Safety Data Sheet

This Safety Data Sheet has been prepared in accordance with the SS586 Specification for Hazard Communication for Hazardous Chemicals and Dangerous Goods.

Document group:	28-1919-1	**Version number:**	1.05
Issue Date:	24/07/2018	**Supersedes date:**	05/06/2018

SECTION 1: Identification

1.1. Product identifier
3M Scotchkote Urethane Coating UV 840 (Part B)

Product Identification Numbers
GR-2001-1572-7 GR-2001-1608-9

1.2. Recommended use and restrictions on use

Recommended use
Coating., UV stable coating.

1.3. Supplier's details
Address: 3M Technologies (S) Pte Ltd,10 Ang Mo Kio Street 65, Singapore 569059
Telephone: +65 6450 8888
Website: www.3m.com.sg

1.4. Emergency telephone number
+65 6591 6888 (8.15am - 5.00pm, Monday - Friday)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Flammable liquid: Category 3.
Respiratory Sensitizer: Category 1A.
Skin Sensitizer: Category 1A.
Carcinogenicity: Category 2.
Specific Target Organ Toxicity (single exposure): Category 1.
Specific Target Organ Toxicity (single exposure): 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

H226	Flammable liquid and vapour.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H370	Causes damage to organs: sensory organs
H372	Causes damage to organs through prolonged or repeated exposure: nervous system
H373	May cause damage to organs through prolonged or repeated exposure: sensory organs

PRECAUTIONARY STATEMENTS

Prevention:

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P284	Wear respiratory protection.
P280E	Wear protective gloves.

Response:

P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P308 + P311	IF exposed or concerned: Call a POISON CENTER or doctor/physician.
P370 + P378G	In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

2.3. Other hazards

Persons previously sensitised to isocyanates may develop a cross-sensitisation reaction to other isocyanates.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
Hexamethylene diisocyanate, oligomers	28182-81-2	70 - 80
1-Methoxy-2-propyl acetate	108-65-6	10 - 20
Ethyl 3-ethoxypropionate	763-69-9	5 - 10
Xylene	1330-20-7	5 - 10
Ethylbenzene	100-41-4	1 - 5
Hexamethylene diisocyanate	822-06-0	0 - 0.5

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 for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately 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
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

Substance	Condition
Carbon monoxide.	During combustion.
Carbon dioxide.	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. 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. 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 dykes 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 authorised person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and Safety Data Sheet. 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 or professional use only. Do not use in a confined area with minimal air exchange. 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/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Wear low static or properly grounded shoes. Use personal protective equipment (eg. gloves, respirators…) 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. Store away from heat. Store away from acids. Store away from strong bases. Store away from oxidising agents. Store away from amines.

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	CAS Nbr	Agency	Limit type	Additional comments
Ethylbenzene	100-41-4	ACGIH	TWA:20 ppm	A3: Confirmed animal carcin.
Ethylbenzene	100-41-4	Singapore PELs	TWA(8 hours):434 mg/m3(100 ppm);STEL(15 minutes):543 mg/m3(125 ppm)	
1-Methoxy-2-propyl acetate	108-65-6	AIHA	TWA:50 ppm	
Xylene	1330-20-7	ACGIH	TWA:100 ppm;STEL:150 ppm	A4: Not class. as human carcin
Xylene	1330-20-7	Singapore PELs	TWA(8 hours):434	

			mg/m3(100 ppm);STEL(15 minutes):651 mg/m3(150 ppm)	
Hexamethylene diisocyanate	822-06-0	ACGIH	TWA:0.005 ppm	
Hexamethylene diisocyanate	822-06-0	Singapore PELs	TWA(8 hours):0.034 mg/m3(0.005 ppm)	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
Singapore PELs : Singapore. Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order
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/vapours/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:
Full face shield.
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
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:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapours 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.
Specific Physical Form:	Liquid.
Appearance/Odour	Aromatic solvent odour; Clear yellow colour
Odour threshold	*No data available.*

pH	*Not applicable.*
Melting point/Freezing point	*Not applicable.*
Boiling point/Initial boiling point/Boiling range	145 ºC
Flash point	38 ºC [*Test Method:*Closed Cup]
Evaporation rate	*No data available.*
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	0.9 % volume
Flammable Limits(UEL)	10.8 % volume
Vapour pressure	<=1,066.6 Pa
Vapour density	*No data available.*
Density	1.07 g/ml
Relative density	1.07 [*Ref Std:*WATER=1]
Water solubility	Negligible
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Autoignition temperature	460 ºC
Decomposition temperature	*No data available.*
Viscosity	200 mPa-s [@ 23 ºC]
Volatile organic compounds (VOC)	313.25 g/l [*Test Method:*Estimated] [*Details:*EU Definition (Part B)]
Percent volatile	29.27 % weight

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 polymerisation will not occur.

