



Safety Data Sheet

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

SECTION 1: Identification

1.1. Product identifier

3M™High Strength 90 Aerosol Spray Low 25% VOC

Product Identification Numbers

62-4878-4920-0 62-4878-4930-9 62-4878-4935-8

1.2. Recommended use and restrictions on use

Intended Use

Aerosol Spray Adhesive

Restrictions on use

Not applicable

1.3. Supplier's details

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

1.4. Emergency telephone number

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

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

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 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. In case of inadequate ventilation wear respiratory protection.

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: Get medical attention. If eye irritation persists: Get medical advice. If experiencing respiratory symptoms: Call a POISON CENTER or doctor.

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.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt	Common Name
Methyl Acetate	79-20-9	30 - 60 Trade Secret *	Acetic acid, methyl ester
Non-hazardous components	Trade Secret	15 - 30	Not Applicable
Dimethyl ether	115-10-6	7 - 13	Methane, oxybis-
Propane	74-98-6	7 - 13 Trade Secret *	Propane
Hexamethyldisiloxane	107-46-0	3 - 10	Disiloxane, hexamethyl-
Tackifier	Trade Secret	5 - 10	Not Applicable
1,1-Difluoroethane	75-37-6	3 - 7 Trade Secret *	Ethane, 1,1-difluoro-

Cyclohexane	110-82-7	1 - 5	Cyclohexane
n-Butyl acetate	123-86-4	1 - 5 Trade Secret *	Acetic acid, butyl ester
Hexane	110-54-3	< 1	Hexane
Morpholine	110-91-8	0.1 - 1 Trade Secret *	Morpholine
Toluene	108-88-3	< 1	No Data Available

Tackifier is a non-hazardous material according to WHMIS criteria. Specific information has been withheld as a trade secret.
Non-hazardous components is a non-hazardous material according to WHMIS criteria. Specific information has been withheld as a trade secret.

*The concentration (exact or range) of this component 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. Unsuitable extinguishing media

None Determined

5.3. Special hazards arising from the substance or mixture

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

Hazardous Decomposition or By-Products

Substance

Aldehydes
Hydrocarbons
Carbon monoxide
Carbon dioxide
Hydrogen Fluoride

Condition

During Combustion
During Combustion
During Combustion
During Combustion
During Combustion

Ketones
Toxic Vapor, Gas, Particulate

During Combustion
During Combustion

5.4. Special protection actions for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. Warning! A motor could be an ignition source and could cause flammable gases or vapours 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/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. 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 122°F (50°C). Store away from heat. Store away from acids. Store away from oxidizing agents. Store locked up.

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
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Toluene	108-88-3	ACGIH	TWA:20 ppm	
Hexane	110-54-3	ACGIH	TWA:50 ppm	Danger of cutaneous absorption
Cyclohexane	110-82-7	ACGIH	TWA:100 ppm	
Morpholine	110-91-8	ACGIH	TWA:20 ppm	Danger of cutaneous absorption
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	
Propane	74-98-6	ACGIH	Limit value not established:	simple asphyxiant
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	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

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/vapours/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

Physical state	Liquid
Specific Physical Form:	Aerosol
Colour	Amber
Odour	Mild Solvent
Odour threshold	No Data Available
pH	Not Applicable
Melting point/Freezing point	No Data Available
Boiling point	No Data Available
Flash Point	Approximately -40 °C
Evaporation rate	1
Flammability	Flammable Aerosol: Category 1.
Flammable Limits(LEL)	No Data Available
Flammable Limits(UEL)	No Data Available
Vapour Pressure	<=551,553.1 Pa
Relative Vapour Density	2
Density	0.863 g/ml
Relative density	Approximately 0.88 [Ref Std: WATER=1]
Water solubility	Nil
Solubility- non-water	No Data Available
Partition coefficient: n-octanol/ water	No Data Available
Autoignition temperature	No Data Available
Decomposition temperature	No Data Available
Kinematic Viscosity	116 mm ² /sec
Volatile Organic Compounds	< 25 % [Test Method:calculated per CARB title 2]
Volatile Organic Compounds	<= 424.2 g/l [Test Method:calculated SCAQMD rule 443.1]
Percent volatile	No Data Available
VOC Less H ₂ O & Exempt Solvents	No Data Available
Molecular weight	No Data Available

Particle Characteristics	Not Applicable
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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	Dermal	Not available	LD50 > 2,000 mg/kg
Non-hazardous components	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
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Methyl Acetate	Rabbit	No significant irritation
Propane	Rabbit	Minimal irritation
Non-hazardous components	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	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		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 species	Not carcinogenic
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	2 generation

				mg/l	
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	Not classified for development		NA	
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	NOAEL Not available	

				animal		
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 classification	Rat	NOAEL 1.1 mg/l	28 days
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	4 weeks

					mg/kg/day	
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
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	15 weeks

					mg/l	
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 classification	Guinea pig	LOAEL 900 mg/kg/day	13 days
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	Rat	NOAEL 160 mg/kg/day	30 days

			classification			
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

No data available.

SECTION 13: Disposal considerations**13.1. Disposal methods**

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

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. 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.

SECTION 14: Transport Information

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

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****Global inventory status**

Contact 3M for more information. The components of this material are in compliance with the provisions of the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Japan Chemical Substance Control Law. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the new substance notification requirements of CEPA. This product complies with Measures on Environmental Management of New Chemical

Substances. All ingredients are listed on or exempt from on China IECSC inventory. The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

SECTION 16: Other information

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Health: 3 **Flammability:** 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.

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3M Canada SDSs are available at www.3M.ca