



## Safety Data Sheet

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

#### 1.1. Product identifier

3M™ Heavy Duty 20CA Clear

#### Product Identification Numbers

62-4863-4920-2, 62-4863-4925-1  
7100166355, 7100152617

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

##### Recommended use

Aerosol Spray Adhesive

#### 1.3. Supplier's details

|                      |   |
|----------------------|---|
| <b>MANUFACTURER:</b> | 3M                                      |
| <b>DIVISION:</b>     | Industrial Adhesives and Tapes Division |
| <b>ADDRESS:</b>      | 3M Center, St. Paul, MN 55144-1000, USA |
| <b>Telephone:</b>    | 1-888-3M HELPS (1-888-364-3577)         |

#### 1.4. Emergency telephone number

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

### SECTION 2: Hazard identification

#### 2.1. Hazard classification

Aerosol Category 1

Serious Eye Damage/Irritation: Category 2B.

Reproductive Toxicity: Category 1B.

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

Specific Target Organ Toxicity (single exposure): Category 3.

Simple Asphyxiants: Category 1.

#### 2.2. Label elements

##### Signal word

Danger

##### Symbols

Flame | Exclamation mark | Health Hazard |

**Pictograms****Hazard Statements**

Extremely flammable aerosol.

Pressurized container: may burst if heated.

Causes eye irritation.

May damage fertility or the unborn child.

May cause drowsiness or dizziness.

May cause respiratory irritation.

May displace oxygen and cause rapid suffocation.

Causes damage to organs: cardiovascular system.

**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.

Do not spray on an open flame or other ignition source.

Do not pierce or burn, even after use.

Do not breathe vapor or spray.

Wash exposed skin thoroughly after handling.

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

Use only outdoors or in a well-ventilated area.

Wear protective gloves and if needed, respiratory protection (see SDS Section 8).

**Response:**

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

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

Continue rinsing.

IF exposed or concerned: Call a POISON CENTER or doctor.

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

If eye irritation persists: Get medical advice.

**Storage:**

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

Store locked up.

Protect from sunlight. Do not expose to temperatures exceeding 122°F (50°C).

**Disposal:**

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

**Notes to Physician:**

Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

**Supplemental Information:**

Intentional concentration and inhalation may be harmful or fatal.

**SECTION 3: Composition/information on ingredients**

| Ingredient  | C.A.S. No.    | % by Wt                  |
|---|---------------|--------------------------|
| Methyl Acetate  | 79-20-9       | 15 - 40 Trade Secret *   |
| Non-hazardous components (NJTS Reg. No. 0449960-6850) | Trade Secret* | 15 - 30                  |
| Dimethyl Ether  | 115-10-6      | 7 - 13 Trade Secret *    |
| Propane   | 74-98-6       | 7 - 13 Trade Secret *    |
| Hexamethyldisiloxane                                  | 107-46-0      | 5 - 10                   |
| 1,1-Difluoroethane                                    | 75-37-6       | 3 - 7 Trade Secret *     |
| Tackifier   | Trade Secret* | 3 - 7                    |
| Cyclohexane   | 110-82-7      | 1 - 5 Trade Secret *     |
| N-Butyl Acetate                                       | 123-86-4      | 0.5 - 1.5 Trade Secret * |
| Hexane  | 110-54-3      | < 1                      |
| Morpholine  | 110-91-8      | 0.1 - 1 Trade Secret *   |
| Toluene   | 108-88-3      | < 1                      |

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

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

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### Inhalation:

Remove person to fresh air. Get medical attention.

#### Skin Contact:

Wash with soap and water. If signs/symptoms develop, get medical attention.

#### Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

#### If Swallowed:

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

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

Irritating to the respiratory tract (coughing, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain). Central nervous system depression (headache, dizziness, drowsiness, incoordination, nausea, slurred speech, giddiness, and unconsciousness). Target organ effects. See Section 11 for additional details.

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

Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable extinguishing media

Use a fire fighting agent suitable for the surrounding fire.

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

Closed containers exposed to heat from fire may build pressure and explode. Exposure to extreme heat can give rise to thermal decomposition.

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

Aldehydes  
 Hydrocarbons  
 Carbon monoxide  
 Carbon dioxide  
 Hydrogen Fluoride  
 Ketones  
 Toxic Vapor, Gas, Particulate

**Condition**

During Combustion  
 During Combustion  
 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. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Use personal protective equipment based on the results of an exposure assessment. Refer to Section 8 for PPE recommendations. If anticipated exposure resulting from an accidental release exceeds the protective capabilities of the PPE listed in Section 8, or are unknown, select PPE that offers an appropriate level of protection. Consider the physical and chemical hazards of the material when doing so. Examples of PPE ensembles for emergency response could include wearing bunker gear for a release of flammable material; wearing chemical protective clothing if the spilled material is a corrosive, a sensitizer, a significant dermal irritant, or can be absorbed through the skin; or donning a positive pressure supplied-air respirator for chemicals with inhalation hazards. For information regarding physical and health hazards, refer to sections 2 and 11 of the SDS.

