



## Safety Data Sheet

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### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Scotchkote™ Liquid Phenolic Primer 345

#### Product Identification Numbers

80-6109-1539-1, 80-6116-1467-0, 80-6300-0109-9

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

##### Recommended use

Primer for Metal, Primer

#### 1.3. Supplier's details

<b>MANUFACTURER:</b>	3M
<b>DIVISION:</b>	Electrical Markets Division
<b>ADDRESS:</b>	3M Center, St. Paul, MN 55144-1000, USA
<b>Telephone:</b>	1-888-3M HELPS (1-888-364-3577)

#### 1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

### SECTION 2: Hazard identification

#### 2.1. Hazard classification

Flammable Liquid: Category 2.  
Acute Toxicity (oral): Category 4.  
Serious Eye Damage/Irritation: Category 1.  
Skin Corrosion/Irritation: Category 1.  
Skin Sensitizer: Category 1A.  
Reproductive Toxicity: Category 2.  
Carcinogenicity: Category 1A.  
Specific Target Organ Toxicity (single exposure): Category 1.  
Specific Target Organ Toxicity (single exposure): Category 3.  
Specific Target Organ Toxicity (repeated exposure): Category 1.

#### 2.2. Label elements

Signal word

Danger

**Symbols**

Flame | Corrosion | Exclamation mark | Health Hazard |

**Pictograms**



**Hazard Statements**

Highly flammable liquid and vapor.

Harmful if swallowed.  
Causes severe skin burns and eye damage.  
May cause an allergic skin reaction.  
May cause drowsiness or dizziness.  
Suspected of damaging fertility or the unborn child.  
May cause cancer.

Causes damage to organs:  
blood or blood-forming organs |  
cardiovascular system |  
nervous system |  
kidney/urinary tract |  
respiratory system |  
sensory organs |

Causes damage to organs through prolonged or repeated exposure:  
blood or blood-forming organs |  
cardiovascular system |  
liver |  
kidney/urinary tract |  
respiratory system |

May cause damage to organs through prolonged or repeated exposure:  
nervous system |

**Precautionary Statements**

**Prevention:**

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Ground/bond container and receiving equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Keep container tightly closed.  
Use explosion-proof electrical/ventilating/lighting equipment.  
Do not breathe dust/fume/gas/mist/vapors/spray.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves, protective clothing, and eye/face protection.  
Do not eat, drink or smoke when using this product.

Wash thoroughly after handling.  
Contaminated work clothing must not be allowed out of the workplace.

**Response:**

IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Immediately call a POISON CENTER or doctor/physician.  
If skin irritation or rash occurs: Get medical advice/attention.  
Wash contaminated clothing before reuse.  
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
Specific treatment (see Notes to Physician on this label).  
In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

**Storage:**

Store in a well-ventilated place. Keep container tightly closed.  
Keep cool.  
Store locked up.

**Disposal:**

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

**Notes to Physician:**

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.

25% of the mixture consists of ingredients of unknown acute inhalation toxicity.

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

Ingredient	C.A.S. No.	% by Wt
ETHANOL	64-17-5	30 - 40 Trade Secret *
PHENOL-FORMALDEHYDE RESIN	9003-35-4	20 - 30 Trade Secret *
Iron Oxide (FE2O3)	1309-37-1	10 - 30 Trade Secret *
BUTANOL	71-36-3	3 - 7 Trade Secret *
METHANOL	67-56-1	3 - 7 Trade Secret *
2-BUTOXYETHANOL	111-76-2	3 - 7 Trade Secret *
Water	7732-18-5	3 - 7 Trade Secret *
PHENOL	108-95-2	1 - 5 Trade Secret *
1,2-Ethanediamine, N1-[3-(trimethoxysilyl)propyl]-	1760-24-3	0.1 - 1 Trade Secret *
Methyl isobutyl ketone	108-10-1	0.1 - 1 Trade Secret *
Formaldehyde	50-00-0	0.1 - 1 Trade Secret *

\*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

**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. 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**

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 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**

