



Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the Malaysia Occupational Safety and Health (Chemical Classification, Labelling and Safety Data Sheets) Regulations 2013.

SECTION 1: Identification

1.1. Product identifier

3M™ Fastbond™ Contact Adhesive 2000-NF, Blue

Product Identification Numbers

62-4286-7536-7 62-4286-8430-2 62-4286-9430-1 62-4286-9932-6

1.2. Recommended use and restrictions on use

Recommended use

Adhesive, Industrial use

1.3. Supplier's details

ADDRESS: 3M Malaysia Sdn. Bhd., Level 8, Block F, Oasis Square, No.2, Jalan PJU 1A/7A, Ara Damansara 47301
Petaling, Jaya, Selangor
Telephone: 03-7884 2888
E Mail: 3mmyehsr@mmm.com
Website: www.3M.com.my

1.4. Emergency telephone number

+60 03-7884 2888

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Reproductive Toxicity: Category 1B.
Specific Target Organ Toxicity (single exposure): Category 2.
Specific Target Organ Toxicity (repeated exposure): Category 2.
Chronic Aquatic Toxicity: Category 2.

2.2. Label elements

Signal word

Danger

Symbols

Health Hazard |Environment |

Pictograms



Hazard Statements:

- H360 May damage fertility or the unborn child.
- H371 May cause damage to organs: sensory organs.
- H373 May cause damage to organs through prolonged or repeated exposure: nervous system | sensory organs.
- H411 Toxic 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.
- P273 Avoid release to the environment.
- P281 Use personal protective equipment as required.

Response:

- P308 + P313 IF exposed or concerned: Get medical advice/attention.

Disposal:

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

2.3. Other hazards

None known

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
Water	7732-18-5	30 - 60
2,3-Dichloro-1,3-Butadiene-chloroprene copolymer	25067-95-2	20 - 40
Glycerol Esters of Rosin Acids	8050-31-5	5 - 10
Resin, Polymer with Phenol	Trade Secret	5 - 10
Methyl Alcohol	67-56-1	< 3
Potassium Rosinate	61790-50-9	< 3
Toluene	108-88-3	< 3
Zinc Oxide	1314-13-2	1 - 2
2,2'-Methylenebis(6-tert-butyl-p-cresol)	119-47-1	0.1 - 1
Potassium Hydroxide	1310-58-3	< 0.5
C.I. Pigment Blue 15	147-14-8	< 0.3
Acetone	67-64-1	< 0.2
Triethanolamine	102-71-6	< 0.2

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:

Wash with soap and water. 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

Target organ effects. See Section 11 for additional details. 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

This product contains methanol. If there is a reasonable suspicion of methanol poisoning, intravenous (IV) administration with either fomepizole (preferred) or ethanol (if fomepizole is unavailable) should be considered as part of the medical management.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Formaldehyde	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Chloride	During Combustion
Oxides of Nitrogen	During Combustion
Oxides of Phosphorus	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. 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. 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. Place in a metal container approved for transportation by appropriate authorities. Clean up residue with water. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

For industrial/occupational use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. 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. Avoid release to the environment. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities

Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits**

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

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Triethanolamine	102-71-6	ACGIH	TWA:5 mg/m3	
Triethanolamine	102-71-6	Malaysia OELs	TWA(8 hours):5 mg/m3	
Toluene	108-88-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcin, Ototoxicant
Toluene	108-88-3	Malaysia OELs	TWA(8 hours):188 mg/m3(50 ppm)	SKIN
Potassium Hydroxide	1310-58-3	ACGIH	CEIL:2 mg/m3	
Potassium Hydroxide	1310-58-3	Malaysia OELs	CEIL:2 mg/m3	
DUST, INERT OR NUISANCE	1314-13-2	Malaysia OELs	TWA (proposed)(respirable particles)(8 hours):3 mg/m3;TWA (proposed)(Inhalable particulate)(8 hours):10 mg/m3	
Zinc Oxide	1314-13-2	ACGIH	TWA(respirable fraction):2 mg/m3;STEL(respirable fraction):10 mg/m3	
Zinc Oxide	1314-13-2	Malaysia OELs	TWA(as fume)(8 hours):5 mg/m3;TWA(as dust)(8 hours):10 mg/m3	
COPPER COMPOUNDS	147-14-8	ACGIH	TWA(as Cu, fume):0.2 mg/m3;TWA(as Cu dust or mist):1 mg/m3	
Methyl Alcohol	67-56-1	ACGIH	TWA:200 ppm;STEL:250 ppm	Danger of cutaneous absorption
Methyl Alcohol	67-56-1	Malaysia OELs	TWA(8 hours):262	SKIN

			mg/m3(200 ppm)	
Acetone	67-64-1	ACGIH	TWA:250 ppm;STEL:500 ppm	A4: Not class. as human carcin
Acetone	67-64-1	Malaysia OELs	TWA(8 hours):1187 mg/m3(500 ppm)	