**6.2. Environmental precautions**

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**

If possible, seal leaking container. Place leaking containers in a well-ventilated area, preferably an operating exhaust hood, or if necessary outdoors on an impermeable surface until appropriate packaging for the leaking container or its contents is available. Contain spill. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal container approved for transportation by appropriate authorities. 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. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. 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 contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

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

Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. 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                   | A4: Not class. as human carcin, Ototoxicant                    |
| Toluene                     | 108-88-3   | OSHA   | TWA:200 ppm;CEIL:300 ppm     |  |
| Hexane                      | 110-54-3   | ACGIH  | TWA:50 ppm                   | Danger of cutaneous absorption                                 |
| Hexane                      | 110-54-3   | OSHA   | TWA:1800 mg/m3(500 ppm)      |  |
| Cyclohexane                 | 110-82-7   | ACGIH  | TWA:100 ppm                  |  |
| Cyclohexane                 | 110-82-7   | OSHA   | TWA:1050 mg/m3(300 ppm)      |  |
| Morpholine                  | 110-91-8   | ACGIH  | TWA:20 ppm                   | A4: Not class. as human carcin, Danger of cutaneous absorption |
| Morpholine                  | 110-91-8   | OSHA   | TWA:70 mg/m3(20 ppm)         | SKIN   |
| Dimethyl Ether              | 115-10-6   | AIHA   | TWA:1880 mg/m3(1000 ppm)     |  |
| Butyl acetates, all isomers | 123-86-4   | ACGIH  | TWA:50 ppm;STEL:150 ppm      |  |
| N-Butyl Acetate             | 123-86-4   | OSHA   | TWA:710 mg/m3(150 ppm)       |  |
| Butane, all isomers         | 74-98-6    | ACGIH  | STEL:1000 ppm                |  |
| Propane                     | 74-98-6    | ACGIH  | Limit value not established: | simple asphyxiant  |
| Propane                     | 74-98-6    | OSHA   | TWA:1800 mg/m3(1000 ppm)     |  |
| 1,1-Difluoroethane          | 75-37-6    | AIHA   | TWA:2700 mg/m3(1000 ppm)     |  |
| Methyl Acetate              | 79-20-9    | ACGIH  | TWA:200 ppm;STEL:250 ppm     |  |
| Methyl Acetate              | 79-20-9    | OSHA   | TWA:610 mg/m3(200 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

For those situations where the material might be exposed to extreme overheating due to misuse or equipment failure, use with appropriate local exhaust ventilation sufficient to maintain levels of thermal decomposition products below their exposure guidelines. Do not remain in area where available oxygen may be reduced. 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:

Safety Glasses with side shields

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

**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:

For those situations where the material might be exposed to extreme overheating due to misuse or equipment failure, use a positive pressure supplied-air respirator.

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors

Half facepiece or full facepiece supplied-air respirator

Organic vapor cartridges may have short service life.

For questions about suitability for a specific application, consult with your respirator manufacturer.

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

|  |  |
|--|--|
| <b>Physical state</b>                                    | Liquid   |
| <b>Specific Physical Form:</b>                           | Aerosol  |
| <b>Color</b>   | Amber  |
| <b>Odor</b>  | Mild Solvent   |
| <b>Odor threshold</b>                                    | <i>No Data Available</i>                               |
| <b>pH</b>  | <i>Not Applicable</i>                                  |
| <b>Melting point/Freezing point</b>                      | <i>No Data Available</i>                               |
| <b>Boiling point/Initial boiling point/Boiling range</b> | <i>No Data Available</i>                               |
| <b>Flash Point</b>                                       | Approximately -40 °C                                   |
| <b>Evaporation rate</b>                                  | 1  |
| <b>Flammability</b>                                      | Flammable Aerosol: Category 1.                         |
| <b>Flammable Limits(LEL)</b>                             | <i>No Data Available</i>                               |
| <b>Flammable Limits(UEL)</b>                             | <i>No Data Available</i>                               |
| <b>Vapor Pressure</b>                                    | ≤4137 mmHg   |
| <b>Relative Vapor Density</b>                            | 2  |
| <b>Density</b>   | 0.863 g/ml   |
| <b>Relative Density</b>                                  | Approximately 0.88 [Ref Std: WATER=1]                  |
| <b>Water solubility</b>                                  | Nil  |
| <b>Solubility- non-water</b>                             | <i>No Data Available</i>                               |
| <b>Partition coefficient: n-octanol/ water</b>           | <i>No Data Available</i>                               |
| <b>Autoignition temperature</b>                          | <i>No Data Available</i>                               |
| <b>Decomposition temperature</b>                         | <i>No Data Available</i>                               |
| <b>Kinematic Viscosity</b>                               | 116 mm <sup>2</sup> /sec                               |
| <b>Volatile Organic Compounds</b>                        | < 25 % [Test Method:calculated per CARB title 2]       |
| <b>Volatile Organic Compounds</b>                        | ≤ 424.2 g/l [Test Method:calculated SCAQMD rule 443.1] |
| <b>Percent volatile</b>                                  | <i>No Data Available</i>                               |

|                                |                   |
|--------------------------------|-------------------|
| VOC Less H2O & Exempt Solvents | No Data Available |
| 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

**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.

Extreme heat arising from situations such as misuse or equipment failure can generate hydrogen fluoride as a decomposition product.