<u>Substance</u>	<u>Condition</u>
Carbon monoxide	During Combustion
Carbon dioxide	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. An appropriate aqueous film forming foam (AFFF) is recommended. 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 an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. 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 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	OSHA	TWA:410 mg/m <sup>3</sup> (100 ppm)	
PHENOL	108-95-2	ACGIH	TWA:5 ppm	SKIN, A4: Not class. as human carcin
PHENOL	108-95-2	OSHA	TWA:19 mg/m <sup>3</sup> (5 ppm)	SKIN
2-BUTOXYETHANOL	111-76-2	ACGIH	TWA:20 ppm	A3: Confirmed animal carcin.
2-BUTOXYETHANOL	111-76-2	OSHA	TWA:240 mg/m <sup>3</sup> (50 ppm)	SKIN
Iron Oxide (FE <sub>2</sub> O <sub>3</sub> )	1309-37-1	ACGIH	TWA(respirable fraction):5 mg/m <sup>3</sup>	A4: Not class. as human carcin
Iron Oxide (FE <sub>2</sub> O <sub>3</sub> )	1309-37-1	OSHA	TWA(as fume):10 mg/m <sup>3</sup>	
ROUGE	1309-37-1	OSHA	TWA(as total dust):15 mg/m <sup>3</sup> ;TWA(respirable fraction):5 mg/m <sup>3</sup>	
Formaldehyde	50-00-0	ACGIH	TWA:0.1 ppm;STEL:0.3 ppm	A2: Suspected human carcin., Dermal/Respiratory

				Sensitizer
Formaldehyde	50-00-0	OSHA	TWA:0.75 ppm;STEL:2 ppm	29 CFR 1910.1048
ETHANOL	64-17-5	ACGIH	STEL:1000 ppm	A3: Confirmed animal carcin.
ETHANOL	64-17-5	OSHA	TWA:1900 mg/m3(1000 ppm)	
METHANOL	67-56-1	ACGIH	TWA:200 ppm;STEL:250 ppm	SKIN
METHANOL	67-56-1	OSHA	TWA:260 mg/m3(200 ppm)	
BUTANOL	71-36-3	ACGIH	TWA:20 ppm	
BUTANOL	71-36-3	OSHA	TWA:300 mg/m3(100 ppm)	

ACGIH : American Conference of Governmental Industrial Hygienists  
 AIHA : American Industrial Hygiene Association  
 CMRG : Chemical Manufacturer's Recommended Guidelines  
 OSHA : United States Department of Labor - Occupational Safety and Health Administration  
 TWA: Time-Weighted-Average  
 STEL: Short Term Exposure Limit  
 CEIL: Ceiling

**8.2. Exposure controls**

**8.2.1. Engineering controls**

Provide ventilated enclosure for heat curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment. 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.

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

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron – Butyl rubber  
 Apron - 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
- 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

<b>General Physical Form:</b>	Liquid
<b>Odor, Color, Grade:</b>	Red, Solvent Odor
<b>Odor threshold</b>	<i>No Data Available</i>
<b>pH</b>	<i>No Data Available</i>
<b>Melting point</b>	<i>Not Applicable</i>
<b>Boiling Point</b>	148 °F [ <i>Details:Boiling Range 148 F - 336 F</i> ]
<b>Flash Point</b>	55 °F [ <i>Test Method:Tagliabue Closed Cup</i> ]
<b>Evaporation rate</b>	> 1 [ <i>Ref Std:BUOAC=1</i> ]
<b>Flammability (solid, gas)</b>	Not Applicable
<b>Flammable Limits(LEL)</b>	1.0 % volume
<b>Flammable Limits(UEL)</b>	36.5 % volume
<b>Vapor Pressure</b>	1286 mmHg [ <i>Test Method:Calculated</i> ] [ <i>Details:@55C</i> ]
<b>Vapor Density</b>	> 1 [ <i>Ref Std:AIR=1</i> ]
<b>Density</b>	1.1 g/ml
<b>Specific Gravity</b>	1.1 [ <i>Ref Std:WATER=1</i> ]
<b>Solubility in Water</b>	Negligible
<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>	38 - 40 centipoise [ <i>Test Method:Estimated</i> ]
<b>Volatile Organic Compounds</b>	608.2 g/l [ <i>Test Method:calculated per EPA method 24</i> ]
<b>Volatile Organic Compounds</b>	5.08 lb/gal [ <i>Test Method:calculated per EPA method 24</i> ]
<b>Percent volatile</b>	56 % weight
<b>Percent volatile</b>	74 % volume

## 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

Sparks and/or flames

### 10.5. Incompatible materials

Strong oxidizing agents

Reducing 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:

May be 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:

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:

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.

May cause blindness.

