



## 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™ Scotch-Weld™ Fuel Resistant Coating EC-776

#### Product Identification Numbers

62-0776-6530-5      62-0776-8530-3      87-3300-0625-2      87-3300-0626-0

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Fuel Resistant coating

#### 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

Flammable Liquid: Category 2.  
Acute Toxicity (inhalation): Category 4.  
Skin Corrosion/Irritation: Category 1.  
Serious Eye Damage/Irritation: Category 1.  
Germ Cell Mutagenicity: Category 2.  
Carcinogenicity: Category 1A.  
Reproductive Toxicity: Category 1B.  
Specific Target Organ Toxicity (single exposure): Category 2.  
Specific Target Organ Toxicity (repeated exposure): Category 2.  
Chronic Aquatic Toxicity: Category 3.

#### 2.2. Label elements

**Signal word**

Danger

**Symbols**

Flame | Corrosion | Exclamation mark | Health Hazard |

**Pictograms****Hazard Statements:**

H225	Highly flammable liquid and vapor.
H332	Harmful if inhaled.
H314	Causes severe skin burns and eye damage.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H360	May damage fertility or the unborn child.
H371	May cause damage to organs: blood or blood-forming organs   cardiovascular system   kidney/urinary tract   nervous system   respiratory system.
H373	May cause damage to organs through prolonged or repeated exposure: blood or blood-forming organs   cardiovascular system   kidney/urinary tract   liver   respiratory system.
H412	Harmful to aquatic life with long lasting effects.

**Precautionary statements****Prevention:**

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P280J	Wear protective gloves, protective clothing, respiratory protection, and eye/face protection.
P281	Use personal protective equipment as required.

**Response:**

P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P370 + P378	In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

**Disposal:**

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

May cause chemical gastrointestinal burns., May cause drowsiness or dizziness.

### SECTION 3: Composition/information on ingredients

This material is a mixture.

<b>Ingredient</b>	<b>C.A.S. No.</b>	<b>% by Wt</b>
METHYL ISOBUTYL KETONE	108-10-1	40 - 70
ACRYLONITRILE-BUTADIENE POLYMER	9003-18-3	7 - 13
PHENOLIC RESIN	9039-25-2	7 - 13
METHYL ETHYL KETONE	78-93-3	5 - 10
ETHYL ALCOHOL	64-17-5	5 - 10
PHENOL	108-95-2	1 - 5
METHYL ALCOHOL	67-56-1	< 1

### 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 flush with large amounts of water for at least 15 minutes. Remove contaminated clothing. Get immediate medical attention. Wash clothing before reuse.

##### **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. Do not induce vomiting. Get immediate medical attention.

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

Skin burns (localized redness, swelling, itching, intense pain, blistering, and tissue destruction). Allergic skin reaction (redness, swelling, blistering, and itching). Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of vision). Central nervous system depression (headache, dizziness, drowsiness, incoordination, nausea, slurred speech, giddiness, and unconsciousness). 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

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

Hydrocarbons

##### Condition

During Combustion

Formaldehyde  
Carbon monoxide  
Carbon dioxide

During Combustion  
During Combustion  
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 dikes to prevent entry into sewer systems or bodies of water.

### **6.3. Methods and material for containment and cleaning up**

Contain spill. Cover spill area with a fire extinguishing foam that is resistant to polar solvents. 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 metal container approved for transportation by appropriate authorities. Clean up residue with detergent and 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. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Wear low static or properly grounded shoes. Use personal protective equipment (gloves, respirators, etc.) as required. To minimize the risk of ignition, determine applicable electrical classifications for the process using this product and select specific local exhaust ventilation equipment to avoid flammable vapor accumulation. Ground/bond container and receiving equipment if there is potential for static electricity accumulation during transfer.

### **7.2. Conditions for safe storage including any incompatibilities**

Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store away from 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.

