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Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier
3M™ High Performance Industrial Plastic Adhesive 4693

Product Identification Numbers

ID Number	UPC	ID Number	UPC
62-4493-6530-3	00-21200-83759-3	62-4493-6535-2	
62-4493-7530-2	00-21200-83760-9	62-4493-8530-1	00-21200-83761-1
62-4493-9530-0	00-21200-83762-3		

7000046574, 7000121405, 7000046575, 7000000923, 7010310264

1.2. Recommended use and restrictions on use

Recommended use
Adhesive, Industrial use

1.3. Supplier's details

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

1.4. Emergency telephone number
1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification
Flammable Liquid: Category 2.
Carcinogenicity: Category 2.
Specific Target Organ Toxicity (single exposure): Category 3.

2.2. Label elements
Signal word
Danger

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Symbols
Flame |Exclamation mark |Health Hazard |

Pictograms



Hazard Statements
Highly flammable liquid and vapor.

Suspected of causing cancer.
May cause drowsiness or dizziness.

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.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof electrical, ventilating and lighting equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Avoid breathing vapor or spray.
Use only outdoors or in a well-ventilated area.
Wear protective gloves, eye protection, face protection, and if needed, respiratory protection (see SDS Section 8).

Response:
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF exposed or concerned: Call a POISON CENTER or doctor.
In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

Storage:
Store in a well-ventilated place. Keep cool.
Store locked up.

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

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Cyclohexane	110-82-7	60 - 80 Trade Secret *
Polyterpene Resin	31393-98-3	5 - 20
Styrene-Butadiene Polymer	9003-55-8	7 - 13
Acetone	67-64-1	0.5 - 5 Trade Secret *
Methyl Ethyl Ketone	78-93-3	< 2
Methyl isobutyl ketone	108-10-1	< 1

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

SECTION 4: First aid measures

4.1. Description of first aid measures

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

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

Eye Contact:
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

Central nervous system depression (headache, dizziness, drowsiness, incoordination, nausea, slurred speech, giddiness, and unconsciousness).

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

5.2. Special hazards arising from the substance or mixture
Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products

Substance	Condition
Aldehydes	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	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. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and

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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

Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up

Contain spill. Cover spill area with a fire-extinguishing foam. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

For industrial/occupational use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Wear low static or properly grounded shoes. Use personal protective equipment (gloves, respirators, etc.) as required. To minimize the risk of ignition, determine applicable electrical classifications for the process using this product and select specific local exhaust ventilation equipment to avoid flammable vapor accumulation. Ground/bond container and receiving equipment if there is potential for static electricity accumulation during transfer.

7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store away from heat. Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Methyl isobutyl ketone	108-10-1	ACGIH	TWA:20 ppm;STEL:75 ppm	A3: Confirmed animal carcin.
Methyl isobutyl ketone	108-10-1	OSHA	TWA:410 mg/m3(100 ppm)	
Cyclohexane	110-82-7	ACGIH	TWA:100 ppm	
Cyclohexane	110-82-7	OSHA	TWA:1050 mg/m3(300 ppm)	
Acetone	67-64-1	ACGIH	TWA:250 ppm;STEL:500 ppm	A4: Not class. as human

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				carcin
Acetone	67-64-1	OSHA	TWA:2400 mg/m3(1000 ppm)	
Methyl Ethyl Ketone	78-93-3	ACGIH	TWA:75 ppm;STEL:150 ppm	Danger of cutaneous absorption
Methyl Ethyl Ketone	78-93-3	OSHA	TWA:590 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
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. Use explosion-proof ventilation equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Safety Glasses with side shields

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.

For prolonged or repeated contact, gloves made from the following material(s) are recommended (breakthrough times are >4 hours): Polymer laminate

Any glove recommended for prolonged/repeated contact is also suitable for short-term/splash contact.

