



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

3M™ Screen Printing Ink 1903 White

Product Identification Numbers

75-3469-4417-8 75-3469-8527-0

1.2. Recommended use and restrictions on use

Intended Use

Ink

Restrictions on use

Not applicable

1.3. Supplier's details

Company:	3M Canada Company
Division:	Commercial Solutions 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

Flammable Liquid: Category 3.

Serious Eye Damage/Irritation: Category 1.

Skin Corrosion/Irritation: Category 2.

Skin Sensitizer: Category 1A.

Reproductive Toxicity: Category 2.

Carcinogenicity: Category 2.

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

2.2. Label elements

Signal word

Danger

Symbols

Flame | Corrosion | Exclamation mark | Health Hazard |

Pictograms



Hazard statements

Flammable liquid and vapour.

Causes serious eye damage. Causes skin irritation. May cause an allergic skin reaction. May cause drowsiness or dizziness.

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. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond container and receiving equipment. Use non-sparking tools. Take action to prevent static discharges. Keep container tightly closed. Use explosion-proof electrical/ventilating/lighting equipment. Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Wear protective gloves and eye/face protection. 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 ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or 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 CENTRE or doctor/physician. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. IF exposed or concerned: Get medical advice/attention. 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 cool. Store locked up.

Disposal:

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

2.3. Other hazards

None known.

14% of the mixture consists of ingredients of unknown acute oral toxicity.

14% of the mixture consists of ingredients of unknown acute dermal toxicity.

14% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt	Common Name
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Titanium Dioxide	13463-67-7	20 - 65	Titanium oxide (TiO ₂)
CYCLOHEXANONE	108-94-1	20 - 30 Trade Secret *	Cyclohexanone
ETHYL 3-ETHOXYPROPIONATE	763-69-9	10 - 20	Propanoic acid, 3-ethoxy-, ethyl ester
VINYL ACETATE-VINYL ALCOHOL-VINYL CHLORIDE POLYMER	25086-48-0	5 - 15	Acetic acid ethenyl ester, polymer with chloroethene and ethenol
2-BUTOXYETHYL ACETATE	112-07-2	5 - 10	Ethanol, 2-butoxy-, acetate
Acrylic polymer	Trade Secret	5 - 10	Not Applicable
POLYMERIC PLASTICIZER	Trade Secret	3 - 7	Not Applicable
EPOXIDIZED SOYBEAN OIL	8013-07-8	1 - 5	Soybean oil, epoxidized
Aluminum (Calculated as AL ₂ O ₃)	None	< 1.5	Not Applicable
Aluminum Oxide	1344-28-1	< 1.5	Aluminum oxide (Al ₂ O ₃)
AMORPH. SILICA (CALCULATED AS SiO ₂)	None	< 1.5	Not Applicable
Silica	7631-86-9	< 1.5	Silica
Bis(1,2,2,6,6-pentamethyl-4-piperidiny)l sebacate	41556-26-7	0.1 - 1 Trade Secret *	Decanedioic acid, bis(1,2,2,6,6-pentamethyl-4-piperidiny)l ester
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	64742-94-5	0.1 - 1 Trade Secret *	Solvent naphtha, petroleum, heavy arom.aromatic streams. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C ₉ through C ₁₆ and boiling in the range of approximately 165.degree.C to 290.degree.C (330.degr
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	104810-48-2	0.1 - 1 Trade Secret *	Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydr o xy-
Polymeric Benzotriazole	104810-47-1	0.1 - 1 Trade Secret *	Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropoxy]-
Naphthalene	91-20-3	< 0.1	Naphthalene
ZINC 2-ETHYLHEXANOATE	136-53-8	0.08 - 0.1	Hexanoic acid, 2-ethyl-, zinc salt

Acrylic polymer is a non-hazardous Trade Secret material according to WHMIS criteria.

POLYMERIC PLASTICIZER is a non-hazardous Trade Secret material according to WHMIS criteria.

Aluminum (Calculated as AL₂O₃) is a non-hazardous Trade Secret material according to WHMIS criteria.

AMORPH. SILICA (CALCULATED AS SiO₂) is a non-hazardous Trade Secret material according to WHMIS criteria.

*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 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

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

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

Not applicable.