10.4 Conditions to avoid
Heat.
Sparks and/or flames.

10.5 Incompatible materials
Alcohols.
Amines.
Strong acids.
Strong bases.
Strong oxidising 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

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 labelling, 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
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
Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye contact
Vapours released during curing may cause eye irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

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

Additional Health Effects:

Single exposure may cause target organ effects:
Auditory effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears.

Prolonged or repeated exposure may cause target organ effects:
Auditory effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears.
Neurological effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and changes in blood pressure and heart rate.

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

Additional information:
Persons previously sensitised to isocyanates may develop a cross-sensitisation 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 >50 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Hexamethylene diisocyanate, oligomers	Inhalation-Dust/Mist (4 hours)	Professional judgement	LC50 estimated to be 1 - 5 mg/l

Hexamethylene diisocyanate, oligomers	Dermal	Rabbit	LD50 > 5,000 mg/kg
Hexamethylene diisocyanate, oligomers	Ingestion	Rat	LD50 > 5,000 mg/kg
1-Methoxy-2-propyl acetate	Dermal	Rabbit	LD50 > 5,000 mg/kg
1-Methoxy-2-propyl acetate	Inhalation-Vapor (4 hours)	Rat	LC50 > 28.8 mg/l
1-Methoxy-2-propyl acetate	Ingestion	Rat	LD50 8,532 mg/kg
Xylene	Dermal	Rabbit	LD50 > 4,200 mg/kg
Xylene	Inhalation-Vapor (4 hours)	Rat	LC50 29 mg/l
Xylene	Ingestion	Rat	LD50 3,523 mg/kg
Ethyl 3-ethoxypropionate	Dermal	Rabbit	LD50 4,080 mg/kg
Ethyl 3-ethoxypropionate	Inhalation-Vapor (4 hours)	Rat	LC50 > 14.4 mg/l
Ethyl 3-ethoxypropionate	Ingestion	Rat	LD50 3,200 mg/kg
Ethylbenzene	Dermal	Rabbit	LD50 15,433 mg/kg
Ethylbenzene	Inhalation-Vapor (4 hours)	Rat	LC50 17.4 mg/l
Ethylbenzene	Ingestion	Rat	LD50 4,769 mg/kg
Hexamethylene diisocyanate	Dermal	Rabbit	LD50 570 mg/kg
Hexamethylene diisocyanate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.12 mg/l
Hexamethylene diisocyanate	Ingestion	Rat	LD50 710 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Hexamethylene diisocyanate, oligomers	Rabbit	Mild irritant
1-Methoxy-2-propyl acetate	Rabbit	No significant irritation
Xylene	Rabbit	Mild irritant
Ethyl 3-ethoxypropionate	Rabbit	No significant irritation
Ethylbenzene	Rabbit	Mild irritant
Hexamethylene diisocyanate	Rabbit	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Hexamethylene diisocyanate, oligomers	Rabbit	Mild irritant
1-Methoxy-2-propyl acetate	Rabbit	Mild irritant
Xylene	Rabbit	Mild irritant
Ethyl 3-ethoxypropionate	Rabbit	Mild irritant
Ethylbenzene	Rabbit	Moderate irritant
Hexamethylene diisocyanate	Rabbit	Corrosive

Skin Sensitisation

Name	Species	Value
Hexamethylene diisocyanate, oligomers	Guinea pig	Sensitising
1-Methoxy-2-propyl acetate	Guinea pig	Not classified
Ethyl 3-ethoxypropionate	Guinea pig	Not classified
Ethylbenzene	Human	Not classified
Hexamethylene diisocyanate	Multiple animal species	Sensitising

Respiratory Sensitisation

Name	Species	Value
Hexamethylene diisocyanate, oligomers	similar compounds	Not classified
Hexamethylene diisocyanate	Human and animal	Sensitising