**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:**

Simple Asphyxiation: Signs/symptoms may include increased heart rate, rapid respirations, drowsiness, headache, incoordination, altered judgement, nausea, vomiting, lethargy, seizures, coma, and may be fatal. 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:**

Prolonged or repeated exposure may cause: Dermal Defatting: Signs/symptoms may include localized redness, itching, drying and cracking of skin.

**Eye Contact:**

Moderate 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. 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. Single exposure, above recommended guidelines, may cause: Cardiac Sensitization: Signs/symptoms may include irregular heartbeat (arrhythmia), faintness, chest pain, and may be fatal.

**Reproductive/Developmental Toxicity:**

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

**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 >5,000 mg/kg |
| Methyl Acetate  | Dermal                     | Rat                    | LD50 > 2,000 mg/kg                             |
| Methyl Acetate  | Inhalation-Vapor (4 hours) | Rat                    | LC50 > 49 mg/l                                 |
| Methyl Acetate  | Ingestion                  | Rat                    | LD50 > 5,000 mg/kg                             |
| Propane   | Inhalation-Gas (4 hours)   | Rat                    | LC50 > 200,000 ppm                             |
| Non-hazardous components (NJTS Reg. No. 0449960-6850) | Dermal                     | Not available          | LD50 > 2,000 mg/kg                             |
| Non-hazardous components (NJTS Reg. No. 0449960-6850) | Ingestion                  | Not available          | LD50 > 2,000 mg/kg                             |
| Dimethyl Ether  | Inhalation-Gas (4 hours)   | Rat                    | LC50 164,000 ppm                               |
| Hexamethyldisiloxane                                  | Dermal                     | Rabbit                 | LD50 12,160 mg/kg                              |
| Hexamethyldisiloxane                                  | Inhalation-Vapor (4 hours) | Rat                    | LC50 106 mg/l                                  |
| Hexamethyldisiloxane                                  | Ingestion                  | Rat                    | LD50 > 12,200 mg/kg                            |
| Tackifier   | Dermal                     | Professional judgement | LD50 estimated to be > 5,000 mg/kg             |
| Tackifier   | Ingestion                  | Rat                    | LD50 > 2,000 mg/kg                             |
| 1,1-Difluoroethane                                    | Inhalation-Gas (4 hours)   | Rat                    | LC50 > 437,000 ppm                             |
| Cyclohexane   | Dermal                     | Rat                    | LD50 > 2,000 mg/kg                             |
| Cyclohexane   | Inhalation-Vapor (4 hours) | Rat                    | LC50 > 32.9 mg/l                               |
| Cyclohexane   | Ingestion                  | Rat                    | LD50 6,200 mg/kg                               |

|                 |                                |        |                                   |
|-----------------|--------------------------------|--------|-----------------------------------|
| Hexane          | Dermal                         | Rabbit | LD50 > 2,000 mg/kg                |
| Hexane          | Inhalation-Vapor (4 hours)     | Rat    | LC50 170 mg/l                     |
| Hexane          | Ingestion                      | Rat    | LD50 > 28,700 mg/kg               |
| N-Butyl Acetate | Dermal                         | Rabbit | LD50 > 14,112 mg/kg               |
| N-Butyl Acetate | Inhalation-Dust/Mist (4 hours) | Rat    | LC50 1.8 mg/l                     |
| N-Butyl Acetate | Inhalation-Vapor (4 hours)     | Rat    | LC50 > 21 mg/l                    |
| N-Butyl Acetate | Ingestion                      | Rat    | LD50 > 10,760 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                  |
| Morpholine      | Dermal                         | Rabbit | LD50 500 mg/kg                    |
| Morpholine      | Inhalation-Vapor               | Rat    | LC50 estimated to be 10 - 20 mg/l |
| Morpholine      | Ingestion                      | Rat    | LD50 1,680 mg/kg                  |

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

| Name  | Species                | Value                     |
|---|------------------------|---------------------------|
| Methyl Acetate  | Rabbit                 | No significant irritation |
| Propane   | Rabbit                 | Minimal irritation        |
| Non-hazardous components (NJTS Reg. No. 0449960-6850) | Professional judgement | No significant irritation |
| Hexamethyldisiloxane                                  | Rabbit                 | No significant irritation |
| Tackifier   | In vitro data          | No significant irritation |
| Cyclohexane   | Rabbit                 | Mild irritant             |
| Hexane  | Human and animal       | Mild irritant             |
| N-Butyl Acetate                                       | Rabbit                 | No significant irritation |
| Toluene   | Rabbit                 | Irritant                  |
| Morpholine  | Rabbit                 | Corrosive                 |

