



## Safety Data Sheet

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

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### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Zinc Spray 16-501

#### Product Identification Numbers

80-6109-2798-2      HB-0042-6018-6

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

##### Recommended use

PROTECTIVE COATING, protective coating

##### Restrictions on use

INDUSTRIAL USE ONLY

#### 1.3. Supplier's details

**Address:** 3M Technologies (S) Pte Ltd, 10 Ang Mo Kio Street 65, Singapore 569059

**Telephone:** +65 6450 8888

**Website:** www.3m.com.sg

#### 1.4. Emergency telephone number

+65 6591 6888 (8.15am - 5.00pm, Monday - Friday)

### SECTION 2: Hazard identification

#### 2.1. Classification of the substance or mixture

Flammable Aerosol: Category 1.

Serious Eye Damage/Irritation: Category 2A

Reproductive Toxicity: Category 1B.

Specific Target Organ Toxicity (single exposure): Category 1.

Specific Target Organ Toxicity (single exposure): Category 3.

Specific Target Organ Toxicity (repeated exposure): Category 2.

Acute Aquatic Toxicity: Category 1.

Chronic Aquatic Toxicity: Category 1.

#### 2.2. Label elements

**SIGNAL WORD**

DANGER!

**Symbols**

Flame | Exclamation mark | Health Hazard | Environment |

**Pictograms**



**HAZARD STATEMENTS**

H222	Extremely flammable aerosol.
H229	Pressurized container: may burst if heated.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H360	May damage fertility or the unborn child.
H370	Causes damage to organs: cardiovascular system
H373	May cause damage to organs through prolonged or repeated exposure: nervous system sensory organs
H410	Very toxic to aquatic life with long lasting effects.

**PRECAUTIONARY STATEMENTS**

**Prevention:**

P201	Obtain special instructions before use.
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280E	Wear protective gloves.
P273	Avoid release to the environment.

**Response:**

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

**Storage:**

P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50C/122F.
P405	Store locked up.

**Disposal:**

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

Intentional misuse by deliberately concentrating and inhaling contents can be harmful or fatal.

**SECTION 3: Composition/information on ingredients**

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
Zinc	7440-66-6	45 - 53
Butane	106-97-8	10 - 15
Propane	74-98-6	10 - 15
METHYL ETHYL KETONE (MEK)	78-93-3	8 - 13
Toluene	108-88-3	2 - 5
Solvent naphtha (petroleum), light aliphatic	64742-89-8	4 - 9
Resin Epoxy Ester	66070-75-5	1 - 5

**SECTION 4: First aid measures****4.1. Description of first aid measures****Inhalation**

Remove person to fresh air. 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. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

**If swallowed**

Rinse mouth. If you feel unwell, get medical attention.

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

See Section 11.1 Information on toxicological effects

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

Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

**SECTION 5: Fire-fighting measures****5.1. Suitable extinguishing media**

In case of fire: Use a carbon dioxide or dry chemical extinguisher 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**

Carbon monoxide.  
Carbon dioxide.  
Oxides of Lead  
Oxides of zinc.

**Condition**

During combustion.  
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.

## 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

For larger spills, cover drains and build dykes to prevent entry into sewer systems or bodies of water.

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

Contain spill. 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. 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 or professional use only. Do not use in a confined area with minimal air exchange. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (eg. gloves, respirators...) as required.

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

Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight. Do not expose to temperatures exceeding 50C/122F. Store away from heat. Store away from acids. Store away from strong bases. Store away from oxidising 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	CAS Nbr	Agency	Limit type	Additional comments
Butane	106-97-8	ACGIH	STEL:1000 ppm	
Butane	106-97-8	Singapore PELs	TWA(8 hours):1900 mg/m3(800 ppm)	
Toluene	108-88-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcin
Toluene	108-88-3	Singapore PELs	TWA(8 hours):188 mg/m3(50 ppm)	
Propane	74-98-6	ACGIH	Limit value not established:	asphyxiant
METHYL ETHYL KETONE	78-93-3	ACGIH	TWA:200 ppm;STEL:300 ppm	

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(MEK)				
METHYL ETHYL KETONE (MEK)	78-93-3	Singapore PELs	TWA(8 hours):590 mg/m <sup>3</sup> (200 ppm);STEL(15 minutes):885 mg/m <sup>3</sup> (300 ppm)	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

Singapore PELs : Singapore. Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

### 8.2. Exposure controls

#### 8.2.1. Engineering controls

Do not remain in area where available oxygen may be reduced. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment.

#### 8.2.2. Personal protective equipment (PPE)

##### Eye/face protection

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

Indirect vented goggles.

