



Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier

3M Brand Adhesion Promoter N-200 (Red Label)

Product Identification Numbers

JT-1400-8747-2, JT-1400-9494-0, JT-2400-0954-1, JT-2400-1478-0, JT-2800-0254-7, JT-2800-0307-3, JT-2800-1064-9, JT-2800-1065-6, JT-2800-1066-4, JT-2800-1067-2, JT-2800-1807-1, JT-2800-2204-0

1.2. Recommended use and restrictions on use

Recommended use

Adhesion promoter

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Sumitomo/3M Ltd. Automotive 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.
Serious Eye Damage/Irritation: Category 2A.
Skin Corrosion/Irritation: Category 2.
Respiratory Sensitizer: Category 1.
Skin Sensitizer: Category 1.
Aspiration Hazard: Category 1.
Reproductive Toxicity: Category 1B.
Specific Target Organ Toxicity (central nervous system): Category 3.
Specific Target Organ Toxicity (repeated exposure): Category 1.

2.2. Label elements

Signal word

Danger

Symbols

Flame | Exclamation mark | Health Hazard |

Pictograms



Hazard Statements

Highly flammable liquid and vapor.

Causes serious eye irritation.

Causes skin irritation.

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

May cause an allergic skin reaction.

May be fatal if swallowed and enters airways.

May cause drowsiness or dizziness.

May damage fertility or the unborn child.

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/sparks/open flames/hot surfaces. - No smoking.

Ground/bond container and receiving equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Keep container tightly closed.

Use explosion-proof electrical/ventilating/lighting equipment.

Do not breathe dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

In case of inadequate ventilation wear respiratory protection.

Wear protective gloves and eye/face protection.

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

Wash thoroughly after handling.

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

Response:

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

IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

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

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

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

Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Wash contaminated clothing before reuse.

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Do NOT induce vomiting.

IF exposed or concerned: Get medical advice/attention.

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 container tightly closed.

Keep cool.

Store locked up.

Disposal:

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

2.3. Hazards not otherwise classified

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

2% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
TOLUENE	108-88-3	85 - 95 Trade Secret *
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	9016-87-9	1 - 5 Trade Secret *
CHLORINATED RUBBER	9006-03-5	1 - 5
ETHYL ACETATE	141-78-6	1 - 5 Trade Secret *
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	101-68-8	0.1 - 1.0 Trade Secret *
(GAMMA-MERCAPTOPROPYL)TRIMETHOXY-SILANE	4420-74-0	0.1 - 1.0
ALKANES, C14-17, CHLORO	85535-85-9	0.1 - 1.0

*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

See Section 11.1. Information on toxicological effects.

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

Not applicable.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for 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>
Isocyanates	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Chloride	During Combustion
Hydrogen Cyanide	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.

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. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment. 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. An appropriate aqueous film forming foam (AFFF) is recommended. 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.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

For industrial or professional use only. 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.) Keep away from reactive metals (eg. Aluminum, zinc etc.) to avoid the formation of hydrogen gas that could create an explosion hazard. 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 container tightly closed. Keep cool. Protect from sunlight. 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

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
FREE ISOCYANATES	101-68-8	Manufacturer determined	TWA:0.005 ppm;STEL:0.02 ppm	
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	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
TOLUENE	108-88-3	CMRG	STEL:75 ppm	Skin Notation
TOLUENE	108-88-3	OSHA	TWA:200 ppm;CEIL:300 ppm	
ETHYL ACETATE	141-78-6	ACGIH	TWA:400 ppm	
ETHYL ACETATE	141-78-6	OSHA	TWA:1400 mg/m3(400 ppm)	
Benzene, 1,1'-methylenebis[4-isocyanato-	9016-87-9	ACGIH	TWA:0.005 ppm	
Benzene, 1,1'-methylenebis[4-isocyanato-	9016-87-9	OSHA	CEIL:0.2 mg/m3(0.02 ppm)	
FREE ISOCYANATES	9016-87-9	Manufacturer determined	TWA:0.005 ppm;STEL:0.02 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:

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 (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - 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:

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

General Physical Form:	Liquid
Odor, Color, Grade:	Solvent odor; Tan liquid
Odor threshold	<i>No Data Available</i>
pH	<i>Not Applicable</i>
Melting point	<i>Not Applicable</i>
Boiling Point	77 °C [<i>Test Method:</i> Estimated] [<i>Details:</i> (initial)]
Flash Point	6 °C [<i>Test Method:</i> Tagliabue Closed Cup]
Evaporation rate	<i>No Data Available</i>
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	1 % volume
Flammable Limits(UEL)	8 % volume
Vapor Pressure	24 mmHg [@ 20 °C]
Vapor Density	3 [<i>Ref Std:</i> AIR=1]
Density	0.9 g/cm ³
Specific Gravity	0.9 [<i>Ref Std:</i> WATER=1]
Solubility in Water	Nil
Solubility- non-water	<i>No Data Available</i>
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Autoignition temperature	360 °C
Decomposition temperature	<i>No Data Available</i>
Viscosity	2.1 centipoise [@ 20 °C]

Volatile Organic Compounds	864 g/l [Test Method: calculated SCAQMD rule 443.1]
Percent volatile	96 %
VOC Less H2O & Exempt Solvents	864 g/l [Test Method: calculated SCAQMD rule 443.1]

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

High shear and high temperature conditions

Sparks and/or flames

10.5. Incompatible materials

Metal powder

Reactive metals

10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
Oxides of Sulfur	Not Specified

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 target organ effects after inhalation.