<b>Ingredient</b>	<b>C.A.S. No.</b>	<b>Agency</b>	<b>Limit type</b>	<b>Additional Comments</b>
METHYL ISOBUTYL KETONE	108-10-1	ACGIH	TWA:20 ppm;STEL:75 ppm	A3: Confirmed animal carcin.
METHYL ISOBUTYL KETONE	108-10-1	Malaysia OELs	TWA(8 hours):205 mg/m3(50 ppm)	
PHENOL	108-95-2	ACGIH	TWA:5 ppm	A4: Not class. as human carcin, Danger of cutaneous absorption
PHENOL	108-95-2	Malaysia OELs	TWA(8 hours):19 mg/m3(5 ppm)	SKIN
ETHYL ALCOHOL	64-17-5	ACGIH	STEL:1000 ppm	A3: Confirmed animal carcin.
ETHYL ALCOHOL	64-17-5	Malaysia OELs	TWA(8 hours):1880 mg/m3(1000 ppm)	
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 mg/m3(200 ppm)	SKIN
METHYL ETHYL KETONE	78-93-3	ACGIH	TWA:75 ppm;STEL:150 ppm	Danger of cutaneous absorption
METHYL ETHYL KETONE	78-93-3	Malaysia OELs	TWA(8 hours):590 mg/m3(200 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. 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 exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

### Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for formaldehyde

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

Half facepiece or full facepiece supplied-air respirator

Organic vapor cartridges may have short service life.

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	Yellow
Odor	Mild Solvent
Odor threshold	No Data Available
pH	No Data Available
Melting point/Freezing point	No Data Available
Boiling point/Initial boiling point/Boiling range	79.4 °C [ @ 101,325 Pa ] [ Test Method: Estimated ]
Flash Point	10 °C [ @ 101,325 Pa ] [ Test Method: Closed Cup ]
Evaporation rate	2.7 [ Ref Std: ETHER=1 ]
Flammability	Flammable Liquid: Category 2.
Flammable Limits(LEL)	1.8 % volume [ @ 20 °C ] [ Test Method: Estimated ]
Flammable Limits(UEL)	11.5 % volume [ @ 20 °C ] [ Test Method: Estimated ]
Vapor Pressure	10,665.8 Pa [ @ 20 °C ] [ Test Method: Estimated ]
Relative Vapor Density	2.5 [ Ref Std: AIR=1 ]
Density	0.899 g/ml [ @ 20 °C ]
Relative Density	0.899 [ Ref Std: WATER=1 ]
Water solubility	Moderate
Solubility- non-water	No Data Available
Partition coefficient: n-octanol/ water	No Data Available
Autoignition temperature	448.9 °C [ Test Method: Estimated ]
Decomposition temperature	No Data Available
Kinematic Viscosity	1,557 mm <sup>2</sup> /sec
Volatile Organic Compounds	<=690 g/l [ Test Method: calculated SCAQMD rule 443.1 ]
Percent volatile	<=77 %
VOC Less H <sub>2</sub> O & Exempt Solvents	<=695 g/l [ Test Method: calculated SCAQMD rule 443.1 ]
Molecular weight	No Data Available

Particle Characteristics	Not Applicable
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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

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

#### 10.2. Chemical stability

Stable.

#### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

#### 10.4. Conditions to avoid

Sparks and/or flames

#### 10.5. Incompatible materials

Strong acids

Strong oxidizing agents

#### 10.6. Hazardous decomposition products

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

Refer to section 5.2 for hazardous decomposition products during combustion.

## SECTION 11: Toxicological information

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

#### 11.1. Information on Toxicological effects

##### Signs and Symptoms of Exposure

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

##### Inhalation:

Harmful if inhaled.

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Allergic Respiratory Reaction in sensitive people: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest.

May cause additional health effects (see below).

##### Skin Contact:

Corrosive (Skin Burns): Signs/symptoms may include localized redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.

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

May cause additional health effects (see below).

##### Eye Contact:

Corrosive (Eye Burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

**Ingestion:**

May be harmful if swallowed.