##### Skin/hand protection

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

##### Respiratory protection

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

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

Half facepiece or full facepiece supplied-air respirator

Organic vapor respirators 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.

**Specific Physical Form:**

Compressed gas.

**Appearance/Odour**

HYDROCARBON ODOR, GRAY, HEAVY METAL  
DISPERSION

**Odour threshold**

*No data available.*

**pH**

*Not applicable.*

**Melting point/Freezing point**

*Not applicable.*

**Boiling point/Initial boiling point/Boiling range**

-42.2 - 162.8 °C

<b>Flash point</b>	-61.1 °C [ <i>Test Method</i> :Closed Cup] [ <i>Details</i> :Based on butane]
<b>Evaporation rate</b>	>=1 [ <i>Ref Std</i> :ETHER=1]
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Flammable Limits(LEL)</b>	0.9 %
<b>Flammable Limits(UEL)</b>	± 10 %
<b>Vapour pressure</b>	<i>No data available.</i>
<b>Vapour density</b>	<i>No data available.</i>
<b>Density</b>	1,144 kg/l
<b>Relative density</b>	1.15 [ <i>Ref Std</i> :WATER=1] [ <i>Details</i> :Reference standard: Water = 1]
<b>Water solubility</b>	<i>No data available.</i>
<b>Solubility- non-water</b>	<i>No data available.</i>
<b>Partition coefficient: n-octanol/water</b>	<i>No data available.</i>
<b>Autoignition temperature</b>	<i>No data available.</i>
<b>Decomposition temperature</b>	<i>No data available.</i>
<b>Viscosity</b>	<i>No data available.</i>
<b>Volatile organic compounds (VOC)</b>	± 52 % weight <i>No data available.</i>
<b>Percent volatile</b>	± 88 % volume
<b>VOC less H2O &amp; exempt solvents</b>	<i>No data available.</i>

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section

### 10.2 Chemical stability

Stable.

### 10.3 Possibility of hazardous reactions

Hazardous polymerisation will not occur.

### 10.4 Conditions to avoid

Heat.

Sparks and/or flames.

### 10.5 Incompatible materials

Strong acids.

Strong bases.

Strong oxidising agents.

### 10.6 Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
Hydrocarbons.	Normal Use
Ketones.	Normal Use
Toxic vapour, gas, particulate.	Normal Use

Refer to section 5.2 for hazardous decomposition products during combustion.

## SECTION 11: Toxicological information

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

present below the threshold for labelling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

## 11.1 Information on Toxicological effects

### Signs and Symptoms of Exposure

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

#### Inhalation

May be harmful if inhaled. Simple asphyxiation: Signs/symptoms may include increased heart rate, rapid respirations, drowsiness, headache, incoordination, altered judgement, nausea, vomiting, lethargy, seizures, coma, and may be fatal. 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.

#### Eye contact

Severe eye irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

#### Ingestion

May be harmful if swallowed.

Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea. May cause additional health effects (see below).

#### Additional Health Effects:

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

Central nervous system (CNS) depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness. Cardiac sensitisation: Signs/symptoms may include irregular heartbeat (arrhythmia), faintness, chest pain, and may be fatal.

##### 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 odours and 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 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-Dust/Mist(4 hr)		No data available; calculated ATE5 - 12.5 mg/l
Overall product	Ingestion		No data available; calculated ATE2,000 - 5,000 mg/kg
Zinc	Dermal	Rabbit	LD50 > 5,000 mg/kg

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Zinc	Inhalation-Dust/Mist	Rat	LC50 > 5.4 mg/l
Zinc	Ingestion	Rat	LD50 > 2,000 mg/kg
Propane	Inhalation-Gas (4 hours)	Rat	LC50 > 200,000 ppm
METHYL ETHYL KETONE (MEK)	Dermal	Rabbit	LD50 > 8,050 mg/kg
METHYL ETHYL KETONE (MEK)	Inhalation-Vapor (4 hours)	Rat	LC50 34.5 mg/l
METHYL ETHYL KETONE (MEK)	Ingestion	Rat	LD50 2,737 mg/kg
Butane	Inhalation-Gas (4 hours)	Rat	LC50 277,000 ppm
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
Solvent naphtha (petroleum), light aliphatic	Dermal	Rabbit	LD50 3,000 mg/kg
Solvent naphtha (petroleum), light aliphatic	Inhalation-Vapor (4 hours)	Rat	LC50 > 5.2 mg/l
Solvent naphtha (petroleum), light aliphatic	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
Propane	Rabbit	Minimal irritation
METHYL ETHYL KETONE (MEK)	Rabbit	Minimal irritation
Butane	Professional judgement	No significant irritation
Toluene	Rabbit	Irritant
Solvent naphtha (petroleum), light aliphatic	Rabbit	Irritant