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 target organ effects after ingestion.

Target Organ Effects:**Single exposure may cause:**

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:

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.

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	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
ETHYL ACETATE	Dermal	Rabbit	LD50 > 18,000 mg/kg

ETHYL ACETATE	Inhalation-Vapor (4 hours)	Rat	LC50 70.5 mg/l
ETHYL ACETATE	Ingestion	Rat	LD50 5,620 mg/kg
CHLORINATED RUBBER	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	Inhalation-Vapor		LC50 estimated to be 10 - 20 mg/l
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	Dermal	Rabbit	LD50 > 5,000 mg/kg
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.369 mg/l
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	Ingestion	Rat	LD50 31,600 mg/kg
ALKANES, C14-17, CHLORO	Dermal		estimated to be > 5,000 mg/kg
ALKANES, C14-17, CHLORO	Inhalation-Dust/Mist		estimated to be > 12.5 mg/l
ALKANES, C14-17, CHLORO	Inhalation-Vapor		estimated to be > 50 mg/l
ALKANES, C14-17, CHLORO	Ingestion		estimated to be > 5,000 mg/kg
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	Inhalation-Vapor		LC50 estimated to be 10 - 20 mg/l
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	Dermal	Rabbit	LD50 > 5,000 mg/kg
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.369 mg/l
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	Ingestion	Rat	LD50 31,600 mg/kg
(GAMMA-MERCAPTOPROPYL)TRIMETHOXY-SILANE	Dermal	Rabbit	LD50 2,270 mg/kg
(GAMMA-MERCAPTOPROPYL)TRIMETHOXY-SILANE	Ingestion	Rat	LD50 770 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
TOLUENE	Rabbit	Irritant
ETHYL ACETATE	Rabbit	Minimal irritation
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	official classification	Irritant
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	official classification	Irritant

Serious Eye Damage/Irritation

Name	Species	Value
TOLUENE	Rabbit	Moderate irritant
ETHYL ACETATE	Rabbit	Mild irritant
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	official classification	Severe irritant
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	official classification	Severe irritant

Skin Sensitization

Name	Species	Value
TOLUENE	Guinea pig	Not sensitizing
ETHYL ACETATE	Guinea pig	Not sensitizing
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	official classification	Sensitizing
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	official classification	Sensitizing

Respiratory Sensitization

Name	Species	Value
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
ETHYL ACETATE	In Vitro	Not mutagenic
ETHYL ACETATE	In vivo	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

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	Some positive female reproductive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
TOLUENE	Inhalation	Some positive male reproductive data exist, but the data are not sufficient for classification	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	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 0.004 mg/l	during organogenesis
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 0.004 mg/l	during organogenesis

Target Organ(s)**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure 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	Some positive data exist, but the data are not sufficient for classification	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

ETHYL ACETATE	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
ETHYL ACETATE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
ETHYL ACETATE	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
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	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
TOLUENE	Inhalation	auditory system nervous system eyes 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 liver kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 11.3 mg/l	15 weeks
TOLUENE	Inhalation	endocrine system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.1 mg/l	4 weeks
TOLUENE	Inhalation	immune system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL Not available	20 days
TOLUENE	Inhalation	bone, teeth, nails, and/or hair	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 1.1 mg/l	8 weeks
TOLUENE	Inhalation	hematopoietic system vascular system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
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	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 2,500 mg/kg/day	13 weeks
TOLUENE	Ingestion	liver kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL 2,500 mg/kg/day	13 weeks
TOLUENE	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 600 mg/kg/day	14 days
TOLUENE	Ingestion	endocrine system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 105 mg/kg/day	28 days
TOLUENE	Ingestion	immune system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 105 mg/kg/day	4 weeks
ETHYL ACETATE	Inhalation	endocrine system liver nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 0.043 mg/l	90 days
ETHYL ACETATE	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rabbit	LOAEL 16 mg/l	40 days
ETHYL ACETATE	Ingestion	hematopoietic system liver kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 3,600 mg/kg/day	90 days
POLYMETHYLENE	Inhalation	respiratory system	Causes damage to organs	Rat	LOAEL	13 weeks

POLYPHENYLENE ISOCYANATE			through prolonged or repeated exposure		0.004 mg/l	
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

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. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. 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)

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.

311/312 Hazard Categories:

Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

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	85 - 95
POLYMETHYLENE POLYPHENYLENE ISOCYANATE	9016-87-9	1 - 5
POLYMETHYLENE POLYPHENYLENE ISOCYANATE (Benzene, 1,1'-methylenebis[4-isocyanato-])	9016-87-9	1 - 5
POLYMETHYLENE POLYPHENYLENE ISOCYANATE (DIISOCYANATES (CERTAIN CHEMICALS ONLY))	9016-87-9	1 - 5
P,P'-METHYLENEBIS(PHENYL ISOCYANATE) (Benzene, 1,1'-methylenebis[4-isocyanato-])	101-68-8	0.1 - 1.0
P,P'-METHYLENEBIS(PHENYL ISOCYANATE) (DIISOCYANATES (CERTAIN CHEMICALS ONLY))	101-68-8	0.1 - 1.0

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 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.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 Flammability: 3 Instability: 1 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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