**Serious Eye Damage/Irritation**

| Name  | Species                | Value                     |
|---|------------------------|---------------------------|
| Methyl Acetate  | Rabbit                 | Moderate irritant         |
| Propane   | Rabbit                 | Mild irritant             |
| Non-hazardous components (NJTS Reg. No. 0449960-6850) | Professional judgement | No significant irritation |
| Hexamethyldisiloxane                                  | Rabbit                 | Mild irritant             |
| Tackifier   | In vitro data          | No significant irritation |
| Cyclohexane   | Rabbit                 | Mild irritant             |
| Hexane  | Rabbit                 | Mild irritant             |
| N-Butyl Acetate                                       | Human                  | Mild irritant             |
| Toluene   | Rabbit                 | Moderate irritant         |
| Morpholine  | Rabbit                 | Corrosive                 |

**Skin Sensitization**

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

|   |                         |                |
|---|-------------------------|----------------|
| Methyl Acetate  | Human                   | Not classified |
| Non-hazardous components (NJTS Reg. No. 0449960-6850) |                         | Not classified |
| Hexamethyldisiloxane                                  | Human                   | Not classified |
| Tackifier   | Multiple animal species | Not classified |
| Hexane  | Human                   | Not classified |
| N-Butyl Acetate                                       | Multiple animal species | Not classified |
| Toluene   | Guinea pig              | Not classified |
| Morpholine  | 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  |
|----------------------|----------|--|
| Methyl Acetate       | In Vitro | Not mutagenic  |
| Methyl Acetate       | In vivo  | Not mutagenic  |
| Propane              | In Vitro | Not mutagenic  |
| Dimethyl Ether       | In Vitro | Not mutagenic  |
| Dimethyl Ether       | In vivo  | Not mutagenic  |
| Hexamethyldisiloxane | In Vitro | Not mutagenic  |
| Hexamethyldisiloxane | In vivo  | Not mutagenic  |
| Tackifier            | In Vitro | Not mutagenic  |
| 1,1-Difluoroethane   | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| 1,1-Difluoroethane   | In vivo  | Some positive data exist, but the data are not sufficient for classification |
| Cyclohexane          | In Vitro | Not mutagenic  |
| Cyclohexane          | In vivo  | Some positive data exist, but the data are not sufficient for classification |
| Hexane               | In Vitro | Not mutagenic  |
| Hexane               | In vivo  | Not mutagenic  |
| N-Butyl Acetate      | In Vitro | Not mutagenic  |
| Toluene              | In Vitro | Not mutagenic  |
| Toluene              | In vivo  | Not mutagenic  |
| Morpholine           | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| Morpholine           | In vivo  | Some positive data exist, but the data are not sufficient for classification |

### Carcinogenicity

| Name                 | Route      | Species         | Value  |
|----------------------|------------|-----------------|--|
| Dimethyl Ether       | Inhalation | Rat             | Not carcinogenic   |
| Hexamethyldisiloxane | Inhalation | Rat             | Some positive data exist, but the data are not sufficient for classification |
| 1,1-Difluoroethane   | Inhalation | Rat             | Some positive data exist, but the data are not sufficient for classification |
| Hexane               | Dermal     | Mouse           | Not carcinogenic   |
| Hexane               | Inhalation | Mouse           | Some positive data exist, but the data are not sufficient for classification |
| 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 |
| Morpholine           | Ingestion  | Multiple animal | Not carcinogenic   |

|            |            |         |                  |
|------------|------------|---------|------------------|
|            |            | species |                  |
| Morpholine | Inhalation | Rat     | Not carcinogenic |

## Reproductive Toxicity

### Reproductive and/or Developmental Effects

| Name                 | Route      | Value                                  | Species                 | Test Result           | Exposure Duration      |
|----------------------|------------|--|-------------------------|-----------------------|------------------------|
| Dimethyl Ether       | Inhalation | Not classified for development         | Rat                     | NOAEL 40,000 ppm      | during organogenesis   |
| Hexamethyldisiloxane | Inhalation | Not classified for female reproduction | Rabbit                  | NOAEL 33 mg/l         | 2 generation           |
| Hexamethyldisiloxane | Inhalation | Not classified for male reproduction   | Rabbit                  | NOAEL 33 mg/l         | 2 generation           |
| Hexamethyldisiloxane | Inhalation | Not classified for development         | Multiple animal species | NOAEL 19.9 mg/l       | during gestation       |
| 1,1-Difluoroethane   | Inhalation | Not classified for development         | Rat                     | NOAEL 50,000 ppm      | during organogenesis   |
| Cyclohexane          | Inhalation | Not classified for female reproduction | Rat                     | NOAEL 24 mg/l         | 2 generation           |
| Cyclohexane          | Inhalation | Not classified for male reproduction   | Rat                     | NOAEL 24 mg/l         | 2 generation           |
| Cyclohexane          | Inhalation | Not classified for development         | Rat                     | NOAEL 6.9 mg/l        | 2 generation           |
| Hexane               | Ingestion  | Not classified for development         | Mouse                   | NOAEL 2,200 mg/kg/day | during organogenesis   |
| Hexane               | Inhalation | Not classified for development         | Rat                     | NOAEL 0.7 mg/l        | during gestation       |
| Hexane               | Ingestion  | Toxic to male reproduction             | Rat                     | NOAEL 1,140 mg/kg/day | 90 days                |
| Hexane               | Inhalation | Toxic to male reproduction             | Rat                     | LOAEL 3.52 mg/l       | 28 days                |
| N-Butyl Acetate      | Inhalation | Not classified for female reproduction | Rat                     | NOAEL 9.5 mg/l        | 2 generation           |
| N-Butyl Acetate      | Inhalation | Not classified for male reproduction   | Rat                     | NOAEL 9.5 mg/l        | 2 generation           |
| N-Butyl Acetate      | Inhalation | Not classified for development         | Rat                     | NOAEL 3.6 mg/l        | 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 |
| Morpholine           | Ingestion  | Toxic to male reproduction             | similar compounds       | NOAEL 60 mg/kg/day    | 2 generation           |