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.

Ingredient	CAS No.	Class Description	Regulation
Formaldehyde	50-00-0	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
Formaldehyde	50-00-0	Known human carcinogen	National Toxicology Program Carcinogens
Formaldehyde	50-00-0	Cancer hazard	OSHA Carcinogens
Methyl isobutyl ketone	108-10-1	Grp. 2B: Possible human carc.	International Agency for Research on 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 ATE20 - 50 mg/l
Overall product	Ingestion		No data available; calculated ATE300 - 2,000 mg/kg
ETHANOL	Dermal	Rabbit	LD50 > 15,800 mg/kg
ETHANOL	Inhalation-Vapor (4 hours)	Rat	LC50 124.7 mg/l
ETHANOL	Ingestion	Rat	LD50 17,800 mg/kg
PHENOL-FORMALDEHYDE RESIN	Dermal	Rat	LD50 > 2,000 mg/kg
PHENOL-FORMALDEHYDE RESIN	Ingestion	Rat	LD50 > 2,900 mg/kg
Iron Oxide (FE2O3)	Dermal	Not available	LD50 3,100 mg/kg
Iron Oxide (FE2O3)	Ingestion	Not available	LD50 3,700 mg/kg
BUTANOL	Dermal	Rabbit	LD50 3,402 mg/kg
BUTANOL	Inhalation-Vapor (4 hours)	Rat	LC50 24 mg/l
BUTANOL	Ingestion	Rat	LD50 2,290 mg/kg
METHANOL	Dermal		LD50 estimated to be 1,000 - 2,000 mg/kg
METHANOL	Inhalation-Vapor		LC50 estimated to be 10 - 20 mg/l
METHANOL	Ingestion		LD50 estimated to be 50 - 300 mg/kg
2-BUTOXYETHANOL	Dermal	Guinea pig	LD50 > 2,000 mg/kg
2-BUTOXYETHANOL	Inhalation-Vapor (4 hours)	Guinea pig	LC50 > 2.6 mg/l
2-BUTOXYETHANOL	Ingestion	Guinea pig	LD50 1,414 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
1,2-Ethanediamine, N1-[3-(trimethoxysilyl)propyl]-	Dermal	Rabbit	LD50 > 2,000 mg/kg
1,2-Ethanediamine, N1-[3-(trimethoxysilyl)propyl]-	Inhalation-Dust/Mist (4 hours)	Rat	LC50 >1.49, <2.44 mg/l
1,2-Ethanediamine, N1-[3-(trimethoxysilyl)propyl]-	Ingestion	Rat	LD50 1,897 mg/kg
Methyl isobutyl ketone	Dermal	Rabbit	LD50 > 16,000 mg/kg
Methyl isobutyl ketone	Inhalation-Vapor (4 hours)	Rat	LC50 >8.2, <16.4 mg/l
Methyl isobutyl ketone	Ingestion	Rat	LD50 3,038 mg/kg
Formaldehyde	Dermal	Rabbit	LD50 270 mg/kg
Formaldehyde	Inhalation-Gas (4 hours)	Rat	LC50 470 ppm
Formaldehyde	Ingestion	Rat	LD50 800 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
ETHANOL	Rabbit	No significant irritation
PHENOL-FORMALDEHYDE RESIN	Human and animal	Mild irritant
Iron Oxide (FE2O3)	Rabbit	No significant irritation
BUTANOL	Rabbit	Mild irritant
METHANOL	Rabbit	Mild irritant
2-BUTOXYETHANOL	Rabbit	Irritant

PHENOL	Rat	Corrosive
1,2-Ethanediamine, N1-[3-(trimethoxysilyl)propyl]-	Rabbit	Mild irritant
Methyl isobutyl ketone	Rabbit	Mild irritant
Formaldehyde	official classification	Corrosive

**Serious Eye Damage/Irritation**

Name	Species	Value
ETHANOL	Rabbit	Severe irritant
PHENOL-FORMALDEHYDE RESIN	Human and animal	Moderate irritant
Iron Oxide (FE2O3)	Rabbit	No significant irritation
BUTANOL	Rabbit	Severe irritant
METHANOL	Rabbit	Moderate irritant
2-BUTOXYETHANOL	Rabbit	Severe irritant
PHENOL	Rabbit	Corrosive
1,2-Ethanediamine, N1-[3-(trimethoxysilyl)propyl]-	Rabbit	Corrosive
Methyl isobutyl ketone	Rabbit	Mild irritant
Formaldehyde	official classification	Corrosive