ACGIH : American Conference of Governmental Industrial Hygienists

CMRG : Chemical Manufacturer's Recommended Guidelines

Malaysia OELs : Malaysia. Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations

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.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

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

Safety Glasses with side shields

Skin/hand protection

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

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

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 vapors and particulates

Half facepiece or full facepiece supplied-air respirator

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Color	Blue
Odor	Slight Ammoniacal
Odor threshold	<i>No Data Available</i>
pH	10
Melting point/Freezing point	<i>Not Applicable</i>
Boiling point/Initial boiling point/Boiling range	≥ 64 °C [<i>Details: Methanol</i>]
Flash Point	No flash point

Evaporation rate	1 [Ref Std:ETHER=1]
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	Not Applicable
Flammable Limits(UEL)	Not Applicable
Vapor Pressure	<=2,333.1 Pa [@ 20 °C]
Vapor Density and/or Relative Vapor Density	1.1 [Ref Std:AIR=1]
Density	1.1 g/ml
Relative Density	1.1 [Ref Std:WATER=1]
Water solubility	Complete
Solubility- non-water	No Data Available
Partition coefficient: n-octanol/ water	No Data Available
Autoignition temperature	Not Applicable
Decomposition temperature	No Data Available
Viscosity/Kinematic Viscosity	200 - 600 mPa-s [@ 23 °C]
Volatile Organic Compounds	No Data Available
Percent volatile	No Data Available
VOC Less H2O & Exempt Solvents	< 80 g/l [Details:tested per SCAQMD Method 304]
Molecular weight	No Data Available
Solids Content	25 - 50 %

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

None known.

10.5. Incompatible materials

Strong acids
Strong oxidizing agents

10.6. Hazardous decomposition products

Substance

None known.

Condition

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.

May cause additional health effects (see below).

Skin Contact:

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness. May cause additional health effects (see below).

Eye Contact:

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

Ingestion:

May be harmful if swallowed.

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

May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:

May cause blindness.

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.

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 >2,000 - =5,000 mg/kg
Glycerol Esters of Rosin Acids	Dermal	Rabbit	LD50 > 5,000 mg/kg
Glycerol Esters of Rosin Acids	Ingestion	Rat	LD50 > 2,000 mg/kg
Toluene	Dermal	Rat	LD50 12,000 mg/kg
Toluene	Inhalation-	Rat	LC50 30 mg/l

	Vapor (4 hours)		
Toluene	Ingestion	Rat	LD50 5,550 mg/kg
Methyl Alcohol	Dermal		LD50 estimated to be 1,000 - 2,000 mg/kg
Methyl Alcohol	Inhalation-Vapor		LC50 estimated to be 10 - 20 mg/l
Methyl Alcohol	Ingestion		LD50 estimated to be 50 - 300 mg/kg
Potassium Rosinate	Dermal	Rat	LD50 > 2,000 mg/kg
Potassium Rosinate	Ingestion	Rat	LD50 > 2,000 mg/kg
Zinc Oxide	Dermal		LD50 estimated to be > 5,000 mg/kg
Zinc Oxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.7 mg/l
Zinc Oxide	Ingestion	Rat	LD50 > 5,000 mg/kg
Potassium Hydroxide	Dermal	Rabbit	LD50 > 1,260 mg/kg
Potassium Hydroxide	Ingestion	Rat	LD50 273 mg/kg
2,2'-Methylenebis(6-tert-butyl-p-cresol)	Dermal	Rabbit	LD50 > 10,000 mg/kg
2,2'-Methylenebis(6-tert-butyl-p-cresol)	Ingestion	Rat	LD50 > 5,000 mg/kg
C.I. Pigment Blue 15	Dermal		LD50 estimated to be > 5,000 mg/kg
C.I. Pigment Blue 15	Ingestion	Rat	LD50 10,000 mg/kg
Acetone	Dermal	Rabbit	LD50 > 15,688 mg/kg
Acetone	Inhalation-Vapor (4 hours)	Rat	LC50 76 mg/l
Acetone	Ingestion	Rat	LD50 5,800 mg/kg
Triethanolamine	Dermal	Rabbit	LD50 > 2,000 mg/kg
Triethanolamine	Ingestion	Rat	LD50 9,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Glycerol Esters of Rosin Acids	Rabbit	Minimal irritation
Toluene	Rabbit	Irritant
Methyl Alcohol	Rabbit	Mild irritant
Potassium Rosinate	Rabbit	No significant irritation
Zinc Oxide	Human and animal	No significant irritation
Potassium Hydroxide	Rabbit	Corrosive
C.I. Pigment Blue 15	Rabbit	No significant irritation
Acetone	Mouse	Minimal irritation
Triethanolamine	Rabbit	Minimal irritation

