



Safety Data Sheet

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Document Group:	11-2978-2	Version Number:	43.00
Issue Date:	07/24/26	Supersedes Date:	02/25/25

SECTION 1: Identification

1.1. Product identifier

3M(tm) Adhesion Promoter K-500

Product Identification Numbers

ID Number	UPC	ID Number	UPC
70-0704-5766-1	00-21200-64031-5	70-0704-5854-5	00-21200-64047-6
75-3472-0928-2		JT-2400-0079-7	
JT-2400-1339-4	00-21200-64047-6		

7100118753, 7000091395, 7000008223, 7100118751

1.2. Recommended use and restrictions on use

Recommended use

Adhesion Promoter

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	3M Japan Automotive and Aerospace Solutions 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.
Skin Corrosion/Irritation: Category 2.
Serious Eye Damage/Irritation: Category 2A.
Respiratory Sensitizer: Category 1.
Skin Sensitizer: Category 1.
Reproductive Toxicity: Category 1B.

Specific Target Organ Toxicity (repeated exposure): Category 1.
Specific Target Organ Toxicity (single exposure): Category 3.
Aspiration Hazard: Category 1.

2.2. Label elements

Signal word

Danger

Symbols

Flame | Exclamation mark | Health Hazard |

Pictograms



Hazard Statements

Highly flammable liquid and vapor.

Causes skin irritation.

Causes serious eye irritation.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

May damage fertility or the unborn child.

May cause drowsiness or dizziness.

May be fatal if swallowed and enters airways.

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

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.

Do not breathe vapors.

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.

Contaminated work clothing should not be allowed out of the workplace.

Wear protective gloves, eye protection, and face protection.

In case of inadequate ventilation wear respiratory protection.

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

Continue rinsing.

IF exposed or concerned: Immediately call a POISON CENTER or doctor.

Get medical attention if you feel unwell.

Do NOT induce vomiting.

If eye irritation persists or if skin irritation or rash occurs: Get medical attention.

If experiencing respiratory symptoms: Call a POISON CENTER or doctor.

Take off contaminated clothing and wash it before reuse.

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.

Supplemental Information:

Persons previously sensitized to isocyanates may develop a cross-sensitization reaction to other isocyanates.

5% of the mixture consists of ingredients of unknown acute oral toxicity.

5% of the mixture consists of ingredients of unknown acute dermal toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Toluene	108-88-3	80 - 100 Trade Secret *
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	9016-87-9	1 - 5 Trade Secret *
CHLORINATED POLYPROPYLENE	68442-33-1	1 - 5
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	0.5 - 1.5 Trade Secret *
EPICHLOROHYDRIN-TRIMETHYLOLPROPANE COPOLYMER	30499-70-8	0.1 - 1 Trade Secret *
CHLOROFORM	67-66-3	< 0.05

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

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

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

Skin Contact:

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

Eye Contact:

Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

If Swallowed:

Do not induce vomiting. Get immediate medical attention.

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

Allergic respiratory reaction (difficulty breathing, wheezing, cough, and tightness of chest). Allergic skin reaction (redness, swelling,

blistering, and itching). Aspiration pneumonitis (coughing, gasping, choking, burning of the mouth, and difficulty breathing). Central nervous system depression (headache, dizziness, drowsiness, incoordination, nausea, slurred speech, giddiness, and unconsciousness). Target organ effects following prolonged or repeated exposure. See Section 11 for additional details.

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

<u>Substance</u>	<u>Condition</u>
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Cyanide	During Combustion
Irritant Vapors or Gases	During Combustion
Oxides of Nitrogen	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 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. Pour isocyanate decontaminant solution (90% water, 8% concentrated ammonia, 2% detergent) on spill and allow to react for 10 minutes. Or pour water on spill and allow to react for more than 30 minutes. Cover with absorbent material. 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 container approved for transportation by

appropriate authorities, but do not seal the container for 48 hours to avoid pressure build-up. 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. 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. 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. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Wear low static or properly grounded shoes. Use personal protective equipment (gloves, respirators, etc.) as required. To minimize the risk of ignition, determine applicable electrical classifications for the process using this product and select specific local exhaust ventilation equipment to avoid flammable vapor accumulation. Ground/bond container and receiving equipment if there is potential for static electricity accumulation during transfer.

7.2. Conditions for safe storage including any incompatibilities

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

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

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Methylene bisphenyl isocyanate (MDI)	101-68-8	ACGIH	TWA:0.005 ppm	
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	OSHA	CEIL:0.2 mg/m3(0.02 ppm)	
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	
CHLOROFORM	67-66-3	ACGIH	TWA:10 ppm	A3: Confirmed animal carcin.
CHLOROFORM	67-66-3	OSHA	CEIL:240 mg/m3(50 ppm)	
Methylene bisphenyl isocyanate (MDI)	9016-87-9	ACGIH	TWA:0.005 ppm	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Provide ventilated enclosure for curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control

device. 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
Indirect Vented Goggles

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.

