correct as of the date issued.3MMAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE.User is responsible for determining whether the3Mproduct is fit for a particular purpose and suitable for user's method of use or application.Given the variety of factors that can affect the use and application of a3Mproduct, some of which are uniquely within the user's knowledge and control,it is essential that the user evaluate the3Mproduct to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3Mprovides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information,3Mmakes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the SDS available directly from3M

3M USA SDSs are available at [www.3M.com](http://www.3M.com)