Safety Data Sheet

This Safety Data Sheet has been prepared in accordance with the Minister of Industry Decree No. 23/M-IND/PER/4/2013 and GHS Classification 4th Edition.

Document Group:	09-5003-0	**Version Number:**	1.00
Issue Date:	22/02/2022	**Supercedes Date:**	Initial Issue

SECTION 1: Identification

1.1. Product identifier
3M™ Windo-Weld™ Super Fast Urethane, PN 08609

Product Identification Numbers
60-9800-3692-9

1.2. Recommended use and restrictions on use

Recommended use
Adhesive, Adhesive/Sealant for Windshields

1.3. Supplier's details
ADDRESS: PT 3M Indonesia , Perkantoran Hijau Arkadia, Menara F, Lt. 8. Jl. TB. Simatupang Kav. 88, Jakarta Selatan, 12520, Indonesia
Telephone: +6221-29974000
Website: https://www.3m.co.id/3M/en_ID/company-id/

1.4. Emergency telephone number
(021)29974000

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Skin Corrosion/Irritation: Category 3.
Respiratory Sensitizer: Category 1.
Skin Sensitizer: Category 1.
Reproductive Toxicity: Category 1B.
Carcinogenicity: Category 1A.
Specific Target Organ Toxicity (repeated exposure): Category 1.
Acute Aquatic Toxicity: Category 3.
Chronic Aquatic Toxicity: Category 3.

2.2. Label elements
Signal word
Danger

Symbols
Health Hazard |

Pictograms

Hazard statements

H316	Causes mild skin irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H360	May damage fertility or the unborn child.
H350	May cause cancer.
H372	Causes damage to organs through prolonged or repeated exposure: nervous system | sensory organs |
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements
Prevention:

P201	Obtain special instructions before use.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P261	Avoid breathing dust/fume/gas/mist/vapors/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.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

Storage:

P405	Store locked up.

Disposal:

P501	Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

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

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
Urethane Polymer	Trade Secret	30 - 60

Carbon Black	1333-86-4	10 - 30
Sulfonic Acids, C10-18-Alkane Ph Esters	70775-94-9	10 - 30
Kaolin, Calcined	92704-41-1	10 - 20
Hydrotreated Light Petroleum Distillates	64742-47-8	1 - 5
Toluene	108-88-3	1 - 5
p-Toluenesulfonamide	70-55-3	0.1 - 1
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	0.1 - 0.5
3-(Trimethoxysilyl)propyl Glycidyl Ether	2530-83-8	< 0.3
Quartz Silica	14808-60-7	< 0.3
Dibutyltin Dichloride	683-18-1	< 0.05
TRIBUTYLTIN CHLORIDE	1461-22-9	< 0.001

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:
No need for first aid is anticipated.

If Swallowed:
Rinse mouth. If you feel unwell, get 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). 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
DO NOT USE WATER

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion

5.3. Special protective actions for fire-fighters
No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. 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. 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.

6.3. Methods and material for containment and cleaning up
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. Vacuum or sweep up. WARNING ! A motor could be an ignition source and cause flammable gases or vapors or dust in the spill area to burn or explode. 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. 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 use in a confined area with minimal air exchange. Keep out of reach of children. Do not handle until all safety precautions have been read and understood. 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. Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities
Keep container tightly closed to prevent contamination with water or air. If contamination is suspected, do not reseal container. Store away from heat. Store away from acids. Store away from strong bases. Store away from oxidizing 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	C.A.S. No.	Agency	Limit type	Additional Comments
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	ACGIH	TWA:0.005 ppm	
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	Indonesia OELs	TWA(8 hours):0.005 ppm	
Toluene	108-88-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcin, Ototoxicant
Toluene	108-88-3	Indonesia OELs	TWA(8 hours):20 ppm	SKIN
Carbon Black	1333-86-4	ACGIH	TWA(inhalable fraction):3 mg/m3	A3: Confirmed animal carcin.
Carbon Black	1333-86-4	Indonesia OELs	TWA(inhalable particulates)(8 hours):3 mg/m3	
TIN, ORGANIC COMPOUNDS	1461-22-9	ACGIH	TWA(as Sn):0.1 mg/m3;STEL(as Sn):0.2 mg/m3	A4: Not class. as human carcin, SKIN