## Target Organ(s)

### Specific Target Organ Toxicity - single exposure

| Name           | Route      | Target Organ(s)                   | Value                             | Species          | Test Result         | Exposure Duration |
|----------------|------------|-----------------------------------|-----------------------------------|------------------|---------------------|-------------------|
| Methyl Acetate | Inhalation | central nervous system depression | May cause drowsiness or dizziness | Human and animal | NOAEL Not available |                   |
| Methyl Acetate | Inhalation | respiratory irritation            | May cause respiratory irritation  | Human and animal | NOAEL Not available |                   |

|                    |            |                                   |  |                        |                     |                        |
|--------------------|------------|-----------------------------------|--|------------------------|---------------------|------------------------|
| Methyl Acetate     | Inhalation | blindness                         | Not classified   |                        | NOAEL Not available |                        |
| Methyl Acetate     | Ingestion  | central nervous system depression | May cause drowsiness or dizziness  |                        | NOAEL Not available |                        |
| Propane            | Inhalation | cardiac sensitization             | Causes damage to organs  | Human                  | NOAEL Not available |                        |
| Propane            | Inhalation | central nervous system depression | May cause drowsiness or dizziness  | Human                  | NOAEL Not available |                        |
| Propane            | Inhalation | respiratory irritation            | Not classified   | Human                  | NOAEL Not available |                        |
| Dimethyl Ether     | Inhalation | central nervous system depression | May cause drowsiness or dizziness  | Rat                    | LOAEL 10,000 ppm    | 30 minutes             |
| Dimethyl Ether     | Inhalation | cardiac sensitization             | Some positive data exist, but the data are not sufficient for classification | Dog                    | NOAEL 100,000 ppm   | 5 minutes              |
| 1,1-Difluoroethane | Inhalation | cardiac sensitization             | Causes damage to organs  | Human and animal       | NOAEL Not available | poisoning and/or abuse |
| 1,1-Difluoroethane | Inhalation | central nervous system depression | May cause drowsiness or dizziness  | Human and animal       | NOAEL 100,000 ppm   |                        |
| 1,1-Difluoroethane | Inhalation | respiratory irritation            | Some positive data exist, but the data are not sufficient for classification | Not available          | NOAEL Not available | not available          |
| Cyclohexane        | Inhalation | central nervous system depression | May cause drowsiness or dizziness  | Human and animal       | NOAEL Not available |                        |
| Cyclohexane        | Inhalation | respiratory irritation            | Some positive data exist, but the data are not sufficient for classification | Human and animal       | NOAEL Not available |                        |
| Cyclohexane        | Ingestion  | central nervous system depression | May cause drowsiness or dizziness  | Professional judgement | NOAEL Not available |                        |
| Hexane             | Inhalation | central nervous system depression | May cause drowsiness or dizziness  | Human                  | NOAEL Not available | not available          |
| Hexane             | Inhalation | respiratory irritation            | Some positive data exist, but the data are not sufficient for classification | Rabbit                 | NOAEL Not available | 8 hours                |
| Hexane             | Inhalation | respiratory system                | Not classified   | Rat                    | NOAEL 24.6 mg/l     | 8 hours                |
| N-Butyl Acetate    | Inhalation | central nervous system depression | May cause drowsiness or dizziness  | Human                  | NOAEL Not available | not available          |
| N-Butyl Acetate    | Inhalation | respiratory irritation            | May cause respiratory irritation   | Human                  | NOAEL Not available | not available          |
| N-Butyl Acetate    | Ingestion  | central nervous system depression | May cause drowsiness or dizziness  | Professional judgement | NOAEL Not available |                        |
| 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 |
| Morpholine         | Inhalation | respiratory irritation            | Some positive data exist, but the data are not sufficient for classification | similar health hazards | NOAEL Not available |                        |