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

In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

5.2. Special hazards arising from the substance or mixture

Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products**Substance**

Carbon monoxide

Carbon dioxide

Hydrogen Chloride

Condition

During Combustion

During Combustion

During Combustion

5.3. Special protective actions for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapours, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapours in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up

Contain spill. Cover spill area with a fire extinguishing foam that is resistant to polar solvents. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal container approved for transportation by appropriate authorities. Clean up residue with detergent and water. Seal the container. Dispose of collected material as soon as possible in accordance with applicable

local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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. Avoid breathing 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. 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 container tightly closed. Keep cool. Protect from sunlight. Store away from heat. 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.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
CYCLOHEXANONE	108-94-1	ACGIH	TWA:20 ppm;STEL:50 ppm	Danger of cutaneous absorption
2-BUTOXYETHYL ACETATE	112-07-2	ACGIH	TWA:20 ppm	
Aluminum, insoluble compounds	1344-28-1	ACGIH	TWA(respirable fraction):1 mg/m3	
CAS NO SEQ117921	1344-28-1	ACGIH	TWA(inhalable particulates):10 mg/m3	
CAS NO SEQ117922	1344-28-1	ACGIH	TWA(respirable particles):3 mg/m3	
Titanium Dioxide	13463-67-7	ACGIH	TWA:10 mg/m3	
Jet fuels (non-aerosol), as total hydrocarbon vapour	64742-94-5	ACGIH	TWA(as total hydrocarbon vapor, non-aerosol):200 mg/m3	SKIN
Kerosine (petroleum)	64742-94-5	ACGIH	TWA(as total hydrocarbon vapor, non-aerosol):200 mg/m3	SKIN
CAS NO SEQ117921	7631-86-9	ACGIH	TWA(inhalable particulates):10 mg/m3	
CAS NO SEQ117922	7631-86-9	ACGIH	TWA(respirable particles):3 mg/m3	
Naphthalene	91-20-3	ACGIH	TWA:10 ppm	Danger of cutaneous absorption

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. Use explosion-proof ventilation equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

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

Full Face Shield

Indirect Vented Goggles

Skin/hand protection

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

Gloves made from the following material(s) are recommended: Polymer laminate

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

Respiratory protection

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

Half facepiece or full facepiece air-purifying respirator suitable for 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	Liquid
Specific Physical Form:	Liquid
Colour	White
Odour	Solvent
Odour threshold	No Data Available
pH	Not Applicable
Melting point/Freezing point	Not Applicable
Boiling point	≥155.6 °C
Flash Point	48.9 °C [Test Method: Closed Cup]
Evaporation rate	No Data Available
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	0.5 %
Flammable Limits(UEL)	8.7 %

Vapour Pressure	<=453.3 Pa [@ 20 °C]
Vapour Density and/or Relative Vapour Density	> 1 [Ref Std: AIR=1]
Density	1.48 g/ml
Relative density	1.48 [Ref Std: WATER=1]
Water solubility	Moderate
Solubility- non-water	No Data Available
Partition coefficient: n-octanol/ water	No Data Available
Autoignition temperature	> 337.8 °C
Decomposition temperature	No Data Available
Viscosity/Kinematic Viscosity	5,000 - 7,000 mPa-s [Test Method: Tested per ASTM protocol]
Volatile Organic Compounds	607 g/l [Details: As formulated]
Volatile Organic Compounds	686 g/l [Details: After manufacturing thinning]
Percent volatile	35 - 45 %
VOC Less H2O & Exempt Solvents	607 g/l [Details: As formulated]
VOC Less H2O & Exempt Solvents	686 g/l [Details: After manufacturing thinning]

Nanoparticles

This material contains 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

Heat

Sparks and/or flames

10.5. Incompatible materials

Strong oxidizing agents

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:**

May be harmful if inhaled. 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:

May be harmful in contact with skin. 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. May cause additional health effects (see below).

Eye Contact:

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

Ingestion:

May be harmful if swallowed. Gastrointestinal 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:**

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

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.