Gastrointestinal Corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain; nausea; vomiting; and diarrhea; blood in the feces and/or vomitus may also be seen.

May cause additional health effects (see below).

**Additional Health Effects:**

**Single exposure may cause target organ effects:**

Cardiac Effects: Signs/symptoms may include irregular heartbeat (arrhythmia), changes in heart rate, damage to heart muscle, heart attack, and may be fatal.

Hematopoietic Effects: Signs/symptoms may include generalized weakness, fatigue and alterations in numbers of circulating blood cells.

Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate.

Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish colored skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.

Kidney/Bladder Effects: Signs/symptoms may include changes in urine production, abdominal or lower back pain, increased protein in urine, increased blood urea nitrogen (BUN), blood in urine, and painful urination.

**Prolonged or repeated exposure may cause target organ effects:**

Cardiac Effects: Signs/symptoms may include irregular heartbeat (arrhythmia), changes in heart rate, damage to heart muscle, heart attack, and may be fatal.

Hematopoietic Effects: Signs/symptoms may include generalized weakness, fatigue and alterations in numbers of circulating blood cells.

Liver Effects: Signs/symptoms may include loss of appetite, weight loss, fatigue, weakness, abdominal tenderness and jaundice.

Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate.

Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish colored skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.

Kidney/Bladder Effects: Signs/symptoms may include changes in urine production, abdominal or lower back pain, increased protein in urine, increased blood urea nitrogen (BUN), blood in urine, and painful urination.

**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:**



This product contains ethanol. Alcoholic beverages and ethanol in alcoholic beverages have been classified by the International Agency for Research on Cancer as carcinogenic to humans. There are also data associating human consumption of alcoholic beverages with developmental toxicity and liver toxicity. Exposure to ethanol during the foreseeable use of this product is not expected to cause cancer, developmental toxicity, or liver toxicity.

### 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 >10 - =20 mg/l
Overall product	Ingestion		No data available; calculated ATE >2,000 - =5,000 mg/kg
METHYL ISOBUTYL KETONE	Dermal	Rabbit	LD50 > 16,000 mg/kg
METHYL ISOBUTYL KETONE	Inhalation-Vapor (4 hours)	Rat	LC50 11 mg/l
METHYL ISOBUTYL KETONE	Ingestion	Rat	LD50 3,038 mg/kg
PHENOLIC RESIN	Dermal		LD50 estimated to be > 5,000 mg/kg
PHENOLIC RESIN	Inhalation-Dust/Mist		LC50 estimated to be > 12.5 mg/l
PHENOLIC RESIN	Ingestion		LD50 estimated to be > 5,000 mg/kg
ACRYLONITRILE-BUTADIENE POLYMER	Dermal	Rabbit	LD50 > 15,000 mg/kg
ACRYLONITRILE-BUTADIENE POLYMER	Ingestion	Rat	LD50 > 30,000 mg/kg
METHYL ETHYL KETONE	Dermal	Rabbit	LD50 > 8,050 mg/kg
METHYL ETHYL KETONE	Inhalation-Vapor (4 hours)	Rat	LC50 34.5 mg/l
METHYL ETHYL KETONE	Ingestion	Rat	LD50 2,737 mg/kg
ETHYL ALCOHOL	Dermal	Rabbit	LD50 > 15,800 mg/kg
ETHYL ALCOHOL	Inhalation-Vapor (4 hours)	Rat	LC50 124.7 mg/l
ETHYL ALCOHOL	Ingestion	Rat	LD50 17,800 mg/kg
PHENOL	Inhalation-Vapor		LC50 estimated to be 2 - 10 mg/l
PHENOL	Dermal	Rat	LD50 670 mg/kg
PHENOL	Ingestion	Rat	LD50 340 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

ATE = acute toxicity estimate

### Skin Corrosion/Irritation

Name	Species	Value
METHYL ISOBUTYL KETONE	Rabbit	Mild irritant
PHENOLIC RESIN	Professional judgement	No significant irritation
ACRYLONITRILE-BUTADIENE POLYMER	Professional judgement	No significant irritation
METHYL ETHYL KETONE	Rabbit	Minimal irritation
ETHYL ALCOHOL	Rabbit	No significant irritation
PHENOL	Rat	Corrosive