Serious Eye Damage/Irritation

Name	Species	Value
Glycerol Esters of Rosin Acids	Rabbit	Mild irritant
Toluene	Rabbit	Moderate irritant
Methyl Alcohol	Rabbit	Moderate irritant
Potassium Rosinate	Rabbit	Moderate irritant
Zinc Oxide	Rabbit	Mild irritant
Potassium Hydroxide	Rabbit	Corrosive
C.I. Pigment Blue 15	Rabbit	No significant irritation
Acetone	Rabbit	Severe irritant
Triethanolamine	Rabbit	Mild irritant

Sensitization:

Skin Sensitization

Name	Species	Value

Glycerol Esters of Rosin Acids	Guinea pig	Not classified
Toluene	Guinea pig	Not classified
Methyl Alcohol	Guinea pig	Not classified
Potassium Rosinate	Mouse	Not classified
Zinc Oxide	Guinea pig	Not classified
C.I. Pigment Blue 15	Human	Not classified
Triethanolamine	Human	Not classified

Respiratory Sensitization

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

Germ Cell Mutagenicity

Name	Route	Value
Glycerol Esters of Rosin Acids	In Vitro	Not mutagenic
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic
Methyl Alcohol	In Vitro	Some positive data exist, but the data are not sufficient for classification
Methyl Alcohol	In vivo	Some positive data exist, but the data are not sufficient for classification
Zinc Oxide	In Vitro	Some positive data exist, but the data are not sufficient for classification
Zinc Oxide	In vivo	Some positive data exist, but the data are not sufficient for classification
C.I. Pigment Blue 15	In Vitro	Not mutagenic
Acetone	In vivo	Not mutagenic
Acetone	In Vitro	Some positive data exist, but the data are not sufficient for classification
Triethanolamine	In Vitro	Not mutagenic
Triethanolamine	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Toluene	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Toluene	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification
Methyl Alcohol	Inhalation	Multiple animal species	Not carcinogenic
C.I. Pigment Blue 15	Ingestion	Mouse	Not carcinogenic
Acetone	Not Specified	Multiple animal species	Not carcinogenic
Triethanolamine	Dermal	Multiple animal species	Not carcinogenic
Triethanolamine	Ingestion	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Toluene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure

Toluene	Inhalation	Not classified for male reproduction	Rat	NOAEL 2.3 mg/l	1 generation
Toluene	Ingestion	Toxic to development	Rat	LOAEL 520 mg/kg/day	during gestation
Toluene	Inhalation	Toxic to development	Human	NOAEL Not available	poisoning and/or abuse
Methyl Alcohol	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,600 mg/kg/day	21 days
Methyl Alcohol	Ingestion	Toxic to development	Mouse	LOAEL 4,000 mg/kg/day	during organogenesis
Methyl Alcohol	Inhalation	Toxic to development	Mouse	NOAEL 1.3 mg/l	during organogenesis
Zinc Oxide	Ingestion	Not classified for reproduction and/or development	Multiple animal species	NOAEL 125 mg/kg/day	premating & during gestation
2,2'-Methylenebis(6-tert-butyl-p-cresol)	Ingestion	Not classified for female reproduction	Rat	NOAEL 50 mg/kg/day	premating & during gestation
2,2'-Methylenebis(6-tert-butyl-p-cresol)	Ingestion	Toxic to male reproduction	Rat	NOAEL 12.5 mg/kg/day	50 days
C.I. Pigment Blue 15	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
C.I. Pigment Blue 15	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	42 days
C.I. Pigment Blue 15	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
Acetone	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,700 mg/kg/day	13 weeks
Acetone	Inhalation	Not classified for development	Rat	NOAEL 5.2 mg/l	during organogenesis
Triethanolamine	Ingestion	Not classified for development	Mouse	NOAEL 1,125 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
Methyl Alcohol	Inhalation	blindness	Causes damage to organs	Human	NOAEL Not available	occupational exposure
Methyl Alcohol	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	not available
Methyl Alcohol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	6 hours
Methyl Alcohol	Ingestion	blindness	Causes damage to organs	Human	NOAEL Not available	poisoning and/or abuse
Methyl Alcohol	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
Potassium Rosinate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for	similar health	NOAEL Not available	