Gloves made from the following material(s) are recommended: Polymer laminate

If this product is used in a manner that presents a higher potential for exposure (e.g., spraying, high splash potential, etc.), then use of a protective apron may be necessary. See recommended glove material(s) for determining appropriate apron material(s). If a glove material is not available as an apron, polymer laminate is a suitable option.

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 and particulates

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	Amber
Odor	Strong Solvent
Odor threshold	No Data Available
pH	Not Applicable
Melting point	No Data Available
Boiling Point	111 °C [Test Method:Estimated] [Details:Based On Toluene.]
Flash Point	4 °C [Test Method:Tagliabue Closed Cup] [Details:Based on Toluene]
Evaporation rate	Approximately 1 Units not avail. or not appl. [Ref Std:TOLUENE=1]
Flammability	Flammable Liquid: Category 2.
Flammable Limits(LEL)	1 % volume
Flammable Limits(UEL)	7.2 % volume
Vapor Pressure	22 mmHg [Details:@20 deg C]

Relative Vapor Density	3.14 [Ref Std: AIR=1]
Density	0.88 g/cm3
Relative Density	0.88 [Ref Std: WATER=1]
Solubility in Water	Nil
Solubility- non-water	No Data Available
Partition coefficient: n-octanol/ water	No Data Available
Autoignition temperature	480 °C [Test Method: Estimated] [Details: Based On Toluene.]
Decomposition temperature	No Data Available
Kinematic Viscosity	11.4 mm2/sec
Molecular weight	No Data Available
Volatile Organic Compounds	810 g/l
Percent volatile	<=95 % weight
VOC Less H2O & Exempt Solvents	< 836 g/l

Particle Characteristics *Not Applicable*

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat

Sparks and/or flames

Temperatures above the boiling point

10.5. Incompatible materials

Strong oxidizing agents

10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

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

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

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

Inhalation:

May be harmful if inhaled. Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Allergic Respiratory Reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest. May cause additional health effects (see below).

Skin Contact:

Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye Contact:

Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Ingestion:

Chemical (Aspiration) Pneumonitis: Signs/symptoms may include coughing, gasping, choking, burning of the mouth, difficulty breathing, bluish colored skin (cyanosis), and may be fatal. 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.

Prolonged or repeated exposure may cause target organ effects:

Ocular Effects: Signs/symptoms may include blurred or significantly impaired vision. Auditory Effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears. Olfactory Effects: Signs/symptoms may include decreased ability to detect odors and/or complete loss of smell. Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate. Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish colored skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.

Reproductive/Developmental Toxicity:

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

Carcinogenicity:

Ingredient	CAS No.	Class Description	Regulation
Chloroform	67-66-3	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Chloroform	67-66-3	Anticipated human carcinogen	National Toxicology Program Carcinogens

Additional Information:

Persons previously sensitized to isocyanates may develop a cross-sensitization reaction to other isocyanates.

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 >20 - =50 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 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
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	Dermal	Rabbit	LD50 > 5,000 mg/kg
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.368 mg/l
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	Ingestion	Rat	LD50 31,600 mg/kg
P,P'-Methylenebis(phenyl isocyanate)	Dermal	Rabbit	LD50 > 5,000 mg/kg
P,P'-Methylenebis(phenyl isocyanate)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.368 mg/l
P,P'-Methylenebis(phenyl isocyanate)	Ingestion	Rat	LD50 31,600 mg/kg
EPICHLOROHYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Dermal	Rat	LD50 > 3,170 mg/kg
EPICHLOROHYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Ingestion	Rat	LD50 3,398 mg/kg
CHLOROFORM	Dermal	Rabbit	LD50 > 3,980 mg/kg
CHLOROFORM	Inhalation-Vapor (4 hours)	Rat	LC50 47.6 mg/l
CHLOROFORM	Ingestion	Rat	LD50 908 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Toluene	Rabbit	Irritant
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	official classification	Irritant
P,P'-Methylenebis(phenyl isocyanate)	official classification	Irritant
EPICHLOROHYDRIN-TRIMETHYLOLPROPANE COPOLYMER	In vitro data	Irritant

Serious Eye Damage/Irritation

Name	Species	Value
Toluene	Rabbit	Moderate irritant
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	official classification	Severe irritant
P,P'-Methylenebis(phenyl isocyanate)	official classification	Severe irritant
EPICHLOROHYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Rabbit	Corrosive

