Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier
3M™ Scotchkote™ Fusion Bonded Epoxy Rebar Coating 413, 413S and 413 Spray Grade

Product Identification Numbers

ID Number	UPC	ID Number	UPC
80-6116-1455-5		80-6116-1551-1	
80-6116-2838-1		80-6300-0092-7	
80-6300-0093-5		80-6300-0103-2	
80-6300-0154-5		80-6300-0155-2	
80-6300-0171-9			

7010350488, 7100040457, 7010401049, 7010319949, 7100178131

1.2. Recommended use and restrictions on use

Recommended use
Coating, Fusion Bonded Epoxy Coating for Rebar

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Electrical Markets Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	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
Combustible Dust.
Serious Eye Damage/Irritation: Category 2A.
Skin Sensitizer: Category 1.
Reproductive Toxicity: Category 2.
Carcinogenicity: Category 2.

2.2. Label elements
Signal word

Warning

Symbols
Exclamation mark | Health Hazard |

Pictograms

Hazard Statements
May form combustible dust concentrations in air.

Causes serious eye irritation.
May cause an allergic skin reaction.
Suspected of damaging fertility or the unborn child.
Suspected of causing cancer.

Precautionary Statements

Prevention:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Wear protective gloves and eye/face protection.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.

Response:
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
IF exposed or concerned: Get medical advice/attention.

Storage:
Store locked up.

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

4% of the mixture consists of ingredients of unknown acute oral toxicity.
4% of the mixture consists of ingredients of unknown acute dermal toxicity.
100% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	25068-38-6	60 - 80 Trade Secret *
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	25068-38-6	10 - 25 Trade Secret *

(MW>700, <=1200)		
Epoxy Resin - Amine Condensate	68002-42-6	0.5 - 5 Trade Secret *
Titanium Dioxide	13463-67-7	1 - 5 Trade Secret *
Proprietary Polymer/Solids	Trade Secret*	1 - 5 Trade Secret *
4,4'-Isopropylidenediphenol	80-05-7	< 3 Trade Secret *
2-Propenoic Acid, Ethyl Ester, Polymer With Isooctyl 2-Propenoate	68540-68-1	0.1 - 1.5 Trade Secret *
Chromium Oxide (Cr2O3)	1308-38-9	0.5 - 1.5 Trade Secret *
Synthetic Amorphous Silica, Fumed, Crystalline Free	112945-52-5	0.5 - 1.5 Trade Secret *
2-Methylimidazole	693-98-1	< 1 Trade Secret *
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW unknown or <=700)	25068-38-6	0.1 - 1 Trade Secret *
PHENOL-FORMALDEHYDE POLYMER	9003-35-4	< 0.5 Trade Secret *
ETHYL ACRYLATE	140-88-5	< 0.02 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 wash with soap and water. Remove contaminated clothing and wash before reuse. 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

Allergic skin reaction (redness, swelling, blistering, and itching).

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 ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture
Powdered material may form explosive dust-air mixture. Avoid fire fighting methods that would cause powders to become airborne.

Hazardous Decomposition or By-Products

Substance	Condition
Aldehydes	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion

Hydrogen Chloride	During Combustion
Oxides of Nitrogen	During Combustion
Oxides of Phosphorus	During Combustion

5.3. Special protective actions for fire-fighters
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. Eliminate all ignition sources if safe to do so. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Vacuum to avoid dusting. WARNING! A motor could be an ignition source and cause combustible dust in the spill area to burn or explode. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. 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
Do not handle until all safety precautions have been read and understood. Avoid breathing 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. Use personal protective equipment (gloves, respirators, etc.) as required. Dust clouds of this material in sufficient concentration in combination with an ignition source may be explosive. Dust deposits should not be allowed to accumulate on surfaces because of the potential for secondary explosions. Routine housekeeping should be instituted to ensure that combustible dusts do not accumulate on surfaces. Solids can generate static electricity charges when transferred and in mixing operations sufficient to be an ignition source. Evaluate the need for precautions, such as grounding and bonding, low energy transfer of material (e.g. low speed, short distance), or inert atmospheres.