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapors
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
Color	Light Amber

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Odor	Mild Solvent
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point	*Not Applicable*
Boiling Point	>=81 ºC [*Details:*Cyclohexane]
Flash Point	-4 ºF [*Test Method:*Closed Cup]
Evaporation rate	>=2 [*Ref Std:*WATER=1]
Flammability	Flammable Liquid: Category 2.
Flammable Limits(LEL)	1.1 % volume
Flammable Limits(UEL)	8.0 % volume
Vapor Pressure	<=95 mmHg [@ 68 ºF]
Relative Vapor Density	0.8 [*Ref Std:*AIR=1]
Density	0.82 g/ml
Relative Density	0.82 [*Ref Std:*WATER=1]
Solubility in Water	Slight (less than 10%)
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	245 ºC
Decomposition temperature	*No Data Available*
Kinematic Viscosity	274 mm2/sec
Hazardous Air Pollutants	0 % weight [*Test Method:*Calculated]
Molecular weight	*No Data Available*
VOC Less H2O & Exempt Solvents	<=597 g/l [*Test Method:*calculated SCAQMD rule 443.1]
Solids Content	20 - 40 %
Particle Characteristics	*Not Applicable*

SECTION 10: Stability and reactivity

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

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Heat
Sparks and/or flames

10.5. Incompatible materials
Reducing agents
Strong oxidizing agents

10.6. Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

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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:
May be harmful if inhaled. 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:
May be harmful in contact with skin. Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

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

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

Carcinogenicity:
Contains a chemical or chemicals which can cause cancer.

Ingredient	CAS No.	Class Description	Regulation
Methyl isobutyl ketone	108-10-1	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >2,000 - =5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE >20 - =50 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
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
Polyterpene Resin	Dermal	Professional judgeme	LD50 estimated to be > 5,000 mg/kg

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Polyterpene Resin	Ingestion	Rat	LD50 > 2,000 mg/kg
Styrene-Butadiene Polymer	Ingestion	similar compounds	LD50 estimated to be > 5,000 mg/kg
Styrene-Butadiene Polymer	Dermal	similar health hazards	LD50 estimated to be > 5,000 mg/kg
Acetone	Dermal	Rabbit	LD50 > 15,688 mg/kg
Acetone	Inhalation-Vapor (4 hours)	Rat	LC50 76 mg/l
Acetone	Ingestion	Rat	LD50 5,800 mg/kg
Methyl Ethyl Ketone	Dermal	Rabbit	LD50 > 8,050 mg/kg
Methyl Ethyl Ketone	Inhalation-Vapor (4 hours)	Rat	LC50 34.5 mg/l
Methyl Ethyl Ketone	Ingestion	Rat	LD50 2,737 mg/kg
Methyl isobutyl ketone	Dermal	Rabbit	LD50 > 16,000 mg/kg
Methyl isobutyl ketone	Inhalation-Vapor (4 hours)	Rat	LC50 11 mg/l
Methyl isobutyl ketone	Ingestion	Rat	LD50 3,038 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Cyclohexane	Rabbit	Mild irritant
Polyterpene Resin	In vitro data	No significant irritation
Styrene-Butadiene Polymer	similar compounds	No significant irritation
Acetone	Mouse	Minimal irritation
Methyl Ethyl Ketone	Rabbit	Minimal irritation
Methyl isobutyl ketone	Rabbit	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
Cyclohexane	Rabbit	Mild irritant
Polyterpene Resin	In vitro data	No significant irritation
Styrene-Butadiene Polymer	Professional judgement	No significant irritation
Acetone	Rabbit	Severe irritant
Methyl Ethyl Ketone	Rabbit	Severe irritant
Methyl isobutyl ketone	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
Polyterpene Resin	Multiple animal species	Not classified
Styrene-Butadiene Polymer	similar compounds	Not classified
Methyl isobutyl ketone	Guinea pig	Not classified