TIN, ORGANIC COMPOUNDS	1461-22-9	Indonesia OELs	TWA(as Sn)(8 hours):0.1 mg/m3	SKIN
Quartz Silica	14808-60-7	ACGIH	TWA(respirable fraction):0.025 mg/m3	A2: Suspected human carcin.
Quartz Silica	14808-60-7	Indonesia OELs	TWA(respirable particles)(8 hours):0.025 mg/m3	
Kerosine (petroleum)	64742-47-8	ACGIH	TWA(as total hydrocarbon vapor, non-aerosol):200 mg/m3	A3: Confirmed animal carcin., SKIN
TIN, ORGANIC COMPOUNDS	683-18-1	ACGIH	TWA(as Sn):0.1 mg/m3;STEL(as Sn):0.2 mg/m3	A4: Not class. as human carcin, SKIN
TIN, ORGANIC COMPOUNDS	683-18-1	Indonesia OELs	TWA(as Sn)(8 hours):0.1 mg/m3	SKIN

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
Indonesia OELs : Indonesia. Minister of Manpower and Transmigration Decree No. 13/MEN/X/2011 concerning Threshold Values, Chemical and Physical Factors in the Workplace.
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.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

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

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.
Gloves made from the following material(s) are recommended: Butyl Rubber
Neoprene
Nitrile Rubber

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 – Butyl rubber
Apron - Neoprene
Apron – Nitrile

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	Solid
Specific Physical Form:	Paste
Color	Black
Odor	Neutral
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*No Data Available*
Boiling point/Initial boiling point/Boiling range	110 ºC
Flash Point	No flash point
Evaporation rate	*No Data Available*
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	1.2 % volume
Flammable Limits(UEL)	7.1 % volume
Vapor Pressure	2,900 Pa [*Ref Std:*AIR=1]
Vapor Density and/or Relative Vapor Density	3.14 [*Ref Std:*AIR=1]
Density	1.205 g/cm3
Relative Density	1.2 [*Ref Std:*WATER=1]
Water solubility	Negligible
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	450 ºC
Decomposition temperature	*No Data Available*
Viscosity/Kinematic Viscosity	*No Data Available*
Volatile Organic Compounds	70 g/l [*Test Method:*calculated SCAQMD rule 443.1]
Percent volatile	5.8 % weight
VOC Less H2O & Exempt Solvents	70 g/l [*Test Method:*calculated SCAQMD rule 443.1]
Molecular weight	*No Data Available*

Nanoparticles
This material contains nanoparticles.

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
Temperatures above the boiling point

10.5. Incompatible materials
Amines
Alcohols
Water
Reaction with water, alcohols, and amines is not hazardous if container can vent to the atmosphere to prevent pressure buildup.
Accelerators
Al or Mg powder and high/shear temperature conditions
Alkali and alkaline earth metals
Reactive metals
Reducing agents
Strong acids
Strong bases
Strong oxidizing agents
Combustibles
Finely divided active metals
Reaction with water, alcohols, and amines is not hazardous if container can vent to the atmosphere to prevent pressure buildup.

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

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

May cause additional health effects (see below).

Additional Health Effects:

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.

Reproductive/Developmental Toxicity:
Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

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

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 >50 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Sulfonic Acids, C10-18-Alkane Ph Esters	Dermal	Rat	LD50 > 1,000 mg/kg
Sulfonic Acids, C10-18-Alkane Ph Esters	Ingestion	Rat	LD50 > 5,000 mg/kg
Carbon Black	Dermal	Rabbit	LD50 > 3,000 mg/kg
Carbon Black	Ingestion	Rat	LD50 > 8,000 mg/kg
Kaolin, Calcined	Dermal		LD50 estimated to be 2,000 - 5,000 mg/kg
Kaolin, Calcined	Ingestion	Rat	LD50 > 2,000 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
Hydrotreated Light Petroleum Distillates	Inhalation-Vapor	Professional judgement	LC50 estimated to be 20 - 50 mg/l
Hydrotreated Light Petroleum Distillates	Dermal	Rabbit	LD50 > 5,000 mg/kg
Hydrotreated Light Petroleum Distillates	Ingestion	Rat	LD50 > 5,000 mg/kg
p-Toluenesulfonamide	Dermal	Rat	LD50 > 2,000 mg/kg