			classification	hazards		
Potassium Hydroxide	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL not available	
Acetone	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Acetone	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Acetone	Inhalation	immune system	Not classified	Human	NOAEL 1.19 mg/l	6 hours
Acetone	Inhalation	liver	Not classified	Guinea pig	NOAEL Not available	
Acetone	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Glycerol Esters of Rosin Acids	Ingestion	liver heart skin endocrine system bone, teeth, nails, and/or hair blood bone marrow hematopoietic system immune system muscles nervous system eyes kidney and/or bladder respiratory system	Not classified	Rat	NOAEL 5,000 mg/kg/day	90 days
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	4 weeks

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					mg/kg/day	
Methyl Alcohol	Inhalation	liver	Not classified	Rat	NOAEL 6.55 mg/l	4 weeks
Methyl Alcohol	Inhalation	respiratory system	Not classified	Rat	NOAEL 13.1 mg/l	6 weeks
Methyl Alcohol	Ingestion	liver nervous system	Not classified	Rat	NOAEL 2,500 mg/kg/day	90 days
Zinc Oxide	Ingestion	nervous system	Not classified	Rat	NOAEL 600 mg/kg/day	10 days
Zinc Oxide	Ingestion	endocrine system hematopoietic system kidney and/or bladder	Not classified	Other	NOAEL 500 mg/kg/day	6 months
C.I. Pigment Blue 15	Ingestion	endocrine system hematopoietic system respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
C.I. Pigment Blue 15	Ingestion	kidney and/or bladder	Not classified	Multiple animal species	NOAEL Not available	not available
Acetone	Dermal	eyes	Not classified	Guinea pig	NOAEL Not available	3 weeks
Acetone	Inhalation	hematopoietic system	Not classified	Human	NOAEL 3 mg/l	6 weeks
Acetone	Inhalation	immune system	Not classified	Human	NOAEL 1.19 mg/l	6 days
Acetone	Inhalation	kidney and/or bladder	Not classified	Guinea pig	NOAEL 119 mg/l	not available
Acetone	Inhalation	heart liver	Not classified	Rat	NOAEL 45 mg/l	8 weeks
Acetone	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 900 mg/kg/day	13 weeks
Acetone	Ingestion	heart	Not classified	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Acetone	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 200 mg/kg/day	13 weeks
Acetone	Ingestion	liver	Not classified	Mouse	NOAEL 3,896 mg/kg/day	14 days
Acetone	Ingestion	eyes	Not classified	Rat	NOAEL 3,400 mg/kg/day	13 weeks
Acetone	Ingestion	respiratory system	Not classified	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Acetone	Ingestion	muscles	Not classified	Rat	NOAEL 2,500 mg/kg	13 weeks
Acetone	Ingestion	skin bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 11,298 mg/kg/day	13 weeks
Triethanolamine	Dermal	kidney and/or bladder	Not classified	Multiple animal species	NOAEL 2,000 mg/kg/day	2 years
Triethanolamine	Dermal	liver	Not classified	Mouse	NOAEL 4,000 mg/kg/day	13 weeks
Triethanolamine	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 1,000 mg/kg/day	2 years
Triethanolamine	Ingestion	liver	Not classified	Guinea pig	NOAEL 1,600 mg/kg/day	24 weeks

Aspiration Hazard

Name	Value
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Toluene	Aspiration hazard
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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 2: Toxic to aquatic life.