7.2. Conditions for safe storage including any incompatibilities
Store away from heat.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
SILICA, AMORPHOUS	112945-52-5	OSHA	TWA:20 millions of particles/cu. ft.;TWA concentration:0.8 mg/m3	
CHROMIUM (III) COMPOUNDS	1308-38-9	ACGIH	TWA(as Cr(III), inhalable fraction):0.003	A4: Not class. as human carcin

			mg/m3;TWA(as Cr):0.5 mg/m3	
CHROMIUM (III) COMPOUNDS	1308-38-9	OSHA	TWA(as Cr):0.5 mg/m3	
Chromium, insoluble salts	1308-38-9	OSHA	TWA(as Cr):1 mg/m3	
Titanium Dioxide	13463-67-7	ACGIH	TWA:10 mg/m3	A4: Not class. as human carcin
Titanium Dioxide	13463-67-7	OSHA	TWA(as total dust):15 mg/m3	
ETHYL ACRYLATE	140-88-5	ACGIH	TWA:5 ppm;STEL:15 ppm	A4: Not class. as human carcin
ETHYL ACRYLATE	140-88-5	OSHA	TWA:100 mg/m3(25 ppm)	SKIN

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 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. Provide local exhaust at process emission sources to control exposure near the source and to prevent the escape of dust into the work area. It is recommended that all dust control equipment (such as local exhaust ventilation), process equipment, and material transport systems involved in handling of this product be evaluated for the need for explosion-protection safeguards. Recognized safeguards include explosion relief vents, explosion suppression systems, and oxygen deficient process environments. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Evaluate the need for electrically classified 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 organic vapors and particulates

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	
Physical state	Solid
Color	Green
Specific Physical Form:	Powder
Odor	Epoxy
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point	*Not Applicable*
Boiling Point	*Not Applicable*
Flash Point	No flash point
Evaporation rate	*Not Applicable*
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*
Vapor Pressure	*Not Applicable*
Vapor Density	*Not Applicable*
Density	1.2 g/cm3
Specific Gravity	1.2 [*Test Method:*Tested per ASTM protocol] [*Ref Std:*WATER=1]
Solubility in Water	Nil
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*No Data Available*
Viscosity	*Not Applicable*
Volatile Organic Compounds	0 %
Percent volatile	0 %
VOC Less H2O & Exempt Solvents	0 %
***Dust deflagration index (Kst)**	70 - 250 bar.m/s [*Details:*Typical Range]
Flash Point as text	No flash point
***Min. explosible conc.(MEC)**	35 - 55 g/m3 [*Details:*Typical Range]
***Min. ignition energy (MIE)**	3 - 100 mJ [*Details:*Typical Range]
***Min. ign temp(MIT)-dust cloud**	450 - 550 ºC [*Details:*Typical Range]

* The values noted with an asterisk (*) in the above table are representative values based on testing of raw materials and selected products. Additionally, a material's characteristics may change depending upon the process and conditions of use at a facility, including further changes in particle size, or mixture with other materials. In order to obtain specific data for the material, we recommend the user conduct characterization testing based on the use factors at the specific facility.

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
Heat

10.5. Incompatible materials
None known.

10.6. Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

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

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

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

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

May cause additional health effects (see below).

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

Photosensitization: Signs/symptoms may include a sunburn-like reaction such as blistering, redness, swelling, and itching from minor exposure to sunlight.

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

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

May cause additional health effects (see below).

Additional Health Effects:

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
2-Methylimidazole	693-98-1	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
ETHYL ACRYLATE	140-88-5	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Titanium Dioxide	13463-67-7	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