p-Toluenesulfonamide	Ingestion	Rat	LD50 > 2,000 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
3-(Trimethoxysilyl)propyl Glycidyl Ether	Dermal	Rabbit	LD50 4,000 mg/kg
3-(Trimethoxysilyl)propyl Glycidyl Ether	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.3 mg/l
3-(Trimethoxysilyl)propyl Glycidyl Ether	Ingestion	Rat	LD50 7,010 mg/kg
Quartz Silica	Dermal		LD50 estimated to be > 5,000 mg/kg
Quartz Silica	Ingestion		LD50 estimated to be > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Carbon Black	Rabbit	No significant irritation
Toluene	Rabbit	Irritant
Hydrotreated Light Petroleum Distillates	Rabbit	Mild irritant
p-Toluenesulfonamide	Rabbit	No significant irritation
P,P'-Methylenebis(phenyl isocyanate)	official classification	Irritant
3-(Trimethoxysilyl)propyl Glycidyl Ether	Rabbit	Mild irritant
Quartz Silica	Professional judgement	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Carbon Black	Rabbit	No significant irritation
Toluene	Rabbit	Moderate irritant
Hydrotreated Light Petroleum Distillates	Rabbit	Mild irritant
p-Toluenesulfonamide	Rabbit	No significant irritation
P,P'-Methylenebis(phenyl isocyanate)	official classification	Severe irritant
3-(Trimethoxysilyl)propyl Glycidyl Ether	Rabbit	Corrosive

Sensitization:

Skin Sensitization

Name	Species	Value
Toluene	Guinea pig	Not classified
Hydrotreated Light Petroleum Distillates	Guinea pig	Not classified
P,P'-Methylenebis(phenyl isocyanate)	official classification	Sensitizing
3-(Trimethoxysilyl)propyl Glycidyl Ether	Guinea pig	Not classified

Respiratory Sensitization

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

Germ Cell Mutagenicity

Name	Route	Value
Carbon Black	In Vitro	Not mutagenic
Carbon Black	In vivo	Some positive data exist, but the data are not sufficient for classification
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic
Hydrotreated Light Petroleum Distillates	In Vitro	Not mutagenic
Hydrotreated Light Petroleum Distillates	In vivo	Not mutagenic
P,P'-Methylenebis(phenyl isocyanate)	In Vitro	Some positive data exist, but the data are not sufficient for classification
3-(Trimethoxysilyl)propyl Glycidyl Ether	In vivo	Not mutagenic
3-(Trimethoxysilyl)propyl Glycidyl Ether	In Vitro	Some positive data exist, but the data are not sufficient for classification
Quartz Silica	In Vitro	Some positive data exist, but the data are not sufficient for classification
Quartz Silica	In vivo	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Carbon Black	Dermal	Mouse	Not carcinogenic
Carbon Black	Ingestion	Mouse	Not carcinogenic
Carbon Black	Inhalation	Rat	Carcinogenic
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
Hydrotreated Light Petroleum Distillates	Not Specified	Not available	Not carcinogenic
P,P'-Methylenebis(phenyl isocyanate)	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
3-(Trimethoxysilyl)propyl Glycidyl Ether	Dermal	Mouse	Not carcinogenic
Quartz Silica	Inhalation	Human and animal	Carcinogenic

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
Hydrotreated Light Petroleum Distillates	Not Specified	Not classified for female reproduction	Rat	NOAEL Not available	1 generation
Hydrotreated Light Petroleum Distillates	Not Specified	Not classified for male reproduction	Rat	NOAEL Not available	1 generation
Hydrotreated Light Petroleum Distillates	Not Specified	Not classified for development	Rat	NOAEL Not available	1 generation
p-Toluenesulfonamide	Ingestion	Not classified for reproduction and/or development	Rat	NOAEL 300 mg/kg/day	premating & during gestation
P,P'-Methylenebis(phenyl isocyanate)	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
3-(Trimethoxysilyl)propyl Glycidyl Ether	Ingestion	Not classified for female reproduction	Rat	NOAEL	1 generation

				1,000 mg/kg/day	
3-(Trimethoxysilyl)propyl Glycidyl Ether	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
3-(Trimethoxysilyl)propyl Glycidyl Ether	Ingestion	Not classified for development	Rat	NOAEL 3,000 mg/kg/day	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	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
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
Carbon Black	Inhalation	pneumoconiosis	Not classified	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	auditory system | eyes | olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	nervous system	May cause damage to organs though 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	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 | 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 | kidney and/or bladder	Not classified	Multiple animal species	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	hematopoietic system	Not classified	Mouse	NOAEL 600 mg/kg/day	14 days