Chronic aquatic hazard:

GHS Chronic 2: Toxic to aquatic life with long lasting effects

No product test data available

Material	Cas #	Organism	Type	Exposure	Test Endpoint	Test Result
2,3-Dichloro-1,3-Butadiene-chloroprene copolymer	25067-95-2	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Glycerol Esters of Rosin Acids	8050-31-5	Green algae	Estimated	72 hours	No tox obs at lmt of water sol	>100 mg/l
Glycerol Esters of Rosin Acids	8050-31-5	Rainbow Trout	Estimated	96 hours	No tox obs at lmt of water sol	>100 mg/l
Glycerol Esters of Rosin Acids	8050-31-5	Water flea	Experimental	48 hours	No tox obs at lmt of water sol	>100 mg/l
Glycerol Esters of Rosin Acids	8050-31-5	Green algae	Estimated	72 hours	No tox obs at lmt of water sol	>100 mg/l
Methyl Alcohol	67-56-1	Algae or other aquatic plants	Experimental	96 hours	EC50	16.9 mg/l
Methyl Alcohol	67-56-1	Bay mussel	Experimental	96 hours	LC50	15,900 mg/l
Methyl Alcohol	67-56-1	Bluegill	Experimental	96 hours	LC50	15,400 mg/l
Methyl Alcohol	67-56-1	Green algae	Experimental	96 hours	ErC50	22,000 mg/l
Methyl Alcohol	67-56-1	Sediment organism	Experimental	96 hours	LC50	54,890 mg/l
Methyl Alcohol	67-56-1	Water flea	Experimental	48 hours	LC50	3,289 mg/l
Methyl Alcohol	67-56-1	Green algae	Experimental	96 hours	NOEC	9.96 mg/l
Methyl Alcohol	67-56-1	Medaka	Experimental	8.33 days	NOEC	158,000 mg/l
Methyl Alcohol	67-56-1	Water flea	Experimental	21 days	NOEC	122 mg/l
Methyl Alcohol	67-56-1	Activated sludge	Experimental	3 hours	IC50	>1,000 mg/l
Methyl Alcohol	67-56-1	Barley	Experimental	14 days	EC50	15,492 mg/kg (Dry Weight)
Methyl Alcohol	67-56-1	Redworm	Experimental	63 days	EC50	26,646 mg/kg (Dry Weight)
Methyl Alcohol	67-56-1	Springtail	Experimental	28 days	EC50	5,683 mg/kg (Dry Weight)
Potassium Rosinate	61790-50-9	Activated sludge	Analogous Compound	3 hours	EC10	>10,000 mg/l
Potassium Rosinate	61790-50-9	Fathead Minnow	Analogous Compound	96 hours	LC50	1.7 mg/l
Potassium Rosinate	61790-50-9	Green algae	Analogous Compound	72 hours	EC50	39.6 mg/l
Potassium Rosinate	61790-50-9	Water flea	Analogous Compound	48 hours	EC50	1.6 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