**Skin Sensitization**

Name	Species	Value
ETHANOL	Human	Not classified
PHENOL-FORMALDEHYDE RESIN	Human and animal	Sensitizing
Iron Oxide (FE2O3)	Human	Not classified
BUTANOL	Human	Not classified
METHANOL	Guinea pig	Not classified
2-BUTOXYETHANOL	Guinea pig	Not classified
PHENOL	Guinea pig	Not classified
1,2-Ethanediamine, N1-[3-(trimethoxysilyl)propyl]-	Multiple animal species	Sensitizing
Methyl isobutyl ketone	Guinea pig	Not classified
Formaldehyde	Guinea pig	Sensitizing

**Respiratory Sensitization**

Name	Species	Value
PHENOL-FORMALDEHYDE RESIN	Human	Not classified
Formaldehyde	Human	Some positive data exist, but the data are not sufficient for classification

**Germ Cell Mutagenicity**

Name	Route	Value
ETHANOL	In Vitro	Some positive data exist, but the data are not sufficient for classification
ETHANOL	In vivo	Some positive data exist, but the data are not sufficient for classification
Iron Oxide (FE2O3)	In Vitro	Not mutagenic
BUTANOL	In vivo	Not mutagenic

BUTANOL	In Vitro	Some positive data exist, but the data are not sufficient for classification
METHANOL	In Vitro	Some positive data exist, but the data are not sufficient for classification
METHANOL	In vivo	Some positive data exist, but the data are not sufficient for classification
2-BUTOXYETHANOL	In Vitro	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 isobutyl ketone	In Vitro	Not mutagenic
Formaldehyde	In Vitro	Some positive data exist, but the data are not sufficient for classification
Formaldehyde	In vivo	Mutagenic

**Carcinogenicity**

Name	Route	Species	Value
ETHANOL	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Iron Oxide (FE2O3)	Inhalation	Human	Some positive data exist, but the data are not sufficient for classification
METHANOL	Inhalation	Multiple animal species	Not carcinogenic
2-BUTOXYETHANOL	Inhalation	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 isobutyl ketone	Inhalation	Multiple animal species	Carcinogenic
Formaldehyde	Not Specified	Human and animal	Carcinogenic

**Reproductive Toxicity**

**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
ETHANOL	Inhalation	Not classified for development	Rat	NOAEL 38 mg/l	during gestation
ETHANOL	Ingestion	Not classified for development	Rat	NOAEL 5,200 mg/kg/day	prematuring & during gestation
BUTANOL	Ingestion	Not classified for female reproduction	Rat	NOAEL 5,000 mg/kg/day	prematuring & during gestation
BUTANOL	Inhalation	Not classified for male reproduction	Rat	NOAEL 18 mg/l	6 weeks
BUTANOL	Inhalation	Not classified for development	Rat	NOAEL 10.6 mg/l	during gestation
METHANOL	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,600 mg/kg/day	21 days
METHANOL	Ingestion	Toxic to development	Mouse	LOAEL 4,000 mg/kg/day	during organogenesis
METHANOL	Inhalation	Toxic to development	Mouse	NOAEL 1.3 mg/l	during organogenesis

2-BUTOXYETHANOL	Dermal	Not classified for development	Rat	NOAEL 1,760 mg/kg/day	s during gestation
2-BUTOXYETHANOL	Ingestion	Not classified for development	Rat	NOAEL 100 mg/kg/day	during organogenesis
2-BUTOXYETHANOL	Inhalation	Not classified for development	Multiple animal species	NOAEL 0.48 mg/l	during organogenesis
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 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
Formaldehyde	Ingestion	Not classified for male reproduction	Rat	NOAEL 100 mg/kg	not applicable
Formaldehyde	Inhalation	Not classified for development	Rat	NOAEL 10 ppm	during gestation

### Target Organ(s)

#### Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
ETHANOL	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	LOAEL 2.6 mg/l	30 minutes
ETHANOL	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	LOAEL 9.4 mg/l	not available
ETHANOL	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL not available	
ETHANOL	Ingestion	kidney and/or bladder	Not classified	Dog	NOAEL 3,000 mg/kg	
PHENOL-FORMALDEHYDE RESIN	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
BUTANOL	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
BUTANOL	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
BUTANOL	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
METHANOL	Inhalation	blindness	Causes damage to organs	Human	NOAEL Not available	occupational exposure
METHANOL	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	not available
METHANOL	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	6 hours
METHANOL	Ingestion	blindness	Causes damage to organs	Human	NOAEL Not available	poisoning and/or abuse