<u>Ingredient</u>	<u>CAS No.</u>	<u>Class Description</u>	<u>Regulation</u>
Naphthalene	91-20-3	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Naphthalene	91-20-3	Anticipated human carcinogen	National Toxicology Program Carcinogens
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

<u>Name</u>	<u>Route</u>	<u>Species</u>	<u>Value</u>
Overall product	Dermal		No data available; calculated ATE2,000 - 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 ATE2,000 - 5,000 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
CYCLOHEXANONE	Dermal	Rabbit	LD50 > 794, < 3160 mg/kg
CYCLOHEXANONE	Inhalation-Vapor (4 hours)	Rat	LC50 > 6.2 mg/l
CYCLOHEXANONE	Ingestion	Rat	LD50 1,296 mg/kg
ETHYL 3-ETHOXYPROPIONATE	Dermal	Rabbit	LD50 4,080 mg/kg

ETHYL 3-ETHOXYPROPIONATE	Inhalation-Vapor (4 hours)	Rat	LC50 > 14.4 mg/l
ETHYL 3-ETHOXYPROPIONATE	Ingestion	Rat	LD50 3,200 mg/kg
VINYL ACETATE-VINYL ALCOHOL-VINYL CHLORIDE POLYMER	Dermal	Rabbit	LD50 > 8,000 mg/kg
VINYL ACETATE-VINYL ALCOHOL-VINYL CHLORIDE POLYMER	Ingestion	Rat	LD50 > 8,000 mg/kg
2-BUTOXYETHYL ACETATE	Dermal	Rabbit	LD50 > 4,766 mg/kg
2-BUTOXYETHYL ACETATE	Inhalation-Vapor (4 hours)	Rat	LC50 > 2.66 mg/l
2-BUTOXYETHYL ACETATE	Ingestion	Rat	LD50 1,880 mg/kg
EPOXIDIZED SOYBEAN OIL	Dermal	Rabbit	LD50 > 20,000 mg/kg
EPOXIDIZED SOYBEAN OIL	Ingestion	Rat	LD50 > 5,000 mg/kg
Silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Silica	Ingestion	Rat	LD50 > 5,110 mg/kg
Aluminum Oxide	Dermal		LD50 estimated to be > 5,000 mg/kg
Aluminum Oxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 2.3 mg/l
Aluminum Oxide	Ingestion	Rat	LD50 > 5,000 mg/kg
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Dermal	Rat	LD50 > 2,000 mg/kg
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.8 mg/l
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Ingestion	Rat	LD50 > 5,000 mg/kg
Polymeric Benzotriazole	Dermal	Rat	LD50 > 2,000 mg/kg
Polymeric Benzotriazole	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.8 mg/l
Polymeric Benzotriazole	Ingestion	Rat	LD50 > 5,000 mg/kg
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation-Vapor		LC50 estimated to be 20 - 50 mg/l
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Dermal	Rabbit	LD50 > 2,000 mg/kg
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Ingestion	Rat	LD50 > 5,000 mg/kg
Bis(1,2,2,6,6-pentamethyl-4-piperidinyl) sebacate	Dermal		LD50 estimated to be 2,000 - 5,000 mg/kg
Bis(1,2,2,6,6-pentamethyl-4-piperidinyl) sebacate	Ingestion	Rat	LD50 3,125 mg/kg
ZINC 2-ETHYLHEXANOATE	Dermal		LD50 estimated to be > 5,000 mg/kg
ZINC 2-ETHYLHEXANOATE	Ingestion	Rat	LD50 > 5,000 mg/kg
Naphthalene	Dermal	Human	LD50 estimated to be 2,000 - 5,000 mg/kg
Naphthalene	Inhalation-Vapor	Human	LC50 estimated to be 20 - 50 mg/l
Naphthalene	Ingestion	Human	LD50 estimated to be 300 - 2,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Titanium Dioxide	Rabbit	No significant irritation
CYCLOHEXANONE	Rabbit	Irritant
ETHYL 3-ETHOXYPROPIONATE	Rabbit	No significant irritation
VINYL ACETATE-VINYL ALCOHOL-VINYL CHLORIDE POLYMER	Professional judgement	No significant irritation
2-BUTOXYETHYL ACETATE	Rabbit	Minimal irritation
EPOXIDIZED SOYBEAN OIL	Rabbit	No significant irritation