3M™ Fastbond™ Contact Adhesive 2000-NF, Blue

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)
Zinc Oxide	1314-13-2	Activated sludge	Estimated	3 hours	EC50	6.5 mg/l
Zinc Oxide	1314-13-2	Green algae	Estimated	72 hours	EC50	0.052 mg/l
Zinc Oxide	1314-13-2	Rainbow Trout	Estimated	96 hours	LC50	0.21 mg/l
Zinc Oxide	1314-13-2	Water flea	Estimated	48 hours	EC50	0.07 mg/l
Zinc Oxide	1314-13-2	Green algae	Estimated	72 hours	NOEC	0.006 mg/l
Zinc Oxide	1314-13-2	Water flea	Estimated	7 days	NOEC	0.02 mg/l
2,2'-Methylenebis(6-tert-butyl-p-cresol)	119-47-1	Green algae	Endpoint not reached	72 hours	EC50	>100 mg/l
2,2'-Methylenebis(6-tert-butyl-p-cresol)	119-47-1	Water flea	Endpoint not reached	48 hours	EC50	>100 mg/l
2,2'-Methylenebis(6-tert-butyl-p-cresol)	119-47-1	Activated sludge	Experimental	3 hours	EC50	>10,000 mg/l
2,2'-Methylenebis(6-tert-butyl-p-cresol)	119-47-1	Medaka	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
2,2'-Methylenebis(6-tert-butyl-p-cresol)	119-47-1	Green algae	Experimental	72 hours	NOEC	1.3 mg/l
Potassium Hydroxide	1310-58-3	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
C.I. Pigment Blue 15	147-14-8	Green algae	Estimated	72 hours	ErC50	>100 mg/l
C.I. Pigment Blue 15	147-14-8	Water flea	Estimated	48 hours	EC50	>500 mg/l
C.I. Pigment Blue 15	147-14-8	Activated sludge	Experimental	30 minutes	EC20	750 mg/l
C.I. Pigment Blue 15	147-14-8	Bacteria	Experimental	30 minutes	EC10	>10,000 mg/l
C.I. Pigment Blue 15	147-14-8	Rainbow Trout	Experimental	96 hours	LC50	355.6 mg/l
C.I. Pigment Blue 15	147-14-8	Green algae	Estimated	72 hours	ErC10	100 mg/l
C.I. Pigment Blue 15	147-14-8	Water flea	Estimated	21 days	NOEC	>=1 mg/l
Acetone	67-64-1	Algae or other aquatic plants	Experimental	96 hours	EC50	11,493 mg/l
Acetone	67-64-1	Invertebrate	Experimental	24 hours	LC50	2,100 mg/l
Acetone	67-64-1	Rainbow Trout	Experimental	96 hours	LC50	5,540 mg/l
Acetone	67-64-1	Water flea	Experimental	21 days	NOEC	1,000 mg/l
Acetone	67-64-1	Bacteria	Experimental	16 hours	NOEC	1,700 mg/l
Acetone	67-64-1	Redworm	Experimental	48 hours	LC50	>100
Triethanolamine	102-71-6	Activated sludge	Experimental	3 hours	IC50	>1,000 mg/l
Triethanolamine	102-71-6	Fathead Minnow	Experimental	96 hours	LC50	11,800 mg/l
Triethanolamine	102-71-6	Green algae	Experimental	72 hours	ErC50	512 mg/l
Triethanolamine	102-71-6	Water flea	Experimental	48 hours	EC50	609.98 mg/l
Triethanolamine	102-71-6	Green algae	Experimental	72 hours	ErC10	26 mg/l
Triethanolamine	102-71-6	Water flea	Experimental	21 days	NOEC	16 mg/l

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
2,3-Dichloro-1,3-Butadiene-chloroprene copolymer	25067-95-2	Data not available/insufficient	N/A	N/A	N/A	N/A
Glycerol Esters of Rosin Acids	8050-31-5	Experimental Biodegradation	28 days	Carbon dioxide evolution	0 %CO ₂ evolution/THCO ₂ evolution	OECD 301B - Mod. Sturm or CO ₂
Methyl Alcohol	67-56-1	Experimental Biodegradation	3 days	Percent degraded	91 %degraded	
Methyl Alcohol	67-56-1	Experimental Biodegradation	14 days	Biological Oxygen Demand	92 %BOD/ThOD	OECD 301C - MITI (I)
Methyl Alcohol	67-56-1	Experimental Photolysis		Photolytic half-life (in air)	35 days (t 1/2)	
Methyl Alcohol	67-56-1	Experimental Soil Metabolism Aerobic	5 days	Carbon dioxide evolution	53.4 %CO ₂ evolution/THCO ₂ evolution	
Potassium Rosinate	61790-50-9	Analogous Compound Biodegradation	28 days	Carbon dioxide evolution	80 %CO ₂ evolution/THCO ₂ evolution	OECD 301B - Mod. Sturm or CO ₂
Toluene	108-88-3	Experimental Biodegradation	20 days	Biological Oxygen Demand	80 %BOD/ThOD	APHA Std Meth Water/Wastewater
Toluene	108-88-3	Experimental Photolysis		Photolytic half-life (in air)	5.2 days (t 1/2)	
Zinc Oxide	1314-13-2	Data not available/insufficient	N/A	N/A	N/A	N/A
2,2'-Methylenebis(6-tert-butyl-p-cresol)	119-47-1	Experimental Biodegradation	28 days	Biological Oxygen Demand	0 %BOD/ThOD	OECD 301C - MITI (I)
Potassium Hydroxide	1310-58-3	Data not available/insufficient	N/A	N/A	N/A	N/A
C.I. Pigment Blue 15	147-14-8	Experimental Biodegradation	28 days	Biological Oxygen Demand	<1 %BOD/ThOD	OECD 301F - Manometric Respiro
Acetone	67-64-1	Experimental Biodegradation	28 days	Biological Oxygen Demand	78 %BOD/ThOD	OECD 301D - Closed Bottle Test
Acetone	67-64-1	Experimental Photolysis		Photolytic half-life (in air)	147 days (t 1/2)	
Triethanolamine	102-71-6	Experimental Biodegradation	19 days	Dissolv. Organic Carbon Deplet	96 %removal of DOC	similar to OECD 301E