METHANOL	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
2-BUTOXYETHANOL	Dermal	endocrine system	Not classified	Rabbit	NOAEL 902 mg/kg	6 hours
2-BUTOXYETHANOL	Dermal	liver	Not classified	Rabbit	LOAEL 72 mg/kg	not available
2-BUTOXYETHANOL	Dermal	kidney and/or bladder	Not classified	Rabbit	LOAEL 451 mg/kg	6 hours
2-BUTOXYETHANOL	Dermal	blood	Not classified	Multiple animal species	NOAEL Not available	
2-BUTOXYETHANOL	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
2-BUTOXYETHANOL	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
2-BUTOXYETHANOL	Inhalation	blood	Not classified	Multiple animal species	NOAEL Not available	
2-BUTOXYETHANOL	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
2-BUTOXYETHANOL	Ingestion	blood	Not classified	Multiple animal species	NOAEL Not available	
2-BUTOXYETHANOL	Ingestion	kidney and/or bladder	Not classified	Human	NOAEL Not available	poisoning and/or abuse
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
1,2-Ethanediamine, N1-[3-(trimethoxysilyl)propyl]-	Inhalation	respiratory irritation	May cause respiratory irritation	similar health hazards	NOAEL Not available	
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	May cause respiratory irritation	Human	NOAEL 0.9 mg/l	7 minutes
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
Formaldehyde	Inhalation	respiratory system	Causes damage to organs	Rat	LOAEL 128 ppm	6 hours
Formaldehyde	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
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ETHANOL	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rabbit	LOAEL 124 mg/l	365 days
ETHANOL	Inhalation	hematopoietic system   immune system	Not classified	Rat	NOAEL 25 mg/l	14 days
ETHANOL	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 8,000 mg/kg/day	4 months
ETHANOL	Ingestion	kidney and/or bladder	Not classified	Dog	NOAEL 3,000 mg/kg/day	7 days
PHENOL-FORMALDEHYDE RESIN	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Iron Oxide (FE2O3)	Inhalation	pulmonary fibrosis   pneumoconiosis	Not classified	Human	NOAEL Not available	occupational exposure
BUTANOL	Inhalation	blood	Not classified	Rat	NOAEL 0.3 mg/l	3 months
BUTANOL	Inhalation	auditory system	Not classified	Human	NOAEL Not available	occupational exposure
BUTANOL	Inhalation	liver   kidney and/or bladder   respiratory system	Not classified	Guinea pig	NOAEL Not available	3 months
BUTANOL	Inhalation	nervous system	Not classified	Rat	NOAEL 9.09 mg/l	13 weeks
BUTANOL	Ingestion	blood	Not classified	Rat	NOAEL 500 mg/kg/day	13 weeks
METHANOL	Inhalation	liver	Not classified	Rat	NOAEL 6.55 mg/l	4 weeks
METHANOL	Inhalation	respiratory system	Not classified	Rat	NOAEL 13.1 mg/l	6 weeks
METHANOL	Ingestion	liver   nervous system	Not classified	Rat	NOAEL 2,500 mg/kg/day	90 days
2-BUTOXYETHANOL	Dermal	blood	Not classified	Multiple animal species	NOAEL Not available	not available
2-BUTOXYETHANOL	Dermal	endocrine system	Not classified	Rabbit	NOAEL 150 mg/kg/day	90 days
2-BUTOXYETHANOL	Inhalation	liver	Not classified	Rat	NOAEL 2.4 mg/l	14 weeks
2-BUTOXYETHANOL	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 0.15 mg/l	14 weeks
2-BUTOXYETHANOL	Inhalation	blood	Not classified	Rat	LOAEL 0.15 mg/l	6 months
2-BUTOXYETHANOL	Inhalation	endocrine system	Not classified	Dog	LOAEL 1.9 mg/l	8 days
2-BUTOXYETHANOL	Ingestion	blood	Not classified	Rat	LOAEL 69 mg/kg/day	13 weeks
2-BUTOXYETHANOL	Ingestion	kidney and/or bladder	Not classified	Multiple animal species	NOAEL Not available	not available
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	Causes damage to organs through	Rat	NOAEL 12	14 days