Germ Cell Mutagenicity

Name	Route	Value
Hexamethylene diisocyanate, oligomers	In Vitro	Not mutagenic
Hexamethylene diisocyanate, oligomers	In vivo	Not mutagenic
1-Methoxy-2-propyl acetate	In Vitro	Not mutagenic
Xylene	In Vitro	Not mutagenic
Xylene	In vivo	Not mutagenic
Ethyl 3-ethoxypropionate	In Vitro	Not mutagenic
Ethylbenzene	In vivo	Not mutagenic
Ethylbenzene	In Vitro	Some positive data exist, but the data are not sufficient for classification
Hexamethylene diisocyanate	In Vitro	Not mutagenic
Hexamethylene diisocyanate	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Xylene	Dermal	Rat	Not carcinogenic
Xylene	Ingestion	Multiple animal species	Not carcinogenic
Xylene	Inhalation	Human	Some positive data exist, but the data are not sufficient for classification
Ethylbenzene	Inhalation	Multiple animal species	Carcinogenic.
Hexamethylene diisocyanate	Inhalation	Rat	Not carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
1-Methoxy-2-propyl acetate	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1-Methoxy-2-propyl acetate	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1-Methoxy-2-propyl acetate	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1-Methoxy-2-propyl acetate	Inhalation	Not classified for development	Rat	NOAEL 21.6 mg/l	during organogenesis
Xylene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure
Xylene	Ingestion	Not classified for development	Mouse	NOAEL Not available	during organogenesis
Xylene	Inhalation	Not classified for development	Multiple animal species	NOAEL Not available	during gestation
Ethylbenzene	Inhalation	Not classified for development	Rat	NOAEL 4.3 mg/l	premating & during gestation
Hexamethylene diisocyanate	Inhalation	Not classified for female reproduction	Rat	NOAEL 0.002 mg/l	7 weeks

Hexamethylene diisocyanate	Inhalation	Not classified for development	Rat	NOAEL 0.002 mg/l	7 weeks
Hexamethylene diisocyanate	Inhalation	Not classified for male reproduction	Rat	NOAEL 0.014 mg/l	4 weeks

Lactation

Name	Route	Species	Value
Xylene	Ingestion	Mouse	Not classified for effects on or via lactation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Hexamethylene diisocyanate, oligomers	Inhalation	respiratory irritation	May cause respiratory irritation		NOAEL Not available	
1-Methoxy-2-propyl acetate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Xylene	Inhalation	auditory system	Causes damage to organs	Rat	LOAEL 6.3 mg/l	8 hours
Xylene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Xylene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Xylene	Inhalation	eyes	Not classified	Rat	NOAEL 3.5 mg/l	not available
Xylene	Inhalation	liver	Not classified	Multiple animal species	NOAEL Not available	
Xylene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL Not available	
Xylene	Ingestion	eyes	Not classified	Rat	NOAEL 250 mg/kg	not applicable
Ethylbenzene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Ethylbenzene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
Ethylbenzene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
Hexamethylene diisocyanate	Inhalation	respiratory irritation	May cause respiratory irritation	Human and animal	NOAEL Not available	
Hexamethylene diisocyanate	Inhalation	blood	Not classified	Human	NOAEL Not available	occupational exposure

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Hexamethylene diisocyanate, oligomers	Inhalation	immune system | blood	Not classified	Rat	NOAEL 0.084 mg/l	2 weeks
1-Methoxy-2-propyl acetate	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 16.2 mg/l	9 days
1-Methoxy-2-propyl acetate	Inhalation	olfactory system	Not classified	Mouse	LOAEL 1.62 mg/l	9 days
1-Methoxy-2-propyl acetate	Inhalation	blood	Not classified	Multiple animal species	NOAEL 16.2 mg/l	9 days
1-Methoxy-2-propyl	Ingestion	endocrine system	Not classified	Rat	NOAEL	44 days

