Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the Canadian Hazardous Products Regulations.

SECTION 1: Identification

1.1. Product identifier
ARMORCAST STRUCTURAL MATERIAL FOR 4560, 4561, AND FSC KITS

1.2. Recommended use and restrictions on use

Intended Use
Telecommunication Industry

Specific Use
Protect telephone cable splices.

Restrictions on use
Not applicable

1.3. Supplier's details

Company:	3M Canada Company
Division:	Communication Markets Division
Address:	1840 Oxford Street East, Post Office Box 5757, London, Ontario N6A 4T1
Telephone:	(800) 364-3577
Website:	www.3M.ca

1.4. Emergency telephone number
Medical Emergency Telephone:1-800-3M HELPS / 1-800-364-3577; Transportation Emergency Telephone (CANUTEC): (613) 996-6666

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Serious Eye Damage/Irritation: Category 2A.
Skin Corrosion/Irritation: Category 2.
Respiratory Sensitizer: Category 1.
Skin Sensitizer: 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
Exclamation mark | Health Hazard |

Pictograms

Hazard statements

Causes serious eye irritation. Causes skin irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. May cause respiratory irritation.

Causes damage to organs through prolonged or repeated exposure: respiratory system |

Precautionary statements

Prevention:
Do not breathe dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. In case of inadequate ventilation wear respiratory protection. Wear protective gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash exposed skin 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 experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician. 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. Take off contaminated clothing and wash it before reuse. Call a POISON centre or doctor/physician if you feel unwell.

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

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

2.3. Other hazards
None known.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt	Common Name
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	101-68-8	30 - 60 Trade Secret *	Benzene, 1,1'-methylenebis[4-isocyanato-
POLY[OXY(METHYL-1,2-ETHANEDIYL)], .ALPHA.-HYDRO-.OMEGA.-	25322-69-4	35 - 40	Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-

HYDROXY-			
MDI HOMOPOLYMER	39310-05-9	10 - 30 Trade Secret *	Benzene, 1,1'-methylenebis[isocyanato-, homopolymer
DIPHENYLMETHANE-2,4'-DIISOCYANATE	5873-54-1	1 - 7 Trade Secret *	Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]-
Iron Oxide (FE3O4)	1317-61-9	3 - 7	Iron oxide (Fe3O4)
BENZENEPROPANOIC ACID, 3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXY-, 2,2-BIS[[3-[3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXYPHENYL]-1-OXOPROPOXY]METHYL]-1,3-PROPANEDIYL ESTER	6683-19-8	0 - 2	Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-, 2,2-bis[[3-[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropoxy]methyl]-1,3-propanediyl ester
DIMORPHOLINODIETHYL ETHER	6425-39-4	0 - 2	Morpholine, 4,4'-(oxydi-2,1-ethanediyl)bis-
PROPYL P-HYDROXYBENZOATE	94-13-3	0 - 2	Benzoic acid, 4-hydroxy-, propyl ester
TRIETHYL PHOSPHATE	78-40-0	0 - 2	Phosphoric acid, triethyl ester
COPPER	7440-50-8	< 0.01	Copper

*The actual concentration of this ingredient 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
See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
DO NOT USE WATER In case of fire: Use a carbon dioxide or dry chemical extinguisher to extinguish.

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

5.3. Special protective actions for fire-fighters
Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapours, 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
Pour isocyanate decontaminant solution (90% water, 8% concentrated ammonia, 2% detergent) on spill and allow to react for 10 minutes. Or pour water on spill and allow to react for more than 30 minutes. Cover with absorbent material. Collect as much of the spilled material as possible. Place in a container approved for transportation by appropriate authorities, but do not seal the container for 48 hours to avoid pressure build-up. 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. 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. Not for consumer sale or 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. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Keep container tightly closed. Store away from strong bases.