METHYL ALCOHOL	Rabbit	Mild irritant
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**Serious Eye Damage/Irritation**

Name	Species	Value
METHYL ISOBUTYL KETONE	Rabbit	Mild irritant
PHENOLIC RESIN	Professional judgement	Mild irritant
ACRYLONITRILE-BUTADIENE POLYMER	Professional judgement	No significant irritation
METHYL ETHYL KETONE	Rabbit	Severe irritant
ETHYL ALCOHOL	Rabbit	Severe irritant
PHENOL	Rabbit	Corrosive
METHYL ALCOHOL	Rabbit	Moderate irritant

**Sensitization:**
**Skin Sensitization**

Name	Species	Value
METHYL ISOBUTYL KETONE	Guinea pig	Not classified
ETHYL ALCOHOL	Human	Not classified
PHENOL	Guinea pig	Not classified
METHYL ALCOHOL	Guinea pig	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
METHYL ISOBUTYL KETONE	In Vitro	Not mutagenic
METHYL ETHYL KETONE	In Vitro	Not mutagenic
ETHYL ALCOHOL	In Vitro	Some positive data exist, but the data are not sufficient for classification
ETHYL ALCOHOL	In vivo	Some positive data exist, but the data are not sufficient for classification
PHENOL	In Vitro	Some positive data exist, but the data are not sufficient for classification
PHENOL	In vivo	Some positive data exist, but the data are not sufficient for classification
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

**Carcinogenicity**

Name	Route	Species	Value
METHYL ISOBUTYL KETONE	Inhalation	Multiple animal species	Carcinogenic
METHYL ETHYL KETONE	Inhalation	Human	Not carcinogenic
ETHYL ALCOHOL	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
PHENOL	Dermal	Mouse	Some positive data exist, but the data are not

			sufficient for classification
PHENOL	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
METHYL ALCOHOL	Inhalation	Multiple animal species	Not carcinogenic

## Reproductive Toxicity

### Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
METHYL ISOBUTYL KETONE	Inhalation	Not classified for female reproduction	Multiple animal species	NOAEL 8.2 mg/l	2 generation
METHYL ISOBUTYL KETONE	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	13 weeks
METHYL ISOBUTYL KETONE	Inhalation	Not classified for male reproduction	Multiple animal species	NOAEL 8.2 mg/l	2 generation
METHYL ISOBUTYL KETONE	Inhalation	Not classified for development	Mouse	NOAEL 12.3 mg/l	during organogenesis
METHYL ETHYL KETONE	Inhalation	Not classified for development	Rat	LOAEL 8.8 mg/l	during gestation
ETHYL ALCOHOL	Inhalation	Not classified for development	Rat	NOAEL 38 mg/l	during gestation
ETHYL ALCOHOL	Ingestion	Not classified for development	Rat	NOAEL 5,200 mg/kg/day	premating & during gestation
PHENOL	Ingestion	Not classified for female reproduction	Rat	NOAEL 321 mg/kg/day	2 generation
PHENOL	Ingestion	Not classified for male reproduction	Rat	NOAEL 321 mg/kg/day	2 generation
PHENOL	Ingestion	Not classified for development	Rat	NOAEL 120 mg/kg/day	during organogenesis
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

## Target Organ(s)

### Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
METHYL ISOBUTYL KETONE	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	LOAEL 0.1 mg/l	2 hours
METHYL ISOBUTYL KETONE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
METHYL ISOBUTYL KETONE	Inhalation	vascular system	Not classified	Dog	NOAEL Not available	not available
METHYL ISOBUTYL KETONE	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Rat	LOAEL 900 mg/kg	not applicable
METHYL ETHYL KETONE	Inhalation	central nervous system depression	May cause drowsiness or dizziness	official classification	NOAEL Not available	
METHYL ETHYL KETONE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	