### Specific Target Organ Toxicity - repeated exposure

| Name           | Route      | Target Organ(s)    | Value   | Species | Test Result    | Exposure Duration |
|----------------|------------|--------------------|---|---------|----------------|-------------------|
| Methyl Acetate | Inhalation | respiratory system | Some positive data exist, but the data are not sufficient for | Rat     | NOAEL 1.1 mg/l | 28 days           |

|                      |            |                        | classification |     |                       |          |
|----------------------|------------|------------------------|----------------|-----|-----------------------|----------|
| Methyl Acetate       | Inhalation | endocrine system       | Not classified | Rat | NOAEL 6.1 mg/l        | 28 days  |
| Methyl Acetate       | Inhalation | hematopoietic system   | Not classified | Rat | NOAEL 6.1 mg/l        | 28 days  |
| Methyl Acetate       | Inhalation | liver                  | Not classified | Rat | NOAEL 6.1 mg/l        | 28 days  |
| Methyl Acetate       | Inhalation | immune system          | Not classified | Rat | NOAEL 6.1 mg/l        | 28 days  |
| Methyl Acetate       | Inhalation | kidney and/or bladder  | Not classified | Rat | NOAEL 6.1 mg/l        | 28 days  |
| Dimethyl Ether       | Inhalation | hematopoietic system   | Not classified | Rat | NOAEL 25,000 ppm      | 2 years  |
| Dimethyl Ether       | Inhalation | liver                  | Not classified | Rat | NOAEL 20,000 ppm      | 30 weeks |
| Hexamethyldisiloxane | Dermal     | liver                  | Not classified | Rat | NOAEL 1,000 mg/kg/day | 4 weeks  |
| Hexamethyldisiloxane | Dermal     | kidney and/or bladder  | Not classified | Rat | NOAEL 1,000 mg/kg/day | 4 weeks  |
| Hexamethyldisiloxane | Dermal     | endocrine system       | Not classified | Rat | NOAEL 1,000 mg/kg/day | 4 weeks  |
| Hexamethyldisiloxane | Dermal     | hematopoietic system   | Not classified | Rat | NOAEL 1,000 mg/kg/day | 4 weeks  |
| Hexamethyldisiloxane | Dermal     | nervous system         | Not classified | Rat | NOAEL 1,000 mg/kg/day | 4 weeks  |
| Hexamethyldisiloxane | Inhalation | hematopoietic system   | Not classified | Rat | NOAEL 33 mg/l         | 13 weeks |
| Hexamethyldisiloxane | Inhalation | kidney and/or bladder  | Not classified | Rat | NOAEL 1.3 mg/l        | 13 weeks |
| Hexamethyldisiloxane | Inhalation | heart                  | Not classified | Rat | NOAEL 33 mg/l         | 13 weeks |
| Hexamethyldisiloxane | Inhalation | endocrine system       | Not classified | Rat | NOAEL 33 mg/l         | 13 weeks |
| Hexamethyldisiloxane | Inhalation | liver                  | Not classified | Rat | NOAEL 33 mg/l         | 13 weeks |
| Hexamethyldisiloxane | Inhalation | immune system          | Not classified | Rat | NOAEL 33 mg/l         | 13 weeks |
| Hexamethyldisiloxane | Inhalation | nervous system         | Not classified | Rat | NOAEL 33 mg/l         | 13 weeks |
| Hexamethyldisiloxane | Inhalation | eyes                   | Not classified | Rat | NOAEL 33 mg/l         | 13 weeks |
| Hexamethyldisiloxane | Inhalation | respiratory system     | Not classified | Rat | NOAEL 33 mg/l         | 13 weeks |
| Hexamethyldisiloxane | Ingestion  | hematopoietic system   | Not classified | Rat | NOAEL 640 mg/kg/day   | 4 weeks  |
| Hexamethyldisiloxane | Ingestion  | liver                  | Not classified | Rat | NOAEL 640 mg/kg/day   | 4 weeks  |
| Hexamethyldisiloxane | Ingestion  | immune system          | Not classified | Rat | NOAEL 640 mg/kg/day   | 4 weeks  |
| Hexamethyldisiloxane | Ingestion  | nervous system         | Not classified | Rat | NOAEL 640 mg/kg/day   | 4 weeks  |
| Hexamethyldisiloxane | Ingestion  | kidney and/or bladder  | Not classified | Rat | NOAEL 640 mg/kg/day   | 4 weeks  |
| Tackifier            | Ingestion  | heart                  | Not classified | Rat | NOAEL 331 mg/kg/day   | 90 days  |
| Tackifier            | Ingestion  | gastrointestinal tract | Not classified | Rat | NOAEL 331 mg/kg/day   | 90 days  |
| Tackifier            | Ingestion  | hematopoietic system   | Not classified | Rat | NOAEL 331 mg/kg/day   | 90 days  |
| Tackifier            | Ingestion  | liver                  | Not classified | Rat | NOAEL 331 mg/kg/day   | 90 days  |
| Tackifier            | Ingestion  | nervous system         | Not classified | Rat | NOAEL 331 mg/kg/day   | 90 days  |