Toluene	Ingestion	endocrine system	Not classified	Mouse	NOAEL 105 mg/kg/day	28 days
Toluene	Ingestion	immune system	Not classified	Mouse	NOAEL 105 mg/kg/day	4 weeks
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
3-(Trimethoxysilyl)propyl Glycidyl Ether	Ingestion	heart | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | nervous system | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Quartz Silica	Inhalation	silicosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure

Aspiration Hazard

Name	Value
Toluene	Aspiration hazard
Hydrotreated Light Petroleum Distillates	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 labeling, 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:
GHS Chronic 3: Harmful to aquatic life with long lasting effects

No product test data available

Material	Cas #	Organism	Type	Exposure	Test Endpoint	Test Result
Urethane Polymer	Trade Secret		Data not available or insufficient for classification			NA
Carbon Black	1333-86-4	Activated sludge	Experimental	3 hours	EC50	>=100 mg/l
Carbon Black	1333-86-4		Data not available or insufficient for classification			N/A
Sulfonic Acids, C10-18-Alkane Ph Esters	70775-94-9	Medaka	Experimental	96 hours	LC50	>100 mg/l

Sulfonic Acids, C10-18-Alkane Ph Esters	70775-94-9	Water flea	Experimental	48 hours	No tox obs at lmt of water sol	>100 mg/l
Sulfonic Acids, C10-18-Alkane Ph Esters	70775-94-9	Green algae	Experimental	72 hours	EC10	>=2 mg/l
Kaolin, Calcined	92704-41-1	Bacteria	Estimated	16 hours	EC10	1,400 mg/l
Kaolin, Calcined	92704-41-1	Green algae	Estimated	72 hours	EC50	2,500 mg/l
Kaolin, Calcined	92704-41-1	Water flea	Estimated	48 hours	EC50	>100 mg/l
Kaolin, Calcined	92704-41-1	Zebra Fish	Estimated	96 hours	LC50	>100 mg/l
Kaolin, Calcined	92704-41-1	Green algae	Estimated	72 hours	EC10	41 mg/l
Kaolin, Calcined	92704-41-1	Rainbow Trout	Estimated	30 days	NOEC	100 mg/l
Hydrotreated Light Petroleum Distillates	64742-47-8	Green Algae	Experimental	72 hours	EL50	>1,000 mg/l
Hydrotreated Light Petroleum Distillates	64742-47-8	Rainbow Trout	Experimental	96 hours	LL50	>1,000 mg/l
Hydrotreated Light Petroleum Distillates	64742-47-8	Water flea	Experimental	48 hours	EL50	>1,000 mg/l
Hydrotreated Light Petroleum Distillates	64742-47-8	Green Algae	Experimental	72 hours	NOEL	1,000 mg/l
Toluene	108-88-3	Coho Salmon	Experimental	96 hours	LC50	5.5 mg/l
Toluene	108-88-3	Grass Shrimp	Experimental	96 hours	LC50	9.5 mg/l
Toluene	108-88-3	Green Algae	Experimental	72 hours	EC50	12.5 mg/l
Toluene	108-88-3	Leopard frog	Experimental	9 days	LC50	0.39 mg/l
Toluene	108-88-3	Pink Salmon	Experimental	96 hours	LC50	6.41 mg/l
Toluene	108-88-3	Water flea	Experimental	48 hours	EC50	3.78 mg/l
Toluene	108-88-3	Coho Salmon	Experimental	40 days	NOEC	1.39 mg/l
Toluene	108-88-3	Diatom	Experimental	72 hours	NOEC	10 mg/l
Toluene	108-88-3	Water flea	Experimental	7 days	NOEC	0.74 mg/l
Toluene	108-88-3	Activated sludge	Experimental	12 hours	IC50	292 mg/l
Toluene	108-88-3	Bacteria	Experimental	16 hours	NOEC	29 mg/l
Toluene	108-88-3	Bacteria	Experimental	24 hours	EC50	84 mg/l
Toluene	108-88-3	Redworm	Experimental	28 days	LC50	>150 mg per kg of bodyweight
Toluene	108-88-3	Soil microbes	Experimental	28 days	NOEC	<26 mg/kg (Dry Weight)
p-Toluenesulfonamide	70-55-3	Green Algae	Estimated	72 hours	EC50	170 mg/l