METHYL ETHYL KETONE	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
METHYL ETHYL KETONE	Ingestion	liver	Not classified	Rat	NOAEL Not available	not applicable
METHYL ETHYL KETONE	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 1,080 mg/kg	not applicable
ETHYL ALCOHOL	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	LOAEL 9.4 mg/l	not available
ETHYL ALCOHOL	Inhalation	central nervous system depression	Not classified	Human and animal	NOAEL not available	
ETHYL ALCOHOL	Ingestion	central nervous system depression	Not classified	Multiple animal species	NOAEL not available	
ETHYL ALCOHOL	Ingestion	kidney and/or bladder	Not classified	Dog	NOAEL 3,000 mg/kg	
PHENOL	Dermal	hematopoietic system	Causes damage to organs	Rat	LOAEL 108 mg/kg	not available
PHENOL	Dermal	heart   nervous system   kidney and/or bladder	Causes damage to organs	Rat	LOAEL 107 mg/kg	24 hours
PHENOL	Dermal	liver	Not classified	Human	NOAEL Not available	not available
PHENOL	Inhalation	respiratory irritation	May cause respiratory irritation	Multiple animal species	NOAEL Not available	not available
PHENOL	Ingestion	kidney and/or bladder	Causes damage to organs	Rat	NOAEL 120 mg/kg/day	not applicable
PHENOL	Ingestion	respiratory system	Causes damage to organs	Human	NOAEL not available	poisoning and/or abuse
PHENOL	Ingestion	endocrine system   liver	Not classified	Rat	NOAEL 224 mg/kg	not applicable
PHENOL	Ingestion	heart	Not classified	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

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
METHYL ISOBUTYL KETONE	Inhalation	liver	Not classified	Rat	NOAEL 0.41 mg/l	13 weeks
METHYL ISOBUTYL KETONE	Inhalation	heart	Not classified	Multiple animal species	NOAEL 0.8 mg/l	2 weeks
METHYL ISOBUTYL KETONE	Inhalation	kidney and/or bladder	Not classified	Multiple animal species	NOAEL 0.4 mg/l	90 days
METHYL ISOBUTYL KETONE	Inhalation	respiratory system	Not classified	Multiple animal species	NOAEL 4.1 mg/l	14 weeks
METHYL ISOBUTYL KETONE	Inhalation	endocrine system   hematopoietic system	Not classified	Multiple animal species	NOAEL 0.41 mg/l	90 days
METHYL ISOBUTYL	Inhalation	nervous system	Not classified	Multiple	NOAEL 0.41	13 weeks