|                    |            |                           |  |        | mg/kg/day             |                       |
|--------------------|------------|---------------------------|--|--------|-----------------------|-----------------------|
| Tackifier          | Ingestion  | eyes                      | Not classified   | Rat    | NOAEL 331 mg/kg/day   | 90 days               |
| Tackifier          | Ingestion  | kidney and/or bladder     | Not classified   | Rat    | NOAEL 331 mg/kg/day   | 90 days               |
| 1,1-Difluoroethane | Inhalation | hematopoietic system      | Not classified   | Rat    | NOAEL 25,000 ppm      | 2 years               |
| 1,1-Difluoroethane | Inhalation | kidney and/or bladder     | Not classified   | Rat    | NOAEL 25,000 ppm      | 2 years               |
| 1,1-Difluoroethane | Inhalation | respiratory system        | Not classified   | Rat    | NOAEL 25,000 ppm      | 2 years               |
| Cyclohexane        | Inhalation | liver                     | Not classified   | Rat    | NOAEL 24 mg/l         | 90 days               |
| Cyclohexane        | Inhalation | auditory system           | Not classified   | Rat    | NOAEL 1.7 mg/l        | 90 days               |
| Cyclohexane        | Inhalation | kidney and/or bladder     | Not classified   | Rabbit | NOAEL 2.7 mg/l        | 10 weeks              |
| Cyclohexane        | Inhalation | hematopoietic system      | Not classified   | Mouse  | NOAEL 24 mg/l         | 14 weeks              |
| Cyclohexane        | Inhalation | peripheral nervous system | Not classified   | Rat    | NOAEL 8.6 mg/l        | 30 weeks              |
| Hexane             | Inhalation | peripheral nervous system | Causes damage to organs through prolonged or repeated exposure               | Human  | NOAEL Not available   | occupational exposure |
| Hexane             | Inhalation | respiratory system        | Some positive data exist, but the data are not sufficient for classification | Mouse  | LOAEL 1.76 mg/l       | 13 weeks              |
| Hexane             | Inhalation | liver                     | Not classified   | Rat    | NOAEL Not available   | 6 months              |
| Hexane             | Inhalation | kidney and/or bladder     | Not classified   | Rat    | LOAEL 1.76 mg/l       | 6 months              |
| Hexane             | Inhalation | hematopoietic system      | Not classified   | Mouse  | NOAEL 35.2 mg/l       | 13 weeks              |
| Hexane             | Inhalation | auditory system           | Not classified   | Human  | NOAEL Not available   | occupational exposure |
| Hexane             | Inhalation | immune system             | Not classified   | Human  | NOAEL Not available   | occupational exposure |
| Hexane             | Inhalation | eyes                      | Not classified   | Human  | NOAEL Not available   | occupational exposure |
| Hexane             | Inhalation | heart                     | Not classified   | Rat    | NOAEL 1.76 mg/l       | 6 months              |
| Hexane             | Inhalation | skin                      | Not classified   | Rat    | NOAEL 1.76 mg/l       | 6 months              |
| Hexane             | Inhalation | endocrine system          | Not classified   | Rat    | NOAEL 1.76 mg/l       | 6 months              |
| Hexane             | Ingestion  | peripheral nervous system | Some positive data exist, but the data are not sufficient for classification | Rat    | NOAEL 1,140 mg/kg/day | 90 days               |
| Hexane             | Ingestion  | endocrine system          | Not classified   | Rat    | NOAEL Not available   | 13 weeks              |
| Hexane             | Ingestion  | hematopoietic system      | Not classified   | Rat    | NOAEL Not available   | 13 weeks              |
| Hexane             | Ingestion  | liver                     | Not classified   | Rat    | NOAEL Not available   | 13 weeks              |
| Hexane             | Ingestion  | immune system             | Not classified   | Rat    | NOAEL Not available   | 13 weeks              |
| Hexane             | Ingestion  | kidney and/or bladder     | Not classified   | Rat    | NOAEL Not available   | 13 weeks              |
| N-Butyl Acetate    | Inhalation | endocrine system          | Not classified   | Rat    | NOAEL 9.6 mg/l        | 13 weeks              |
| N-Butyl Acetate    | Inhalation | hematopoietic system      | Not classified   | Rat    | NOAEL 9.6 mg/l        | 13 weeks              |
| N-Butyl Acetate    | Inhalation | liver                     | Not classified   | Rat    | NOAEL 9.6 mg/l        | 13 weeks              |
| N-Butyl Acetate    | Inhalation | nervous system            | Not classified   | Rat    | NOAEL 9.6 mg/l        | 13 weeks              |
| N-Butyl Acetate    | Inhalation | kidney and/or bladder     | Not classified   | Rat    | NOAEL 9.6 mg/l        | 13 weeks              |