**Serious Eye Damage/Irritation**

Name	Species	Value
Propane	Rabbit	Mild irritant
METHYL ETHYL KETONE (MEK)	Rabbit	Severe irritant
Butane	Rabbit	No significant irritation
Toluene	Rabbit	Moderate irritant
Solvent naphtha (petroleum), light aliphatic	Rabbit	No significant irritation

**Skin Sensitisation**

Name	Species	Value
Toluene	Guinea pig	Not classified

**Respiratory Sensitisation**

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

**Germ Cell Mutagenicity**

Name	Route	Value
Propane	In Vitro	Not mutagenic
METHYL ETHYL KETONE (MEK)	In Vitro	Not mutagenic
Butane	In Vitro	Not mutagenic
Toluene	In Vitro	Not mutagenic



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Toluene	In vivo	Not mutagenic
Solvent naphtha (petroleum), light aliphatic	In Vitro	Not mutagenic

**Carcinogenicity**

Name	Route	Species	Value
METHYL ETHYL KETONE (MEK)	Inhalation	Human	Not 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
Solvent naphtha (petroleum), light aliphatic	Dermal	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
METHYL ETHYL KETONE (MEK)	Inhalation	Not classified for development	Rat	LOAEL 8.8 mg/l	during gestation
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

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

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Propane	Inhalation	cardiac sensitization	Causes damage to organs	Human	NOAEL Not available	
Propane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Propane	Inhalation	respiratory irritation	Not classified	Human	NOAEL Not available	
METHYL ETHYL KETONE (MEK)	Inhalation	central nervous system depression	May cause drowsiness or dizziness	official classification	NOAEL Not available	
METHYL ETHYL KETONE (MEK)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
METHYL ETHYL KETONE (MEK)	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
METHYL ETHYL KETONE (MEK)	Ingestion	liver	Not classified	Rat	NOAEL Not available	not applicable
METHYL ETHYL KETONE (MEK)	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 1,080 mg/kg	not applicable
Butane	Inhalation	cardiac sensitization	Causes damage to organs	Human	NOAEL Not available	
Butane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Butane	Inhalation	heart	Not classified	Dog	NOAEL 5,000 ppm	25 minutes
Butane	Inhalation	respiratory irritation	Not classified	Rabbit	NOAEL Not available	

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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
Solvent naphtha (petroleum), light aliphatic	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Solvent naphtha (petroleum), light aliphatic	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Solvent naphtha (petroleum), light aliphatic	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
METHYL ETHYL KETONE (MEK)	Dermal	nervous system	Not classified	Guinea pig	NOAEL Not available	31 weeks
METHYL ETHYL KETONE (MEK)	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 (MEK)	Ingestion	liver	Not classified	Rat	NOAEL Not available	7 days
METHYL ETHYL KETONE (MEK)	Ingestion	nervous system	Not classified	Rat	NOAEL 173 mg/kg/day	90 days
Butane	Inhalation	kidney and/or bladder   blood	Not classified	Rat	NOAEL 4,489 ppm	90 days
Toluene	Inhalation	auditory system   nervous system   eyes   olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 2.3 mg/l	15 months
Toluene	Inhalation	heart   liver   kidney and/or bladder	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

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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

**Aspiration Hazard**

Name	Value
Toluene	Aspiration hazard
Solvent naphtha (petroleum), light aliphatic	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

**SECTION 12: Ecological information**

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

**12.1. Toxicity****Chronic aquatic hazard:**

GHS Chronic 1: Very toxic to aquatic life with long lasting effects.

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
Zinc	7440-66-6	Chinook Salmon	Experimental	96 hours	LC50	0.182 mg/l
Zinc	7440-66-6	Green Algae	Experimental	72 hours	EC50	0.106 mg/l
Zinc	7440-66-6	Water flea	Experimental	48 hours	EC50	0.07 mg/l
Butane	106-97-8		Data not available or insufficient for classification			
Propane	74-98-6		Data not available or insufficient for classification			
METHYL ETHYL KETONE (MEK)	78-93-3	Fathead minnow	Experimental	96 hours	LC50	2,993 mg/l
METHYL ETHYL KETONE (MEK)	78-93-3	Green algae	Experimental	96 hours	EC50	2,029 mg/l
METHYL ETHYL KETONE	78-93-3	Water flea	Experimental	48 hours	EC50	308 mg/l