KETONE				animal species	mg/l	
METHYL ISOBUTYL KETONE	Ingestion	endocrine system   hematopoietic system   liver   kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
METHYL ISOBUTYL KETONE	Ingestion	heart   immune system   muscles   nervous system   respiratory system	Not classified	Rat	NOAEL 1,040 mg/kg/day	120 days
METHYL ETHYL KETONE	Dermal	nervous system	Not classified	Guinea pig	NOAEL Not available	31 weeks
METHYL ETHYL KETONE	Inhalation	liver   kidney and/or bladder   heart   endocrine system   gastrointestinal tract   bone, teeth, nails, and/or hair   hematopoietic system   immune system   muscles	Not classified	Rat	NOAEL 14.7 mg/l	90 days
METHYL ETHYL KETONE	Ingestion	liver	Not classified	Rat	NOAEL Not available	7 days
METHYL ETHYL KETONE	Ingestion	nervous system	Not classified	Rat	NOAEL 173 mg/kg/day	90 days
ETHYL ALCOHOL	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rabbit	LOAEL 124 mg/l	365 days
ETHYL ALCOHOL	Inhalation	hematopoietic system   immune system	Not classified	Rat	NOAEL 25 mg/l	14 days
ETHYL ALCOHOL	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 8,000 mg/kg/day	4 months
ETHYL ALCOHOL	Ingestion	kidney and/or bladder	Not classified	Dog	NOAEL 3,000 mg/kg/day	7 days
PHENOL	Dermal	nervous system	May cause damage to organs though prolonged or repeated exposure	Rabbit	LOAEL 260 mg/kg/day	18 days
PHENOL	Inhalation	heart   liver   kidney and/or bladder   respiratory system	Causes damage to organs through prolonged or repeated exposure	Guinea pig	LOAEL 0.1 mg/l	41 days
PHENOL	Inhalation	nervous system	May cause damage to organs though prolonged or repeated exposure	Multiple animal species	LOAEL 0.1 mg/l	14 days
PHENOL	Inhalation	hematopoietic system	Not classified	Human	NOAEL Not available	occupational exposure
PHENOL	Inhalation	immune system	Not classified	Rat	NOAEL 0.1 mg/l	2 weeks
PHENOL	Ingestion	kidney and/or bladder	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 12 mg/kg/day	14 days
PHENOL	Ingestion	hematopoietic system	Causes damage to organs through prolonged or repeated exposure	Mouse	LOAEL 1.8 mg/kg/day	28 days
PHENOL	Ingestion	nervous system	May cause damage to organs though prolonged or repeated exposure	Rat	LOAEL 308 mg/kg/day	13 weeks
PHENOL	Ingestion	liver	Not classified	Rat	NOAEL 40 mg/kg/day	14 days
PHENOL	Ingestion	respiratory system	Not classified	Rat	LOAEL 40 mg/kg/day	14 days
PHENOL	Ingestion	immune system	Not classified	Mouse	NOAEL 1.8 mg/kg/day	28 days
PHENOL	Ingestion	endocrine system	Not classified	Rat	NOAEL 120 mg/kg/day	14 days
PHENOL	Ingestion	skin   bone, teeth, nails, and/or hair	Not classified	Multiple animal	NOAEL 1,204	103 weeks

				species	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

**Aspiration Hazard**

Name	Value
METHYL ISOBUTYL KETONE	Some positive data exist, but the data are not sufficient for classification

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 3: Harmful to aquatic life with long lasting effects

No product test data available

Material	Cas #	Organism	Type	Exposure	Test Endpoint	Test Result
METHYL ISOBUTYL KETONE	108-10-1	Green algae	Experimental	96 hours	EC50	400 mg/l
METHYL ISOBUTYL KETONE	108-10-1	Water flea	Experimental	48 hours	EC50	>200 mg/l
METHYL ISOBUTYL KETONE	108-10-1	Zebra Fish	Experimental	96 hours	LC50	>179 mg/l
METHYL ISOBUTYL KETONE	108-10-1	Fathead Minnow	Experimental	32 days	NOEC	56.2 mg/l
METHYL ISOBUTYL KETONE	108-10-1	Water flea	Experimental	21 days	NOEC	78 mg/l
METHYL ISOBUTYL KETONE	108-10-1	Activated sludge	Experimental	30 minutes	EC50	>1,000
ACRYLONITRILE-BUTADIENE POLYMER	9003-18-3	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
PHENOLIC RESIN	9039-25-2	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
ETHYL ALCOHOL	64-17-5	Fathead Minnow	Experimental	96 hours	LC50	14,200 mg/l