Respiratory Sensitization

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For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
Cyclohexane	In Vitro	Not mutagenic
Cyclohexane	In vivo	Some positive data exist, but the data are not sufficient for classification
Polyterpene Resin	In Vitro	Not mutagenic
Styrene-Butadiene Polymer	In Vitro	Not mutagenic
Acetone	In vivo	Not mutagenic
Acetone	In Vitro	Some positive data exist, but the data are not sufficient for classification
Methyl Ethyl Ketone	In Vitro	Not mutagenic
Methyl isobutyl ketone	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Acetone	Not Specified	Multiple animal species	Not carcinogenic
Methyl Ethyl Ketone	Inhalation	Human	Not carcinogenic
Methyl isobutyl ketone	Inhalation	Multiple animal species	Carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
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
Acetone	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,700 mg/kg/day	13 weeks
Acetone	Inhalation	Not classified for development	Rat	NOAEL 5.2 mg/l	during organogenesis
Methyl Ethyl Ketone	Inhalation	Not classified for development	Rat	LOAEL 8.8 mg/l	during gestation
Methyl isobutyl ketone	Inhalation	Not classified for female reproduction	Multiple animal species	NOAEL 8.2 mg/l	2 generation
Methyl isobutyl ketone	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Methyl isobutyl ketone	Inhalation	Not classified for male reproduction	Multiple animal species	NOAEL 8.2 mg/l	2 generation
Methyl isobutyl ketone	Inhalation	Not classified for development	Mouse	NOAEL 12.3 mg/l	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Cyclohexane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and	NOAEL Not available	

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				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	
Acetone	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Acetone	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Acetone	Inhalation	immune system	Not classified	Human	NOAEL 1.19 mg/l	6 hours
Acetone	Inhalation	liver	Not classified	Guinea pig	NOAEL Not available	
Acetone	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
Methyl Ethyl Ketone	Inhalation	central nervous system depression	May cause drowsiness or dizziness	official classification	NOAEL Not available	
Methyl Ethyl Ketone	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Methyl Ethyl Ketone	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
Methyl Ethyl Ketone	Ingestion	liver	Not classified	Rat	NOAEL Not available	not applicable
Methyl Ethyl Ketone	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 1,080 mg/kg	not applicable
Methyl isobutyl ketone	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	LOAEL 0.1 mg/l	2 hours
Methyl isobutyl ketone	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Methyl isobutyl ketone	Inhalation	vascular system	Not classified	Dog	NOAEL Not available	not available
Methyl isobutyl ketone	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Rat	LOAEL 900 mg/kg	not applicable

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
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
Polyterpene Resin	Ingestion	heart	Not classified	Rat	NOAEL 331 mg/kg/day	90 days
Polyterpene Resin	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 331 mg/kg/day	90 days
Polyterpene Resin	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 331 mg/kg/day	90 days
Polyterpene Resin	Ingestion	liver	Not classified	Rat	NOAEL 331 mg/kg/day	90 days
Polyterpene Resin	Ingestion	nervous system	Not classified	Rat	NOAEL 331 mg/kg/day	90 days