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
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	101-68-8	ACGIH	TWA:0.005 ppm	
POLY[OXY(METHYL-1,2-ETHANEDIYL)], .ALPHA.-HYDRO-.OMEGA.-HYDROXY-	25322-69-4	AIHA	TWA(as aerosol):10 mg/m3	
COPPER, DUSTS AND MISTS, AS CU	7440-50-8	ACGIH	TWA(as Cu dust or mist):1 mg/m3	
COPPER, FUME AS CU	7440-50-8	ACGIH	TWA(as Cu, fume):0.2 mg/m3	
TRIETHYL PHOSPHATE	78-40-0	AIHA	TWA:7.45 mg/m3(1 ppm)	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/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

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 vapours 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

Physical state	Solid
Specific Physical Form:	Resin Sat. Glass Tape
Colour	Black
Odour	Slight Odour
Odour threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*No Data Available*
Boiling point	*Not Applicable*
Flash Point	174.4 ºC [*Test Method:*Closed Cup]
Evaporation rate	*Not Applicable*
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*

Vapour Pressure	*No Data Available*
Viscosity/Kinematic Viscosity Viscosity/Kinematic Viscosity	*No Data Available*
Density	*No Data Available*
Relative density	*No Data Available*
Water solubility	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/Kinematic Viscosity	*Not Applicable*
Volatile Organic Compounds	*No Data Available*
Percent volatile	
VOC Less H2O & Exempt Solvents	*No Data Available*
Average particle size	*No Data Available*
Bulk density	*No Data Available*
Molecular weight	*No Data Available*
Softening point	*No Data Available*

Nanoparticles
This material does not contain nanoparticles.

SECTION 10: Stability and reactivity

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

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
None known.

10.5. Incompatible materials
Strong bases

10.6. Hazardous decomposition products

Substance	Condition
Carbon monoxide	Not Specified
Carbon dioxide	Not Specified
Hydrogen Cyanide	Not Specified
Oxides of Nitrogen	Not Specified

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. Allergic Respiratory Reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest. May cause additional health effects (see below).

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

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.

Additional Health Effects:

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

Additional Information:
Persons previously sensitized to isocyanates may develop a cross-sensitization reaction to other isocyanates.
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	Ingestion		No data available; calculated ATE >5,000 mg/kg
POLY[OXY(METHYL-1,2-ETHANEDIYL)], .ALPHA.-HYDRO-.OMEGA.-HYDROXY-	Dermal	Rabbit	LD50 > 10,000 mg/kg
POLY[OXY(METHYL-1,2-ETHANEDIYL)], .ALPHA.-HYDRO-.OMEGA.-HYDROXY-	Ingestion	Rat	LD50 > 2,000 mg/kg
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	Dermal	Rabbit	LD50 > 5,000 mg/kg
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.368 mg/l
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	Ingestion	Rat	LD50 31,600 mg/kg
MDI HOMOPOLYMER	Dermal	Rabbit	LD50 > 5,000 mg/kg
MDI HOMOPOLYMER	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.368 mg/l
MDI HOMOPOLYMER	Ingestion	Rat	LD50 31,600 mg/kg
DIPHENYLMETHANE-2,4'-DIISOCYANATE	Dermal	Rabbit	LD50 > 5,000 mg/kg
DIPHENYLMETHANE-2,4'-DIISOCYANATE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.368 mg/l
DIPHENYLMETHANE-2,4'-DIISOCYANATE	Ingestion	Rat	LD50 31,600 mg/kg
Iron Oxide (FE3O4)	Dermal	Not	LD50 3,100 mg/kg