acetate					1,000 mg/kg/day	
Xylene	Inhalation	nervous system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.4 mg/l	4 weeks
Xylene	Inhalation	auditory system	May cause damage to organs though prolonged or repeated exposure	Rat	LOAEL 7.8 mg/l	5 days
Xylene	Inhalation	liver	Not classified	Multiple animal species	NOAEL Not available	
Xylene	Inhalation	heart | endocrine system | gastrointestinal tract | hematopoietic system | muscles | kidney and/or bladder | respiratory system	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Ingestion	auditory system	Not classified	Rat	NOAEL 900 mg/kg/day	2 weeks
Xylene	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,500 mg/kg/day	90 days
Xylene	Ingestion	liver	Not classified	Multiple animal species	NOAEL Not available	
Xylene	Ingestion	heart | skin | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | immune system | nervous system | respiratory system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Ethyl 3-ethoxypropionate	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 6 mg/l	90 days
Ethyl 3-ethoxypropionate	Inhalation	nervous system | heart | liver | immune system | kidney and/or bladder	Not classified	Rat	NOAEL 6 mg/l	17 days
Ethyl 3-ethoxypropionate	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	17 days
Ethyl 3-ethoxypropionate	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Ethyl 3-ethoxypropionate	Ingestion	kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	17 days
Ethylbenzene	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.1 mg/l	2 years
Ethylbenzene	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 1.1 mg/l	103 weeks
Ethylbenzene	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 3.4 mg/l	28 days
Ethylbenzene	Inhalation	auditory system	Not classified	Rat	NOAEL 2.4 mg/l	5 days
Ethylbenzene	Inhalation	endocrine system	Not classified	Mouse	NOAEL 3.3 mg/l	103 weeks
Ethylbenzene	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 3.3 mg/l	2 years
Ethylbenzene	Inhalation	bone, teeth, nails, and/or hair | muscles	Not classified	Multiple animal species	NOAEL 4.2 mg/l	90 days

Ethylbenzene	Inhalation	heart | immune system | respiratory system	Not classified	Multiple animal species	NOAEL 3.3 mg/l	2 years
Ethylbenzene	Ingestion	liver | kidney and/or bladder	Not classified	Rat	NOAEL 680 mg/kg/day	6 months
Hexamethylene diisocyanate	Inhalation	liver | kidney and/or bladder	Not classified	Rat	NOAEL 0.002 mg/l	3 weeks
Hexamethylene diisocyanate	Inhalation	endocrine system	Not classified	Rat	NOAEL 0.0014 mg/l	4 weeks
Hexamethylene diisocyanate	Inhalation	blood	Not classified	Rat	NOAEL 0.0012 mg/l	2 years
Hexamethylene diisocyanate	Inhalation	nervous system	Not classified	Rat	NOAEL 0.002 mg/l	7 weeks
Hexamethylene diisocyanate	Inhalation	heart	Not classified	Rat	NOAEL 0.001 mg/l	90 days

Aspiration Hazard

Name	Value
Xylene	Aspiration hazard
Ethylbenzene	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

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labelling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

12.1. Toxicity

Acute aquatic hazard:
GHS Acute 3: Harmful to aquatic life.

Chronic aquatic hazard:
Not chronically toxic to aquatic life by GHS criteria.

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
Hexamethylene diisocyanate, oligomers	28182-81-2	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
Hexamethylene diisocyanate, oligomers	28182-81-2	Zebra Fish	Experimental	96 hours	Lethal Level 50%	>100 mg/l
Hexamethylene diisocyanate, oligomers	28182-81-2	Green algae	Experimental	72 hours	Effect Concentration 10%	370 mg/l
1-Methoxy-2-propyl acetate	108-65-6	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
1-Methoxy-2-propyl acetate	108-65-6	Rainbow trout	Experimental	96 hours	LC50	134 mg/l
1-Methoxy-2-propyl acetate	108-65-6	Water flea	Experimental	48 hours	EC50	370 mg/l