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 ATE >12.5 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Dermal	Rat	LD50 > 1,600 mg/kg
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Ingestion	Rat	LD50 > 1,000 mg/kg
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer (MW>700, <=1200)	Dermal	Rat	LD50 > 1,600 mg/kg
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer (MW>700, <=1200)	Ingestion	Rat	LD50 > 1,000 mg/kg
4,4'-Isopropylidenediphenol	Dermal	Rabbit	LD50 > 2,000 mg/kg
4,4'-Isopropylidenediphenol	Ingestion	Rat	LD50 3,200 mg/kg
Epoxy Resin - Amine Condensate	Dermal	Rat	LD50 > 2,000 mg/kg
Epoxy Resin - Amine Condensate	Ingestion	Rat	LD50 > 2,000 mg/kg
Titanium Dioxide	Dermal	Rabbit	LD50 > 10,000 mg/kg
Titanium Dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l
Titanium Dioxide	Ingestion	Rat	LD50 > 10,000 mg/kg
2-Propenoic Acid, Ethyl Ester, Polymer With Isooctyl 2-Propenoate	Dermal		LD50 estimated to be > 5,000 mg/kg
2-Propenoic Acid, Ethyl Ester, Polymer With Isooctyl 2-Propenoate	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Chromium Oxide (Cr2O3)	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
Chromium Oxide (Cr2O3)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.41 mg/l
Chromium Oxide (Cr2O3)	Ingestion	Rat	LD50 > 5,000 mg/kg
Synthetic Amorphous Silica, Fumed, Crystalline Free	Dermal	Rabbit	LD50 > 5,000 mg/kg
Synthetic Amorphous Silica, Fumed, Crystalline Free	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Synthetic Amorphous Silica, Fumed, Crystalline Free	Ingestion	Rat	LD50 > 5,110 mg/kg
2-Methylimidazole	Dermal	Rabbit	LD50 > 2,000 mg/kg
2-Methylimidazole	Ingestion	Rat	LD50 1,500 mg/kg
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW unknown or <=700)	Dermal	Rat	LD50 > 1,600 mg/kg
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW unknown or <=700)	Ingestion	Rat	LD50 > 1,000 mg/kg

PHENOL-FORMALDEHYDE POLYMER	Dermal	Rat	LD50 > 2,000 mg/kg
PHENOL-FORMALDEHYDE POLYMER	Ingestion	Rat	LD50 > 2,900 mg/kg
ETHYL ACRYLATE	Dermal	Rabbit	LD50 1,790 mg/kg
ETHYL ACRYLATE	Inhalation-Vapor (4 hours)	Rat	LC50 9 mg/l
ETHYL ACRYLATE	Ingestion	Rat	LD50 1,020 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Rabbit	No significant irritation
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer (MW>700, <=1200)	Rabbit	Mild irritant
4,4'-Isopropylidenediphenol	Rabbit	No significant irritation
Epoxy Resin - Amine Condensate	Rabbit	No significant irritation
Titanium Dioxide	Rabbit	No significant irritation
Chromium Oxide (Cr2O3)	Rabbit	No significant irritation
Synthetic Amorphous Silica, Fumed, Crystalline Free	Rabbit	No significant irritation
2-Methylimidazole	In vitro data	Corrosive
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW unknown or <=700)	Rabbit	Mild irritant
PHENOL-FORMALDEHYDE POLYMER	Human and animal	Mild irritant
ETHYL ACRYLATE	Rabbit	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Rabbit	Mild irritant
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer (MW>700, <=1200)	Rabbit	Moderate irritant
4,4'-Isopropylidenediphenol	Rabbit	Corrosive
Epoxy Resin - Amine Condensate	Rabbit	No significant irritation
Titanium Dioxide	Rabbit	No significant irritation
Chromium Oxide (Cr2O3)	Rabbit	No significant irritation
Synthetic Amorphous Silica, Fumed, Crystalline Free	Rabbit	No significant irritation
2-Methylimidazole	Rabbit	Corrosive
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW unknown or <=700)	Rabbit	Moderate irritant
PHENOL-FORMALDEHYDE POLYMER	Human and animal	Moderate irritant
ETHYL ACRYLATE	Rabbit	Corrosive

Skin Sensitization

Name	Species	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Guinea pig	Not classified
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer (MW>700, <=1200)	Human and animal	Sensitizing
4,4'-Isopropylidenediphenol	official classification	Sensitizing
Epoxy Resin - Amine Condensate	Guinea pig	Sensitizing
Titanium Dioxide	Human and animal	Not classified
Chromium Oxide (Cr2O3)	similar compounds	Not classified
Synthetic Amorphous Silica, Fumed, Crystalline Free	Human and	Not classified

	animal	
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW unknown or <=700)	Human and animal	Sensitizing
PHENOL-FORMALDEHYDE POLYMER	Human and animal	Sensitizing
ETHYL ACRYLATE	Human and animal	Sensitizing