|                 |            |                                 |  |                         |                       |                        |
|-----------------|------------|---------------------------------|--|-------------------------|-----------------------|------------------------|
| N-Butyl Acetate | Inhalation | gastrointestinal tract          | Not classified   | Rat                     | NOAEL 4.8 mg/l        | 13 weeks               |
| N-Butyl Acetate | Inhalation | respiratory system              | Not classified   | Rat                     | NOAEL 4.8 mg/l        | 13 weeks               |
| N-Butyl Acetate | Inhalation | heart                           | Not classified   | Rat                     | NOAEL 9.6 mg/l        | 13 weeks               |
| N-Butyl Acetate | Inhalation | bone, teeth, nails, and/or hair | Not classified   | Rat                     | NOAEL 9.6 mg/l        | 13 weeks               |
| N-Butyl Acetate | Inhalation | immune system                   | Not classified   | Rat                     | NOAEL 9.6 mg/l        | 13 weeks               |
| N-Butyl Acetate | Inhalation | eyes                            | Not classified   | Rat                     | NOAEL 9.6 mg/l        | 13 weeks               |
| N-Butyl Acetate | Inhalation | vascular system                 | Not classified   | Rat                     | NOAEL 9.6 mg/l        | 13 weeks               |
| Toluene         | Inhalation | auditory system                 | Causes damage to organs through prolonged or repeated exposure               | Human                   | NOAEL Not available   | poisoning and/or abuse |
| Toluene         | Inhalation | nervous system                  | Causes damage to organs through prolonged or repeated exposure               | Human                   | NOAEL Not available   | poisoning and/or abuse |
| Toluene         | Inhalation | eyes                            | Causes damage to organs through prolonged or repeated exposure               | Human                   | NOAEL Not available   | poisoning and/or abuse |
| Toluene         | Inhalation | 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                           | Not classified   | Rat                     | NOAEL 11.3 mg/l       | 15 weeks               |
| Toluene         | Inhalation | liver                           | Not classified   | Rat                     | NOAEL 11.3 mg/l       | 15 weeks               |
| Toluene         | Inhalation | 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                |
| Toluene         | Inhalation | bone, teeth, nails, and/or hair | Not classified   | Mouse                   | NOAEL 1.1 mg/l        | 8 weeks                |
| Toluene         | Inhalation | hematopoietic system            | Not classified   | Human                   | NOAEL Not available   | occupational exposure  |
| Toluene         | Inhalation | 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                           | Not classified   | Multiple animal species | NOAEL 2,500 mg/kg/day | 13 weeks               |
| Toluene         | Ingestion  | 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                |
| Morpholine      | Dermal     | liver                           | Some positive data exist, but the data are not sufficient for classification | Guinea pig              | LOAEL 900 mg/kg/day   | 13 days                |
| Morpholine      | Dermal     | kidney and/or bladder           | Some positive data exist, but the data are not sufficient for                | Guinea pig              | LOAEL 900 mg/kg/day   | 13 days                |

|            |            |                        | classification   |            |                     |                       |
|------------|------------|------------------------|--|------------|---------------------|-----------------------|
| Morpholine | Dermal     | hematopoietic system   | Not classified   | Guinea pig | NOAEL 900 mg/kg/day | 13 days               |
| Morpholine | Inhalation | eyes                   | Causes damage to organs through prolonged or repeated exposure               | Human      | NOAEL Not available | occupational exposure |
| Morpholine | Inhalation | pulmonary fibrosis     | May cause damage to organs though prolonged or repeated exposure             | Rat        | NOAEL 0.09 mg/l     | 13 weeks              |
| Morpholine | Inhalation | kidney and/or bladder  | Some positive data exist, but the data are not sufficient for classification | Rat        | LOAEL 64 mg/l       | 5 days                |
| Morpholine | Inhalation | liver                  | Not classified   | Rat        | LOAEL 64 mg/l       | 5 days                |
| Morpholine | Inhalation | heart                  | Not classified   | Rat        | NOAEL 0.9 mg/l      | 13 weeks              |
| Morpholine | Inhalation | endocrine system       | Not classified   | Rat        | NOAEL 0.9 mg/l      | 13 weeks              |
| Morpholine | Inhalation | gastrointestinal tract | Not classified   | Rat        | NOAEL 0.53 mg/l     | 104 weeks             |
| Morpholine | Inhalation | nervous system         | Not classified   | Rat        | NOAEL 0.53 mg/l     | 104 weeks             |
| Morpholine | Ingestion  | kidney and/or bladder  | May cause damage to organs though prolonged or repeated exposure             | Rat        | LOAEL 160 mg/kg/day | 30 days               |
| Morpholine | Ingestion  | liver                  | Some positive data exist, but the data are not sufficient for classification | Rat        | NOAEL 160 mg/kg/day | 30 days               |
| Morpholine | Ingestion  | respiratory system     | Some positive data exist, but the data are not sufficient for classification | Rat        | NOAEL 160 mg/kg/day | 30 days               |
| Morpholine | Ingestion  | hematopoietic system   | Not classified   | Rat        | NOAEL 800 mg/kg/day | 30 days               |
| Morpholine | Ingestion  | endocrine system       | Not classified   | Rat        | NOAEL 323 mg/kg/day | 4 weeks               |

### Aspiration Hazard

| Name        | Value             |
|-------------|-------------------|
| Cyclohexane | Aspiration hazard |
| Hexane      | Aspiration hazard |
| 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

### 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. Facility must be capable of handling aerosol cans. 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): D001 (Ignitable)

## 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

Flammable (gases, aerosols, liquids, or solids)

##### Health Hazards

Reproductive toxicity

Serious eye damage or eye irritation

Simple Asphyxiant

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>     |
|-------------------|------------------|--------------------|
| Cyclohexane       | 110-82-7         | Trade Secret 1 - 5 |

### 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. All required components of this product are listed on the active portion of the TSCA Inventory.

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:** 4 **Instability:** 0 **Special Hazards:** None  
**Aerosol Storage Code:** 3

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. During normal use conditions, please reference Section 2 and Section 11 of the SDS for additional health hazard information.

|                        |           |                         |          |
|------------------------|-----------|-------------------------|----------|
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