p-Toluenesulfonamide	70-55-3	Water flea	Estimated	48 hours	EC50	210 mg/l
p-Toluenesulfonamide	70-55-3	Green Algae	Estimated	72 hours	NOEC	7.7 mg/l
p-Toluenesulfonamide	70-55-3	Water flea	Estimated	21 days	NOEC	49 mg/l
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	Activated sludge	Estimated	3 hours	EC50	>100 mg/l
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	Green algae	Estimated	72 hours	EC50	>1,640 mg/l
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	Water flea	Estimated	24 hours	EC50	>1,000 mg/l
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	Zebra Fish	Estimated	96 hours	LC50	>1,000 mg/l
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	Green algae	Estimated	72 hours	NOEC	1,640 mg/l
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	Water flea	Estimated	21 days	NOEC	10 mg/l
3-(Trimethoxysilyl)propyl Glycidyl Ether	2530-83-8	Bacteria	Experimental	5 hours	EC10	1,520 mg/l
3-(Trimethoxysilyl)propyl Glycidyl Ether	2530-83-8	Common Carp	Experimental	96 hours	LC50	55 mg/l
3-(Trimethoxysilyl)propyl Glycidyl Ether	2530-83-8	Crustecea other	Experimental	48 hours	LC50	324 mg/l
3-(Trimethoxysilyl)propyl Glycidyl Ether	2530-83-8	Green algae	Experimental	96 hours	EC50	350 mg/l
3-(Trimethoxysilyl)propyl Glycidyl Ether	2530-83-8	Green Algae	Experimental	96 hours	NOEC	130 mg/l
3-(Trimethoxysil	2530-83-8	Water flea	Experimental	21 days	NOEC	>=100 mg/l

yl)propyl Glycidyl Ether						
Quartz Silica	14808-60-7	Green Algae	Estimated	72 hours	EC50	440 mg/l
Quartz Silica	14808-60-7	Water flea	Estimated	48 hours	EC50	7,600 mg/l
Quartz Silica	14808-60-7	Zebra Fish	Estimated	96 hours	LC50	5,000 mg/l
Quartz Silica	14808-60-7	Green Algae	Estimated	72 hours	NOEC	60 mg/l
Dibutyltin Dichloride	683-18-1	Algae	Experimental	96 hours	EC50	0.043 mg/l
Dibutyltin Dichloride	683-18-1	Water flea	Experimental	48 hours	EC50	0.84 mg/l
Dibutyltin Dichloride	683-18-1	Medaka	Experimental	28 days	NOEC	1.8 mg/l
Dibutyltin Dichloride	683-18-1	Water flea	Experimental	21 days	NOEC	0.015 mg/l
TRIBUTYLTIN CHLORIDE	1461-22-9	Copepods	Laboratory	48 hours	LC50	0.00027 mg/l
TRIBUTYLTIN CHLORIDE	1461-22-9	Diatom	Laboratory	72 hours	EC50	0.000987 mg/l
TRIBUTYLTIN CHLORIDE	1461-22-9	Inland Silverside	Laboratory	96 hours	LC50	0.003 mg/l

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Urethane Polymer	Trade Secret	Data not availbl-insufficient			N/A	
Carbon Black	1333-86-4	Data not availbl-insufficient			N/A	
Sulfonic Acids, C10-18-Alkane Ph Esters	70775-94-9	Estimated Biodegradation	28 days	Biological Oxygen Demand	51 % BOD/ThBOD	
Kaolin, Calcined	92704-41-1	Data not availbl-insufficient			N/A	
Hydrotreated Light Petroleum Distillates	64742-47-8	Estimated Biodegradation	28 days	Biological Oxygen Demand	69 % BOD/ThBOD	OECD 301F - Manometric Respiro
Toluene	108-88-3	Experimental Photolysis		Photolytic half-life (in air)	5.2 days (t 1/2)	
Toluene	108-88-3	Experimental Biodegradation	20 days	Biological Oxygen Demand	80 % BOD/ThBOD	APHA Std Meth Water/Wastewater
p-Toluenesulfonamide	70-55-3	Experimental Biodegradation	28 days	Biological Oxygen Demand	86 % weight	OECD 301D - Closed Bottle Test
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	Estimated Hydrolysis		Hydrolytic half-life	20 hours (t 1/2)	Non-standard method
3-(Trimethoxysil	2530-83-8	Experimental Hydrolysis		Hydrolytic half-life	6.5 hours (t 1/2)	Non-standard method