Photosensitization

Name	Species	Value
4,4'-Isopropylidenediphenol	Human and animal	Sensitizing

Respiratory Sensitization

Name	Species	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Human	Not classified
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer (MW>700, <=1200)	Human	Not classified
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW unknown or <=700)	Human	Not classified
PHENOL-FORMALDEHYDE POLYMER	Human	Not classified

Germ Cell Mutagenicity

Name	Route	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	In vivo	Not mutagenic
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	In Vitro	Some positive data exist, but the data are not sufficient for classification
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer (MW>700, <=1200)	In vivo	Not mutagenic
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer (MW>700, <=1200)	In Vitro	Some positive data exist, but the data are not sufficient for classification
4,4'-Isopropylidenediphenol	In vivo	Not mutagenic
4,4'-Isopropylidenediphenol	In Vitro	Some positive data exist, but the data are not sufficient for classification
Epoxy Resin - Amine Condensate	In Vitro	Not mutagenic
Titanium Dioxide	In Vitro	Not mutagenic
Titanium Dioxide	In vivo	Not mutagenic
Chromium Oxide (Cr2O3)	In vivo	Not mutagenic
Chromium Oxide (Cr2O3)	In Vitro	Some positive data exist, but the data are not sufficient for classification
Synthetic Amorphous Silica, Fumed, Crystalline Free	In Vitro	Not mutagenic
2-Methylimidazole	In Vitro	Not mutagenic
2-Methylimidazole	In vivo	Some positive data exist, but the data are not sufficient for classification
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW unknown or <=700)	In vivo	Not mutagenic
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW unknown or <=700)	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer (MW>700, <=1200)	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
4,4'-Isopropylidenediphenol	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Titanium Dioxide	Ingestion	Multiple animal	Not carcinogenic

		species	
Titanium Dioxide	Inhalation	Rat	Carcinogenic
Chromium Oxide (Cr2O3)	Ingestion	Rat	Not carcinogenic
Synthetic Amorphous Silica, Fumed, Crystalline Free	Not Specified	Mouse	Some positive data exist, but the data are not sufficient for classification
2-Methylimidazole	Ingestion	Multiple animal species	Carcinogenic
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW unknown or <=700)	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
ETHYL ACRYLATE	Ingestion	Multiple animal species	Carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer (MW>700, <=1200)	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer (MW>700, <=1200)	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer (MW>700, <=1200)	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer (MW>700, <=1200)	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-Isopropylidenediphenol	Ingestion	Not classified for female reproduction	Multiple animal species	NOAEL 50 mg/kg/day	
4,4'-Isopropylidenediphenol	Ingestion	Not classified for male reproduction	Multiple animal species	NOAEL 50 mg/kg/day	
4,4'-Isopropylidenediphenol	Ingestion	Toxic to development	Multiple animal species	NOAEL 50 mg/kg/day	
Chromium Oxide (Cr2O3)	Ingestion	Not classified for female reproduction	Rat	NOAEL 2,000 mg/kg/day	90 days
Chromium Oxide (Cr2O3)	Ingestion	Not classified for male reproduction	Rat	NOAEL 2,000 mg/kg/day	90 days
Chromium Oxide (Cr2O3)	Ingestion	Not classified for development	Rat	NOAEL 2,000 mg/kg/day	90 days
Synthetic Amorphous Silica, Fumed, Crystalline Free	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Synthetic Amorphous Silica, Fumed, Crystalline Free	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Synthetic Amorphous Silica, Fumed, Crystalline Free	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
2-Methylimidazole	Ingestion	Not classified for female reproduction	Multiple animal species	NOAEL 1,860 mg/kg/day	14 weeks
2-Methylimidazole	Ingestion	Toxic to male reproduction	Rat	NOAEL 300	14 weeks