		bladder	prolonged or repeated exposure		mg/kg/day	
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 through 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 species	NOAEL 1,204 mg/kg/day	103 weeks
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 ketone	Inhalation	nervous system	Not classified	Multiple animal species	NOAEL 0.41 mg/l	13 weeks
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
Formaldehyde	Dermal	respiratory system	Not classified	Mouse	NOAEL 80 mg/kg/day	60 weeks
Formaldehyde	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 0.3 ppm	28 months
Formaldehyde	Inhalation	liver	Not classified	Rat	NOAEL 20 ppm	13 weeks
Formaldehyde	Inhalation	hematopoietic system	Not classified	Mouse	NOAEL 15 ppm	3 weeks
Formaldehyde	Inhalation	nervous system	Not classified	Mouse	NOAEL 10 ppm	13 weeks
Formaldehyde	Inhalation	endocrine system   immune system   muscles   kidney and/or bladder	Not classified	Rat	NOAEL 15 ppm	28 months
Formaldehyde	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 15 ppm	2 years
Formaldehyde	Inhalation	eyes   vascular system	Not classified	Rat	NOAEL 14.3 ppm	2 years
Formaldehyde	Inhalation	heart	Not classified	Mouse	NOAEL 14.3 ppm	2 years
Formaldehyde	Ingestion	liver	Not classified	Rat	NOAEL 300 mg/kg/day	2 years
Formaldehyde	Ingestion	immune system	Not classified	Rat	NOAEL 20 mg/kg/day	4 weeks



Formaldehyde	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 15 mg/kg/day	24 months
Formaldehyde	Ingestion	nervous system	Not classified	Rat	NOAEL 109 mg/kg/day	2 years
Formaldehyde	Ingestion	heart   endocrine system   hematopoietic system   respiratory system   vascular system	Not classified	Rat	NOAEL 300 mg/kg/day	2 years
Formaldehyde	Ingestion	skin   muscles   eyes	Not classified	Rat	NOAEL 109 mg/kg/day	2 years

**Aspiration Hazard**

Name	Value
BUTANOL	Some positive data exist, but the data are not sufficient for classification
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****Ecotoxicological information**

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

**Chemical fate information**

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

**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. As a disposal alternative, utilize an acceptable permitted waste disposal 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.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable)

**SECTION 14: Transport Information**

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

**SECTION 15: Regulatory information****15.1. US Federal Regulations**

Contact 3M for more information.

**EPCRA 311/312 Hazard Classifications:**

**Physical Hazards**

Flammable (gases, aerosols, liquids, or solids)

**Health Hazards**

Acute toxicity

Carcinogenicity

Reproductive toxicity

Respiratory or Skin Sensitization

Serious eye damage or eye irritation

Skin Corrosion or Irritation

Specific target organ toxicity (single or repeated exposure)

**Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):**

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
BUTANOL	71-36-3	Trade Secret 3 - 7
2-BUTOXYETHANOL (GLYCOL ETHERS)	111-76-2	3 - 7
METHANOL	67-56-1	Trade Secret 3 - 7
PHENOL	108-95-2	Trade Secret 1 - 5
Formaldehyde	50-00-0	Trade Secret 0.1 - 1

**15.2. State Regulations**

Contact 3M for more information.

**California Proposition 65**

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>Listing</u>
Cadmium	None	Male reproductive toxin
Cadmium	None	Carcinogen
Cadmium	None	Developmental Toxin
Lead	None	Female reproductive toxin
Lead	None	Male reproductive toxin
Lead	None	Carcinogen
Lead	None	Developmental Toxin
Mercury	None	Developmental Toxin

**15.3. Chemical Inventories**

The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information.

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.

Contact 3M for more information.

**15.4. International Regulations**

Contact 3M for more information.

**This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.**

**SECTION 16: Other information**

**NFPA Hazard Classification****Health: 3 Flammability: 3 Instability: 0 Special Hazards: None**

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

**HMIS Hazard Classification****Health: \*3 Flammability: 3 Physical Hazard: 0 Personal Protection: X - See PPE section.**

Hazardous Material Identification System (HMIS® IV) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® IV ratings are to be used with a fully implemented HMIS® IV program. HMIS® is a registered mark of the American Coatings Association (ACA).

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