		available	
Iron Oxide (FE3O4)	Ingestion	Not available	LD50 3,700 mg/kg
DIMORPHOLINODIETHYL ETHER	Dermal	Rabbit	LD50 3,030 mg/kg
DIMORPHOLINODIETHYL ETHER	Ingestion	Rat	LD50 2,020 mg/kg
PROPYL P-HYDROXYBENZOATE	Dermal		LD50 estimated to be > 5,000 mg/kg
BENZENEPROPANOIC ACID, 3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXY-, 2,2-BIS[[3-[3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXYPHENYL]-1-OXOPROPOXY]METHYL]-1,3-PROPANEDIYL ESTER	Dermal	Rabbit	LD50 > 3,160 mg/kg
BENZENEPROPANOIC ACID, 3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXY-, 2,2-BIS[[3-[3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXYPHENYL]-1-OXOPROPOXY]METHYL]-1,3-PROPANEDIYL ESTER	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 1.95 mg/l
BENZENEPROPANOIC ACID, 3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXY-, 2,2-BIS[[3-[3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXYPHENYL]-1-OXOPROPOXY]METHYL]-1,3-PROPANEDIYL ESTER	Ingestion	Rat	LD50 > 10,250 mg/kg
PROPYL P-HYDROXYBENZOATE	Ingestion	Rat	LD50 > 8,000 mg/kg
TRIETHYL PHOSPHATE	Dermal	Guinea pig	LD50 > 21,400 mg/kg
TRIETHYL PHOSPHATE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 8.8 mg/l
TRIETHYL PHOSPHATE	Ingestion	Rat	LD50 1,131 mg/kg
COPPER	Dermal	Rat	LD50 > 2,000 mg/kg
COPPER	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.11 mg/l
COPPER	Ingestion	Rat	LD50 > 2,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
POLY[OXY(METHYL-1,2-ETHANEDIYL)], .ALPHA.-HYDRO-.OMEGA.-HYDROXY-	Rabbit	No significant irritation
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	official classification	Irritant
MDI HOMOPOLYMER	official classification	Irritant
DIPHENYLMETHANE-2,4'-DIISOCYANATE	official classification	Irritant
Iron Oxide (FE3O4)	Rabbit	No significant irritation
DIMORPHOLINODIETHYL ETHER	Rabbit	Mild irritant
BENZENEPROPANOIC ACID, 3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXY-, 2,2-BIS[[3-[3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXYPHENYL]-1-OXOPROPOXY]METHYL]-1,3-PROPANEDIYL ESTER	Rabbit	No significant irritation
TRIETHYL PHOSPHATE	Rabbit	No significant irritation
COPPER	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
POLY[OXY(METHYL-1,2-ETHANEDIYL)], .ALPHA.-HYDRO-.OMEGA.-HYDROXY-	Rabbit	No significant irritation
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	official classification	Severe irritant
MDI HOMOPOLYMER	official classifica	Severe irritant

	tion	
DIPHENYLMETHANE-2,4'-DIISOCYANATE	official classification	Severe irritant
Iron Oxide (FE3O4)	Rabbit	No significant irritation
DIMORPHOLINODIETHYL ETHER	Rabbit	Severe irritant
BENZENEPROPANOIC ACID, 3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXY-, 2,2-BIS[[3-[3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXYPHENYL]-1-OXOPROPOXY]METHYL]-1,3-PROPANEDIYL ESTER	Rabbit	Mild irritant
TRIETHYL PHOSPHATE	Rabbit	Severe irritant
COPPER	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	official classification	Sensitizing
MDI HOMOPOLYMER	official classification	Sensitizing
DIPHENYLMETHANE-2,4'-DIISOCYANATE	official classification	Sensitizing
Iron Oxide (FE3O4)	Human	Not classified
DIMORPHOLINODIETHYL ETHER	Guinea pig	Not classified
BENZENEPROPANOIC ACID, 3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXY-, 2,2-BIS[[3-[3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXYPHENYL]-1-OXOPROPOXY]METHYL]-1,3-PROPANEDIYL ESTER	Human and animal	Not classified
TRIETHYL PHOSPHATE	Mouse	Not classified

Respiratory Sensitization

Name	Species	Value
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	Human	Sensitizing
MDI HOMOPOLYMER	Human	Sensitizing
DIPHENYLMETHANE-2,4'-DIISOCYANATE	Human	Sensitizing

Germ Cell Mutagenicity

Name	Route	Value
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	In Vitro	Some positive data exist, but the data are not sufficient for classification
MDI HOMOPOLYMER	In Vitro	Some positive data exist, but the data are not sufficient for classification
DIPHENYLMETHANE-2,4'-DIISOCYANATE	In Vitro	Some positive data exist, but the data are not sufficient for classification
Iron Oxide (FE3O4)	In Vitro	Not mutagenic
DIMORPHOLINODIETHYL ETHER	In Vitro	Not mutagenic
DIMORPHOLINODIETHYL ETHER	In vivo	Not mutagenic
BENZENEPROPANOIC ACID, 3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXY-, 2,2-BIS[[3-[3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXYPHENYL]-1-OXOPROPOXY]METHYL]-1,3-PROPANEDIYL ESTER	In Vitro	Not mutagenic
BENZENEPROPANOIC ACID, 3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXY-, 2,2-BIS[[3-[3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXYPHENYL]-1-OXOPROPOXY]METHYL]-1,3-PROPANEDIYL ESTER	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification

MDI HOMOPOLYMER	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
DIPHENYLMETHANE-2,4'-DIISOCYANATE	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
Iron Oxide (FE3O4)	Inhalation	Human	Some positive data exist, but the data are not sufficient for classification
BENZENEPROPANOIC ACID, 3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXY-, 2,2-BIS[[3-[3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXYPHENYL]-1-OXOPROPOXY]METHYL]-1,3-PROPANEDIYL ESTER	Ingestion	Multiple animal species	Not carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
MDI HOMOPOLYMER	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
DIPHENYLMETHANE-2,4'-DIISOCYANATE	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
DIMORPHOLINODIETHYL ETHER	Ingestion	Not classified for female reproduction	Rat	NOAEL 300 mg/kg/day	premating into lactation
DIMORPHOLINODIETHYL ETHER	Ingestion	Not classified for male reproduction	Rat	NOAEL 300 mg/kg/day	28 days
DIMORPHOLINODIETHYL ETHER	Ingestion	Not classified for development	Rat	NOAEL 300 mg/kg/day	premating into lactation
BENZENEPROPANOIC ACID, 3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXY-, 2,2-BIS[[3-[3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXYPHENYL]-1-OXOPROPOXY]METHYL]-1,3-PROPANEDIYL ESTER	Ingestion	Not classified for female reproduction	Rat	NOAEL 688 mg/kg/day	2 generation
BENZENEPROPANOIC ACID, 3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXY-, 2,2-BIS[[3-[3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXYPHENYL]-1-OXOPROPOXY]METHYL]-1,3-PROPANEDIYL ESTER	Ingestion	Not classified for male reproduction	Rat	NOAEL 688 mg/kg/day	2 generation
BENZENEPROPANOIC ACID, 3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXY-, 2,2-BIS[[3-[3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXYPHENYL]-1-OXOPROPOXY]METHYL]-1,3-PROPANEDIYL ESTER	Ingestion	Not classified for development	Multiple animal species	NOAEL 1,000 mg/kg/day	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
MDI HOMOPOLYMER	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
DIPHENYLMETHANE-2,4'-DIISOCYANATE	Inhalation	respiratory irritation	May cause respiratory irritation	official classifica	NOAEL Not available	

				tion		
DIMORPHOLINODIETHYL ETHER	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
TRIETHYL PHOSPHATE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
P,P'-METHYLENEBIS(PHENYL ISOCYANATE)	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks
MDI HOMOPOLYMER	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks
DIPHENYLMETHANE-2,4'-DIISOCYANATE	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks
Iron Oxide (FE3O4)	Inhalation	pulmonary fibrosis | pneumoconiosis	Not classified	Human	NOAEL Not available	occupational exposure
DIMORPHOLINODIETHYL ETHER	Ingestion	heart | endocrine system | hematopoietic system | liver | immune system | nervous system | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 300 mg/kg/day	28 days
BENZENEPROPANOIC ACID, 3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXY-, 2,2-BIS[[3-[3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXYPHENYL]-1-OXOPROPOXY]METHYL]-1,3-PROPANEDIYL ESTER	Ingestion	endocrine system	Not classified	Rat	NOAEL 450 mg/kg/day	2 years
BENZENEPROPANOIC ACID, 3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXY-, 2,2-BIS[[3-[3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXYPHENYL]-1-OXOPROPOXY]METHYL]-1,3-PROPANEDIYL ESTER	Ingestion	liver	Not classified	Dog	NOAEL 302 mg/kg/day	90 days
BENZENEPROPANOIC ACID, 3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXY-, 2,2-BIS[[3-[3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXYPHENYL]-1-OXOPROPOXY]METHYL]-1,3-PROPANEDIYL ESTER	Ingestion	hematopoietic system | nervous system | kidney and/or bladder	Not classified	Rat	NOAEL 2,500 mg/kg/day	90 days
BENZENEPROPANOIC ACID, 3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXY-, 2,2-BIS[[3-[3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXYPHENYL]-1-OXOPROPOXY]METHYL]-1,3-PROPANEDIYL	Ingestion	auditory system | eyes	Not classified	Dog	NOAEL 302 mg/kg/day	90 days

ESTER						

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

No data available.

SECTION 13: Disposal considerations

13.1. Disposal methods

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

Dispose of waste product in a permitted industrial waste 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

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

Global inventory status

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

SECTION 16: Other information

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.
Health: 2 **Flammability:** 1 **Instability:** 1 **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.

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3M Canada SDSs are available at www.3M.ca