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
2,3-Dichloro-1,3-Butadiene-chloroprene copolymer	25067-95-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Glycerol Esters of Rosin Acids	8050-31-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Methyl Alcohol	67-56-1	Experimental BCF - Fish	3 days	Bioaccumulation Factor	<4.5	
Methyl Alcohol	67-56-1	Experimental Bioconcentration		Log of Octanol/H ₂ O part. coeff	-0.77	
Potassium Rosinate	61790-50-9	Analogous Compound BCF - Fish	20 days	Bioaccumulation Factor	≤129	
Toluene	108-88-3	Experimental BCF - Other	72 hours	Bioaccumulation Factor	90	
Toluene	108-88-3	Experimental Bioconcentration		Log of Octanol/H ₂ O part. coeff	2.73	

Zinc Oxide	1314-13-2	Experimental BCF - Fish	56 days	Bioaccumulation Factor	≤217	OECD305-Bioconcentration
2,2'-Methylenebis(6-tert-butyl-p-cresol)	119-47-1	Experimental BCF - Fish	60 days	Bioaccumulation Factor	840	OECD305-Bioconcentration
Potassium Hydroxide	1310-58-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
C.I. Pigment Blue 15	147-14-8	Experimental BCF - Fish	42 days	Bioaccumulation Factor	<3.6	OECD305-Bioconcentration
Acetone	67-64-1	Experimental BCF - Other		Bioaccumulation Factor	0.65	
Acetone	67-64-1	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	-0.24	
Triethanolamine	102-71-6	Experimental BCF - Fish	42 days	Bioaccumulation Factor	<3.9	similar to OECD 305

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

According to the Environmental Quality (Scheduled Wastes) Regulations 2005, scheduled waste has to be sent to a prescribed premise for recycling, treatment or disposal. Please approach Kualiti Alam for proper schedule waste classification and disposal.

SECTION 14: Transport Information

Marine Transport (IMDG)

UN Number:UN3082

Proper Shipping Name:ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Technical Name:(ZINCOXIDE,2,2-METHYLENEBIS(6-TERT-BUTYL-P-CRESOL))

Hazard Class/Division:9

Subsidiary Risk:None assigned.

Packing Group:III

Limited Quantity:None assigned.

Marine Pollutant: Yes

Marine Pollutant Technical Name: (ZINCOXIDE,2,2-METHYLENEBIS(6-TERT-BUTYL-P-CRESOL))

Other Dangerous Goods Descriptions:

None assigned.

Air Transport (IATA)

UN Number:UN3082

Proper Shipping Name:ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Technical Name:(ZINCOXIDE,2,2-METHYLENEBIS(6-TERT-BUTYL-P-CRESOL))

Hazard Class/Division:9

Subsidiary Risk:None assigned.

Packing Group:III

Limited Quantity:None assigned.

Marine Pollutant: Yes

Marine Pollutant Technical Name: (ZINCOXIDE,2,2-METHYLENEBIS(6-TERT-BUTYL-P-CRESOL))

Other Dangerous Goods Descriptions:

None assigned.

Transportation classifications are provided as a customer service. As for shipping, YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M's transportation classifications are based on product formulation, packaging, 3M policies and 3M's understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and not the packaging, labeling or marking requirements. The above information is only for reference. If you are shipping by air or ocean, YOU are advised to check & meet applicable regulatory requirements.

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 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. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory. The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

SECTION 16: Other information

DISCLAIMER: The information in this Safety Data Sheet (SDS) 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 SDS or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own evaluation to satisfy themselves as to the suitability of the product for their own intended applications. In addition, this SDS is being provided to convey health and safety information. If you are the importer of record of this product into Malaysia, you are responsible for all applicable regulatory requirements, including, but not limited to, product registrations/notifications, substance volume tracking, and potential substance registration/notification.

3M Malaysia SDSs are available at www.3M.com.my