yl)propyl Glycidyl Ether						
3-(Trimethoxysilyl)propyl Glycidyl Ether	2530-83-8	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	37 % weight	Non-standard method
Quartz Silica	14808-60-7	Data not availbl-insufficient			N/A	
Dibutyltin Dichloride	683-18-1	Modeled Photolysis		Photolytic half-life (in air)	12.7 hours (t 1/2)	Non-standard method
Dibutyltin Dichloride	683-18-1	Experimental Biodegradation	28 days	Carbon dioxide evolution	5.5 % weight	OECD 301B - Mod. Sturm or CO2
TRIBUTYLTIN CHLORIDE	1461-22-9	Calculated Photolysis		Photolytic half-life (in air)	9.0 hours (t 1/2)	Non-standard method
TRIBUTYLTIN CHLORIDE	1461-22-9	Laboratory Biodegradation	28 days	Biological Oxygen Demand	0 % weight	OECD 301F - Manometric Respiro

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Urethane Polymer	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Carbon Black	1333-86-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Sulfonic Acids, C10-18-Alkane Ph Esters	70775-94-9	Experimental BCF-Carp	36 days	Bioaccumulation Factor	56-212	
Kaolin, Calcined	92704-41-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Hydrotreated Light Petroleum Distillates	64742-47-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Toluene	108-88-3	Experimental BCF - Other	72 hours	Bioaccumulation Factor	90	
Toluene	108-88-3	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.73	
p-Toluenesulfonamide	70-55-3	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	0.6	Non-standard method
P,P'-Methylenebis(phenyl isocyanate)	101-68-8	Experimental BCF-Carp	28 days	Bioaccumulation Factor	200	OECD 305E-Bioaccum Fl-thru fis
3-(Trimethoxysil	2530-83-8	Data not available or	N/A	N/A	N/A	N/A

yl)propyl Glycidyl Ether		insufficient for classification				
Quartz Silica	14808-60-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Dibutyltin Dichloride	683-18-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
TRIBUTYLTIN CHLORIDE	1461-22-9	Laboratory BCF - Other	10 days	Bioaccumulation Factor	7950	Non-standard method

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. Proper destruction may require the use of additional fuel during incineration processes. 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

Local Regulations
Land Transport: In accordance with Director General of Land Transportation Decree No. SK.725/AJ.302/DRJD/2004 which refer to UN Standard.
Sea Transport: In accordance with Minister of Transportation Decree No. KM 2/2010 which refer to IMDG Code Standard.

International Regulations

UN No.: Not applicable
UN Proper Shipping Name: Not applicable
Transportation Class (IMO): Not applicable
Transportation Class (IATA): Not applicable
Packing Group: Not applicable
Marine Pollutant: Not applicable

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

Local Inventory Status

Addendum I Government Regulation No. 74/2001:
List of Hazardous Substances Approved for Use :
Lead is listed as a Hazardous Substance Approved for Use.
Phosphoric Acid is listed as a Hazardous Substance Approved for Use.
Toluene is listed as a Hazardous Substance Approved for Use.

Addendum II Government Regulation No. 74/2001:
Tab.1 List of Prohibited Substances for Use:
None of the substances are listed as a Prohibited Substance for Use.

Addendum II Government Regulation No. 74/2001:
Tab.2 List of Restricted Substances for Use:
Mercury is listed as a Restricted Substance for Use.

Addendum I Ministry of Health Regulation No. 472/1996:
List and Classification of Hazardous Substances for Health:
Mercury is listed and classified as a Hazardous Substance for Health.

Addendum I Act of Minister of Industry and Trade No. 254/MPP/KEP/2000
List of Hazardous Substances that are Regulated to Import Trade System:
Mercury is listed as a Hazardous Substance that is Regulated to Import Trade System

SECTION 16: Other information

Document Group:	09-5003-0	**Version Number:**	1.00
Issue Date:	22/02/2022	**Supercedes Date:**	Initial Issue

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 Indonesia SDSs are available at https://www.3m.co.id/3M/en_ID/company-id/