ETHYL ALCOHOL	64-17-5	Fish	Experimental	96 hours	LC50	11,000 mg/l
ETHYL ALCOHOL	64-17-5	Green algae	Experimental	72 hours	EC50	275 mg/l
ETHYL ALCOHOL	64-17-5	Water flea	Experimental	48 hours	LC50	5,012 mg/l
ETHYL ALCOHOL	64-17-5	Green algae	Experimental	72 hours	ErC10	11.5 mg/l
ETHYL ALCOHOL	64-17-5	Water flea	Experimental	10 days	NOEC	9.6 mg/l
METHYL ETHYL KETONE	78-93-3	Fathead Minnow	Experimental	96 hours	LC50	2,993 mg/l
METHYL ETHYL KETONE	78-93-3	Green algae	Experimental	96 hours	ErC50	2,029 mg/l
METHYL ETHYL KETONE	78-93-3	Water flea	Experimental	48 hours	EC50	308 mg/l
METHYL ETHYL KETONE	78-93-3	Green algae	Experimental	96 hours	ErC10	1,289 mg/l
METHYL ETHYL KETONE	78-93-3	Water flea	Experimental	21 days	NOEC	100 mg/l
METHYL ETHYL KETONE	78-93-3	Bacteria	Experimental	16 hours	LOEC	1,150 mg/l
PHENOL	108-95-2	Bacteria	Experimental	24 hours	IC50	21 mg/l
PHENOL	108-95-2	Green algae	Experimental	96 hours	EC50	61.1 mg/l
PHENOL	108-95-2	Rainbow Trout	Experimental	96 hours	LC50	8.9 mg/l
PHENOL	108-95-2	Water flea	Experimental	48 hours	EC50	3.1 mg/l
PHENOL	108-95-2	Fish	Experimental	60 days	NOEC	0.077 mg/l
PHENOL	108-95-2	Water flea	Experimental	16 days	NOEC	0.16 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)

## 12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
METHYL ISOBUTYL KETONE	108-10-1	Experimental Biodegradation	28 days	Biological Oxygen Demand	83 %BOD/ThOD	OECD 301F - Manometric Respiro
METHYL	108-10-1	Experimental		Photolytic half-life	2.3 days (t 1/2)	

ISOBUTYL KETONE		Photolysis		(in air)		
ACRYLONITRIL E-BUTADIENE POLYMER	9003-18-3	Data not availbl-insufficient	N/A	N/A	N/A	N/A
PHENOLIC RESIN	9039-25-2	Data not availbl-insufficient	N/A	N/A	N/A	N/A
ETHYL ALCOHOL	64-17-5	Experimental Biodegradation	14 days	Biological Oxygen Demand	89 %BOD/ThOD	OECD 301C - MITI (I)
METHYL ETHYL KETONE	78-93-3	Experimental Biodegradation	28 days	Biological Oxygen Demand	98 %BOD/ThOD	OECD 301D - Closed Bottle Test
PHENOL	108-95-2	Experimental Biodegradation	100 hours	Biological Oxygen Demand	62 %BOD/ThOD	OECD 301C - MITI (I)
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 %CO2 evolution/THCO2 evolution	

### 12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
METHYL ISOBUTYL KETONE	108-10-1	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.9	OECD 117 log Kow HPLC method
ACRYLONITRIL E-BUTADIENE POLYMER	9003-18-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
PHENOLIC RESIN	9039-25-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
ETHYL ALCOHOL	64-17-5	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	-0.35	
METHYL ETHYL KETONE	78-93-3	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	0.3	OECD 117 log Kow HPLC method
PHENOL	108-95-2	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.47	
METHYL ALCOHOL	67-56-1	Experimental BCF - Fish	3 days	Bioaccumulation Factor	<4.5	
METHYL ALCOHOL	67-56-1	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	-0.77	

### 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:**UN1263**Proper Shipping Name:**PAINTS**Technical Name:**None assigned.**Hazard Class/Division:**3**Subsidiary Risk:**None assigned.**Packing Group:**II**Limited Quantity:**Yes**Marine Pollutant:** None assigned.**Marine Pollutant Technical Name:** None assigned.**Other Dangerous Goods Descriptions:**

None assigned.

**Air Transport (IATA)****UN Number:**UN1263**Proper Shipping Name:**PAINTS**Technical Name:**None assigned.**Hazard Class/Division:**3**Subsidiary Risk:**None assigned.**Packing Group:**II**Limited Quantity:**None assigned.**Marine Pollutant:** None assigned.**Marine Pollutant Technical Name:** None assigned.**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 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 material are in compliance with the provisions of Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the 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.

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