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Polyterpene Resin	Ingestion	eyes	Not classified	Rat	NOAEL 331 mg/kg/day	90 days
Polyterpene Resin	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 331 mg/kg/day	90 days
Acetone	Dermal	eyes	Not classified	Guinea pig	NOAEL Not available	3 weeks
Acetone	Inhalation	hematopoietic system	Not classified	Human	NOAEL 3 mg/l	6 weeks
Acetone	Inhalation	immune system	Not classified	Human	NOAEL 1.19 mg/l	6 days
Acetone	Inhalation	kidney and/or bladder	Not classified	Guinea pig	NOAEL 119 mg/l	not available
Acetone	Inhalation	heart	Not classified	Rat	NOAEL 45 mg/l	8 weeks
Acetone	Inhalation	liver	Not classified	Rat	NOAEL 45 mg/l	8 weeks
Acetone	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 900 mg/kg/day	13 weeks
Acetone	Ingestion	heart	Not classified	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Acetone	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 200 mg/kg/day	13 weeks
Acetone	Ingestion	liver	Not classified	Mouse	NOAEL 3,896 mg/kg/day	14 days
Acetone	Ingestion	eyes	Not classified	Rat	NOAEL 3,400 mg/kg/day	13 weeks
Acetone	Ingestion	respiratory system	Not classified	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Acetone	Ingestion	muscles	Not classified	Rat	NOAEL 2,500 mg/kg	13 weeks
Acetone	Ingestion	skin	Not classified	Mouse	NOAEL 11,298 mg/kg/day	13 weeks
Acetone	Ingestion	bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 11,298 mg/kg/day	13 weeks
Methyl Ethyl Ketone	Dermal	nervous system	Not classified	Guinea pig	NOAEL Not available	31 weeks
Methyl Ethyl Ketone	Inhalation	liver	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Inhalation	heart	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Inhalation	endocrine system	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Inhalation	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Inhalation	immune system	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Inhalation	muscles	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Ingestion	liver	Not classified	Rat	NOAEL Not available	7 days
Methyl Ethyl Ketone	Ingestion	nervous system	Not classified	Rat	NOAEL 173 mg/kg/day	90 days
Methyl isobutyl ketone	Inhalation	liver	Not classified	Rat	NOAEL 0.41 mg/l	13 weeks
Methyl isobutyl ketone	Inhalation	heart	Not classified	Multiple	NOAEL 0.8	2 weeks

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				animal species	mg/l	
Methyl isobutyl ketone	Inhalation	kidney and/or bladder	Not classified	Multiple animal species	NOAEL 0.4 mg/l	90 days
Methyl isobutyl ketone	Inhalation	respiratory system	Not classified	Multiple animal species	NOAEL 4.1 mg/l	14 weeks
Methyl isobutyl ketone	Inhalation	endocrine system	Not classified	Multiple animal species	NOAEL 0.41 mg/l	90 days
Methyl isobutyl ketone	Inhalation	hematopoietic system	Not classified	Multiple animal species	NOAEL 0.41 mg/l	90 days
Methyl isobutyl ketone	Inhalation	nervous system	Not classified	Multiple animal species	NOAEL 0.41 mg/l	13 weeks
Methyl isobutyl ketone	Ingestion	endocrine system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Methyl isobutyl ketone	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Methyl isobutyl ketone	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Methyl isobutyl ketone	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Methyl isobutyl ketone	Ingestion	heart	Not classified	Rat	NOAEL 1,040 mg/kg/day	120 days
Methyl isobutyl ketone	Ingestion	immune system	Not classified	Rat	NOAEL 1,040 mg/kg/day	120 days
Methyl isobutyl ketone	Ingestion	muscles	Not classified	Rat	NOAEL 1,040 mg/kg/day	120 days
Methyl isobutyl ketone	Ingestion	nervous system	Not classified	Rat	NOAEL 1,040 mg/kg/day	120 days
Methyl isobutyl ketone	Ingestion	respiratory system	Not classified	Rat	NOAEL 1,040 mg/kg/day	120 days

Aspiration Hazard

Name	Value
Cyclohexane	Aspiration hazard
Methyl isobutyl ketone	Some positive data exist, but the data are not sufficient for classification

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

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SECTION 13: Disposal considerations

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

Incinerate in a permitted waste incineration facility. As a disposal alternative, utilize an acceptable permitted waste disposal facility. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable), D018 (Benzene), D035 (Methyl ethyl ketone)

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
Carcinogenicity
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):

Ingredient	C.A.S. No	% by Wt
Cyclohexane	110-82-7	Trade Secret 60 - 80
Methyl isobutyl ketone	108-10-1	< 1

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.

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SECTION 16: Other information

NFPA Hazard Classification
Health: 1 **Flammability:** 3 **Instability:** 0 **Special Hazards:** None

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

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