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(MEK)						
METHYL ETHYL KETONE (MEK)	78-93-3	Green Algae	Experimental	96 hours	Effect Concentration 10%	1,289 mg/l
METHYL ETHYL KETONE (MEK)	78-93-3	Water flea	Experimental	21 days	NOEC	100 mg/l
Toluene	108-88-3	Coho Salmon	Experimental	96 hours	LC50	5.5 mg/l
Toluene	108-88-3	Fish other	Experimental	96 hours	LC50	6.41 mg/l
Toluene	108-88-3	Green Algae	Experimental	72 hours	EC50	12.5 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	Water flea	Experimental	7 days	NOEC	0.74 mg/l
Solvent naphtha (petroleum), light aliphatic	64742-89-8	Fathead minnow	Estimated	96 hours	Lethal Level 50%	4.1 mg/l
Solvent naphtha (petroleum), light aliphatic	64742-89-8	Water flea	Estimated	48 hours	Effect Level 50%	4.5 mg/l
Solvent naphtha (petroleum), light aliphatic	64742-89-8	Green algae	Experimental	72 hours	Effect Level 50%	11 mg/l
Solvent naphtha (petroleum), light aliphatic	64742-89-8	Water flea	Estimated	21 days	No obs Effect Level	2.6 mg/l
Solvent naphtha (petroleum), light aliphatic	64742-89-8	Green algae	Experimental	72 hours	No obs Effect Level	0.1 mg/l
Resin Epoxy Ester	66070-75-5		Data not available or insufficient for classification			

**12.2. Persistence and degradability**

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Zinc	7440-66-6	Data not available-insufficient			N/A	
Butane	106-97-8	Experimental Photolysis		Photolytic half-life (in air)	12.3 days (t 1/2)	Other methods
Propane	74-98-6	Experimental Photolysis		Photolytic half-life (in air)	27.5 days (t 1/2)	Other methods
METHYL ETHYL KETONE (MEK)	78-93-3	Experimental Biodegradation	28 days	BOD	98 % BOD/ThBOD	OECD 301D - Closed bottle test

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Toluene	108-88-3	Experimental Photolysis		Photolytic half-life (in air)	5.2 days (t 1/2)	Other methods
Toluene	108-88-3	Experimental Biodegradation	20 days	BOD	80 % weight	
Solvent naphtha (petroleum), light aliphatic	64742-89-8	Estimated Biodegradation	28 days	BOD	77.05 % BOD/ThBOD	OECD 301F - Manometric respirometry
Resin Epoxy Ester	66070-75-5	Data not available-insufficient			N/A	

**12.3 : Bioaccumulative potential**

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Zinc	7440-66-6	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Butane	106-97-8	Experimental Bioconcentration		Log Kow	2.89	Other methods
Propane	74-98-6	Experimental Bioconcentration		Log Kow	2.36	Other methods
METHYL ETHYL KETONE (MEK)	78-93-3	Experimental Bioconcentration		Log Kow	0.29	Other methods
Toluene	108-88-3	Experimental Bioconcentration		Log Kow	2.73	Other methods
Solvent naphtha (petroleum), light aliphatic	64742-89-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Resin Epoxy Ester	66070-75-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

**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.

Incinerate in a permitted waste incineration facility. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall

be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

## **SECTION 14: Transport Information**

### **International Regulations**

**UN No.:** Not restricted for transport.

**UN Proper shipping name:** Not restricted for transport.

**Transportation Class (IMO):** None assigned

**Transportation Class (IATA):** None assigned

**Other Dangerous Goods Descriptions (IMO):** None assigned

**Other Dangerous Goods Descriptions (IATA):** None assigned

**Packing Group:** None assigned

**Marine pollutant:** None assigned

## **SECTION 15: Regulatory information**

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

#### **Global inventory status**

Contact 3M for more information. The components of this material are in compliance with the provisions of the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this 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.

#### **This product may contain component(s) that are regulated by the following:**

Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations: this product is subject to SDS, labelling, PEL and other requirements in the Act/Regulations.

Fire Safety (Petroleum And Flammable Materials) Regulations: this product is subject to import, transport and storage requirements in the Regulation.

Sewerage & Drainage Act and Sewerage and Drainage (Trade Effluent) Regulations: This product is subject to the requirements in the act/regulation.

Misuse of Drug Act: This product is subject to the requirements of the Act.

## **SECTION 16: Other information**

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

**3M Singapore SDSs are available at [www.3m.com.sg](http://www.3m.com.sg)**