				mg/kg/day	
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW unknown or <=700)	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW unknown or <=700)	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW unknown or <=700)	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW unknown or <=700)	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
4,4'-Isopropylidenediphenol	Inhalation	respiratory irritation	May cause respiratory irritation	Multiple animal species	LOAEL 0.152 mg/l	15 minutes
Chromium Oxide (Cr2O3)	Inhalation	respiratory system	Not classified	Rat	NOAEL 40 mg	
PHENOL-FORMALDEHYDE POLYMER	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
ETHYL ACRYLATE	Inhalation	respiratory irritation	May cause respiratory irritation	Multiple animal species	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW>1200)	Ingestion	auditory system | heart | endocrine system | hematopoietic system | liver | eyes | kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer (MW>700, <=1200)	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer (MW>700, <=1200)	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer (MW>700, <=1200)	Ingestion	auditory system | heart | endocrine system | hematopoietic system | liver | eyes | kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
4,4'-Isopropylidenediphenol	Inhalation	liver | kidney and/or bladder |	Not classified	Rat	NOAEL 0.15 mg/l	13 weeks

		hematopoietic system				
4,4'-Isopropylidenediphenol	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 50 mg/kg/day	3 generation
4,4'-Isopropylidenediphenol	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 370 mg/kg/day	13 weeks
4,4'-Isopropylidenediphenol	Ingestion	endocrine system | hematopoietic system	Not classified	Rat	NOAEL 500 mg/kg/day	3 generation
4,4'-Isopropylidenediphenol	Ingestion	nervous system	Not classified	Rat	NOAEL 185 mg/kg/day	90 days
4,4'-Isopropylidenediphenol	Ingestion	heart | bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 2,400 mg/kg/day	13 weeks
Titanium Dioxide	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.01 mg/l	2 years
Titanium Dioxide	Inhalation	pulmonary fibrosis	Not classified	Human	NOAEL Not available	occupational exposure
Chromium Oxide (Cr2O3)	Inhalation	immune system | respiratory system | hematopoietic system | liver | kidney and/or bladder	Not classified	Rat	NOAEL 44 mg/m3	90 days
Synthetic Amorphous Silica, Fumed, Crystalline Free	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
2-Methylimidazole	Ingestion	endocrine system | hematopoietic system	May cause damage to organs though prolonged or repeated exposure	Multiple animal species	LOAEL 40 mg/kg/day	14 weeks
2-Methylimidazole	Ingestion	liver	Not classified	Multiple animal species	NOAEL 1,860 mg/kg/day	14 weeks
2-Methylimidazole	Ingestion	bone marrow	Not classified	Mouse	LOAEL 315 mg/kg/day	2 years
2-Methylimidazole	Ingestion	heart	Not classified	Mouse	NOAEL 1,740 mg/kg/day	14 weeks
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW unknown or <=700)	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW unknown or <=700)	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
4,4'-isopropylidenediphenol-epichlorohydrin polymer (MW unknown or <=700)	Ingestion	auditory system | heart | endocrine system | hematopoietic system | liver | eyes | kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
PHENOL-FORMALDEHYDE POLYMER	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure

Aspiration Hazard
For the component/components, either no data are currently available or 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.

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. 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): Not regulated

SECTION 14: Transport Information

Not regulated per U.S. DOT, IATA or IMO.

These transportation classifications are provided as a customer service. As the shipper YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M transportation classifications are based on product formulation, packaging, 3M policies and 3M 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 original 3M package is certified for U.S. ground shipment only. If you are shipping by air or ocean, the package may not meet applicable regulatory requirements.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

EPCRA 311/312 Hazard Classifications:

Physical Hazards
Combustible Dust

Health Hazards
Carcinogenicity
Reproductive toxicity
Respiratory or Skin Sensitization
Serious eye damage or eye irritation

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

Ingredient	C.A.S. No	% by Wt
4,4'-Isopropylidenediphenol	80-05-7	Trade Secret < 3

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

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

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: 2 **Flammability:** 1 **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: *2 **Flammability:** 1 **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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