Skin Sensitization

Name	Species	Value
Toluene	Guinea pig	Not classified
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	Mouse	Sensitizing
P,P'-Methylenebis(phenyl isocyanate)	Mouse	Sensitizing
EPICHLOROHYDRIN-TRIMETHYLOLPROPANE COPOLYMER	similar compounds	Sensitizing

Respiratory Sensitization

Name	Species	Value
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POLYMETHYLENE POLYPHENYLENE ISOCYANATE	Human	Sensitizing
P,P'-Methylenebis(phenyl isocyanate)	Human	Sensitizing

Germ Cell Mutagenicity

Name	Route	Value
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic
CHLORINATED POLYPROPYLENE	In Vitro	Not mutagenic
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	In Vitro	Some positive data exist, but the data are not sufficient for classification
P,P'-Methylenebis(phenyl isocyanate)	In Vitro	Some positive data exist, but the data are not sufficient for classification
EPICHLOROHYDRIN-TRIMETHYLOLPROPANE COPOLYMER	In Vitro	Some positive data exist, but the data are not sufficient for classification
EPICHLOROHYDRIN-TRIMETHYLOLPROPANE COPOLYMER	In vivo	Mutagenic

Carcinogenicity

Name	Route	Species	Value
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
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
P,P'-Methylenebis(phenyl isocyanate)	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
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
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
P,P'-Methylenebis(phenyl isocyanate)	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
EPICHLOROHYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Ingestion	Not classified for female reproduction	Rat	NOAEL 100 mg/kg/day	premating into lactation
EPICHLOROHYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Ingestion	Not classified for development	Rat	NOAEL 100 mg/kg/day	premating into lactation
EPICHLOROHYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Ingestion	Toxic to male reproduction	Rat	NOAEL 100 mg/kg/day	14 days

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure
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						Duration
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
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
P,P'-Methylenebis(phenyl isocyanate)	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
EPICHLOROHYDRIN-TRIMETHYLOLPROPANE COPOLYMER	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
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	Not classified	Mouse	NOAEL 600	14 days

		system			mg/kg/day	
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
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks
P,P'-Methylenebis(phenyl isocyanate)	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks
EPICHLOROXYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Ingestion	heart	Not classified	Rat	NOAEL 300 mg/kg/day	43 days
EPICHLOROXYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Ingestion	skin	Not classified	Rat	NOAEL 300 mg/kg/day	43 days
EPICHLOROXYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Ingestion	endocrine system	Not classified	Rat	NOAEL 300 mg/kg/day	43 days
EPICHLOROXYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 300 mg/kg/day	43 days
EPICHLOROXYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Ingestion	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 300 mg/kg/day	43 days
EPICHLOROXYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 300 mg/kg/day	43 days
EPICHLOROXYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Ingestion	liver	Not classified	Rat	NOAEL 300 mg/kg/day	43 days
EPICHLOROXYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Ingestion	immune system	Not classified	Rat	NOAEL 300 mg/kg/day	43 days
EPICHLOROXYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Ingestion	muscles	Not classified	Rat	NOAEL 300 mg/kg/day	43 days
EPICHLOROXYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Ingestion	nervous system	Not classified	Rat	NOAEL 300 mg/kg/day	43 days
EPICHLOROXYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Ingestion	eyes	Not classified	Rat	NOAEL 300 mg/kg/day	43 days
EPICHLOROXYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 300 mg/kg/day	43 days
EPICHLOROXYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Ingestion	respiratory system	Not classified	Rat	NOAEL 300 mg/kg/day	43 days
EPICHLOROXYDRIN-TRIMETHYLOLPROPANE COPOLYMER	Ingestion	vascular system	Not classified	Rat	NOAEL 300 mg/kg/day	43 days

Aspiration Hazard

Name	Value
Toluene	Aspiration hazard

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

SECTION 12: Ecological information**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.

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), D022 (Chloroform)

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

Aspiration Hazard

Reproductive toxicity

Respiratory or Skin Sensitization

Serious eye damage or eye irritation

Skin Corrosion or Irritation

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>
Toluene	108-88-3	Trade Secret 80 - 100
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	9016-87-9	Trade Secret 1 - 5
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	Trade Secret 0.5 - 1.5

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information.

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

The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information.

The components of this material are in compliance with the provisions of Japan Industrial Safety and Health Law. Certain restrictions may apply. Contact the selling division for additional information.

The components of this material are in compliance with the provisions of the Korean Toxic Chemical 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 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 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: 2 **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.

Document Group:	11-2978-2	Version Number:	43.00
Issue Date:	07/24/26	Supersedes Date:	02/25/25

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