1-Methoxy-2-propyl acetate	108-65-6	Green algae	Experimental	72 hours	NOEC	1,000 mg/l
1-Methoxy-2-propyl acetate	108-65-6	Water flea	Experimental	21 days	NOEC	100 mg/l
Ethyl 3-ethoxypropionate	763-69-9	Fathead minnow	Experimental	96 hours	LC50	45.3 mg/l
Ethyl 3-ethoxypropionate	763-69-9	Green Algae	Experimental	72 hours	EC50	>86 mg/l
Ethyl 3-ethoxypropionate	763-69-9	Water flea	Experimental	48 hours	EC50	>92 mg/l
Ethyl 3-ethoxypropionate	763-69-9	Green Algae	Experimental	72 hours	NOEC	86 mg/l
Xylene	1330-20-7		Data not available or insufficient for classification			
Ethylbenzene	100-41-4	Atlantic Silverside	Experimental	96 hours	LC50	5.1 mg/l
Ethylbenzene	100-41-4	Green Algae	Experimental	96 hours	EC50	3.6 mg/l
Ethylbenzene	100-41-4	Mysid Shrimp	Experimental	96 hours	LC50	2.6 mg/l
Ethylbenzene	100-41-4	Rainbow trout	Experimental	96 hours	LC50	4.2 mg/l
Ethylbenzene	100-41-4	Water flea	Experimental	48 hours	EC50	1.8 mg/l
Ethylbenzene	100-41-4	Water flea	Experimental	7 days	NOEC	0.96 mg/l
Hexamethylene diisocyanate	822-06-0	Green Algae	Estimated	96 hours	EC50	14.8 mg/l
Hexamethylene diisocyanate	822-06-0	Ricefish	Estimated	96 hours	LC50	71 mg/l
Hexamethylene diisocyanate	822-06-0	Water flea	Estimated	48 hours	EC50	27 mg/l
Hexamethylene diisocyanate	822-06-0	Green Algae	Estimated	72 hours	NOEC	10 mg/l
Hexamethylene diisocyanate	822-06-0	Water flea	Estimated	21 days	NOEC	4.2 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Hexamethylene diisocyanate, oligomers	28182-81-2	Experimental Hydrolysis		Hydrolytic half-life	7.7 hours (t 1/2)	Other methods
Hexamethylene diisocyanate, oligomers	28182-81-2	Experimental Biodegradation	28 days	BOD	1 % weight	Other methods
1-Methoxy-2-propyl acetate	108-65-6	Experimental Biodegradation	28 days	BOD	87.2 % BOD/ThBOD	OECD 301C - MITI test (I)
Ethyl 3-ethoxypropionate	763-69-9	Experimental Photolysis		Photolytic half-life (in air)	1.2 days (t 1/2)	Other methods
Ethyl 3-ethoxypropiona	763-69-9	Experimental Biodegradation	18 days	% CO2 produced	100 % weight	OECD 301B - Modified sturm or CO2

te						
Xylene	1330-20-7	Data not available-insufficient			N/A	
Ethylbenzene	100-41-4	Experimental Photolysis		Photolytic half-life (in air)	4.26 days (t 1/2)	Other methods
Ethylbenzene	100-41-4	Experimental Biodegradation	28 days	CO2 evolution	70-80 % weight	Other methods
Hexamethylene diisocyanate	822-06-0	Experimental Hydrolysis		Hydrolytic half-life	5 minutes (t 1/2)	Other methods
Hexamethylene diisocyanate	822-06-0	Estimated Biodegradation	14 days	BOD	55.5 % weight	OECD 301C - MITI test (I)

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Hexamethylene diisocyanate, oligomers	28182-81-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
1-Methoxy-2-propyl acetate	108-65-6	Experimental Bioconcentration		Log Kow	0.36	Other methods
Ethyl 3-ethoxypropionate	763-69-9	Experimental Bioconcentration		Log Kow	1.35	Other methods
Xylene	1330-20-7	Experimental BCF - Rainbow Tr	56 days	Bioaccumulation factor	14	Other methods
Ethylbenzene	100-41-4	Experimental BCF - Other	42 days	Bioaccumulation factor	1	Other methods
Hexamethylene diisocyanate	822-06-0	Estimated Bioconcentration		Log Kow	0.02	Other methods

12.4. Mobility in soil
Please contact manufacturer for more details

12.5 Other adverse effects
No information available.

SECTION 13: Disposal considerations

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

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. If no other disposal options are available, waste product that has been completely cured or polymerized may be placed in a landfill properly designed for industrial waste. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

SECTION 14: Transport Information

International Regulations

UN No.: UN1263
UN Proper shipping name: PAINT RELATED MATERIAL
Transportation Class (IMO): None assigned
Transportation Class (IATA): None assigned
Other Dangerous Goods Descriptions (IMO): None assigned
Other Dangerous Goods Descriptions (IATA): None assigned
Packing Group: None assigned
Marine pollutant: None assigned

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Global inventory status
Contact 3M for more information. The components of this material are in compliance with the provisions of the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Japan Chemical Substance Control Law. Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the new substance notification requirements of CEPA. The components of this product are in compliance with the chemical notification requirements of TSCA. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory.

This product may contain component(s) that are regulated by the following:
Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations: this product is subject to SDS, labelling, PEL and other requirements in the Act/Regulations.
Fire Safety (Petroleum And Flammable Materials) Regulations: this product is subject to import, transport and storage requirements in the Regulation.
Sewerage & Drainage Act and Sewerage and Drainage (Trade Effluent) Regulations: This product is subject to the requirements in the act/regulation.

SECTION 16: Other information

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications.

3M Singapore SDSs are available at www.3m.com.sg