Silica	Rabbit	No significant irritation
Aluminum Oxide	Rabbit	No significant irritation
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Rabbit	No significant irritation
Polymeric Benzotriazole	Rabbit	No significant irritation
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Rabbit	Minimal irritation
Bis(1,2,2,6,6-pentamethyl-4-piperidiny)l sebacate	Rabbit	No significant irritation
ZINC 2-ETHYLHEXANOATE	Rabbit	Mild irritant
Naphthalene	Rabbit	Minimal irritation

Serious Eye Damage/Irritation

Name	Species	Value
Titanium Dioxide	Rabbit	No significant irritation
CYCLOHEXANONE	In vitro data	Corrosive
ETHYL 3-ETHOXYPROPIONATE	Rabbit	Mild irritant
VINYL ACETATE-VINYL ALCOHOL-VINYL CHLORIDE POLYMER	Professional judgement	No significant irritation
2-BUTOXYETHYL ACETATE	Rabbit	Mild irritant
EPOXIDIZED SOYBEAN OIL	Rabbit	No significant irritation
Silica	Rabbit	No significant irritation
Aluminum Oxide	Rabbit	No significant irritation
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Rabbit	No significant irritation
Polymeric Benzotriazole	Rabbit	No significant irritation
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Rabbit	Mild irritant
Bis(1,2,2,6,6-pentamethyl-4-piperidiny)l sebacate	Rabbit	No significant irritation
ZINC 2-ETHYLHEXANOATE	Rabbit	Severe irritant
Naphthalene	Rabbit	No significant irritation

Skin Sensitization

Name	Species	Value
Titanium Dioxide	Human and animal	Not classified
CYCLOHEXANONE	Guinea pig	Not classified
ETHYL 3-ETHOXYPROPIONATE	Guinea pig	Not classified
2-BUTOXYETHYL ACETATE	Guinea pig	Not classified
EPOXIDIZED SOYBEAN OIL	Guinea pig	Not classified
Silica	Human and animal	Not classified
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Guinea pig	Sensitizing
Polymeric Benzotriazole	Guinea pig	Sensitizing
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Guinea pig	Not classified
Bis(1,2,2,6,6-pentamethyl-4-piperidiny)l sebacate	Guinea pig	Sensitizing

Respiratory Sensitization

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

Germ Cell Mutagenicity

Name	Route	Value
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Titanium Dioxide	In Vitro	Not mutagenic
Titanium Dioxide	In vivo	Not mutagenic
CYCLOHEXANONE	In vivo	Not mutagenic
CYCLOHEXANONE	In Vitro	Some positive data exist, but the data are not sufficient for classification
ETHYL 3-ETHOXYPROPIONATE	In Vitro	Not mutagenic
EPOXIDIZED SOYBEAN OIL	In Vitro	Not mutagenic
Silica	In Vitro	Not mutagenic
Aluminum Oxide	In Vitro	Not mutagenic
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	In Vitro	Not mutagenic
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	In vivo	Not mutagenic
Polymeric Benzotriazole	In Vitro	Not mutagenic
Polymeric Benzotriazole	In vivo	Not mutagenic
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	In Vitro	Not mutagenic
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	In vivo	Not mutagenic
Bis(1,2,2,6,6-pentamethyl-4-piperidiny)l sebacate	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Titanium Dioxide	Ingestion	Multiple animal species	Not carcinogenic
Titanium Dioxide	Inhalation	Rat	Carcinogenic
CYCLOHEXANONE	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
EPOXIDIZED SOYBEAN OIL	Ingestion	Rat	Not carcinogenic
Silica	Not Specified	Mouse	Some positive data exist, but the data are not sufficient for classification
Aluminum Oxide	Inhalation	Rat	Not carcinogenic
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Not Specified	Not applicable	Carcinogenic
Naphthalene	Inhalation	Multiple animal species	Carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
CYCLOHEXANONE	Inhalation	Not classified for female reproduction	Rat	NOAEL 4 mg/l	2 generation
CYCLOHEXANONE	Inhalation	Not classified for male reproduction	Rat	NOAEL 2 mg/l	2 generation
CYCLOHEXANONE	Ingestion	Not classified for development	Mouse	LOAEL 1,100 mg/kg/day	during organogenesis
CYCLOHEXANONE	Inhalation	Not classified for development	Rat	NOAEL 2 mg/l	2 generation
EPOXIDIZED SOYBEAN OIL	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
EPOXIDIZED SOYBEAN OIL	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
EPOXIDIZED SOYBEAN OIL	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	1 generation
Silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis

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Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Ingestion	Not classified for female reproduction	Rat	NOAEL 100 mg/kg/day	premating into lactation
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Ingestion	Not classified for male reproduction	Rat	NOAEL 100 mg/kg/day	115 days
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Ingestion	Not classified for development	Rat	NOAEL 2 mg/kg/day	premating into lactation
Polymeric Benzotriazole	Ingestion	Not classified for female reproduction	Rat	NOAEL 100 mg/kg/day	premating into lactation
Polymeric Benzotriazole	Ingestion	Not classified for male reproduction	Rat	NOAEL 100 mg/kg/day	115 days
Polymeric Benzotriazole	Ingestion	Not classified for development	Rat	NOAEL 2 mg/kg/day	premating into lactation
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Not Specified	Not classified for female reproduction	Rat	NOAEL Not available	2 generation
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Not Specified	Not classified for male reproduction	Rat	NOAEL Not available	2 generation
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Not Specified	Not classified for development	Rat	NOAEL Not available	2 generation
ZINC 2-ETHYLHEXANOATE	Ingestion	Toxic to female reproduction	Rat	NOAEL 300 mg/kg/day	1 generation
ZINC 2-ETHYLHEXANOATE	Ingestion	Toxic to male reproduction	Rat	NOAEL 300 mg/kg/day	1 generation
ZINC 2-ETHYLHEXANOATE	Ingestion	Toxic to development	Rat	NOAEL 100 mg/kg/day	1 generation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
CYCLOHEXANONE	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Guinea pig	LOAEL 16.1 mg/l	6 hours
CYCLOHEXANONE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
CYCLOHEXANONE	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
2-BUTOXYETHYL ACETATE	Dermal	blood	Not classified	similar compounds	NOAEL Not available	
2-BUTOXYETHYL ACETATE	Inhalation	central nervous system depression	Some positive data exist, but the data are not sufficient for classification	similar compounds	NOAEL Not available	
2-BUTOXYETHYL ACETATE	Inhalation	blood	Not classified	similar compounds	NOAEL Not available	
2-BUTOXYETHYL ACETATE	Ingestion	blood	Not classified	similar compounds	NOAEL Not available	
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
ZINC 2-ETHYLHEXANOATE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL not available	
Naphthalene	Ingestion	blood	Causes damage to organs	Human	NOAEL Not available	poisoning and/or abuse

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
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
CYCLOHEXANONE	Inhalation	liver kidney and/or bladder	Not classified	Rabbit	NOAEL 0.76 mg/l	50 days
CYCLOHEXANONE	Ingestion	liver	Not classified	Mouse	NOAEL 4,800 mg/kg/day	90 days
ETHYL 3-ETHOXYPROPIONATE	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 6 mg/l	90 days
ETHYL 3-ETHOXYPROPIONATE	Inhalation	nervous system heart liver immune system kidney and/or bladder	Not classified	Rat	NOAEL 6 mg/l	17 days
ETHYL 3-ETHOXYPROPIONATE	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	17 days
ETHYL 3-ETHOXYPROPIONATE	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
ETHYL 3-ETHOXYPROPIONATE	Ingestion	kidney and/or bladder respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	17 days
2-BUTOXYETHYL ACETATE	Dermal	blood	Not classified	similar compounds	NOAEL Not available	not available
2-BUTOXYETHYL ACETATE	Inhalation	blood	Not classified	similar compounds	NOAEL Not available	6 months
2-BUTOXYETHYL ACETATE	Ingestion	blood	Not classified	similar compounds	NOAEL Not available	13 weeks
EPOXIDIZED SOYBEAN OIL	Ingestion	liver kidney and/or bladder	Not classified	Rat	NOAEL 1,250 mg/kg/day	2 years
Silica	Inhalation	respiratory system silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Aluminum Oxide	Inhalation	pneumoconiosis	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Aluminum Oxide	Inhalation	pulmonary fibrosis	Not classified	Human	NOAEL Not available	occupational exposure
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL not available	28 days
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 50 mg/kg/day	90 days
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-	Ingestion	liver	Not classified	Rat	NOAEL 10 mg/kg/day	28 days

hydroxy-						
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Ingestion	eyes	Not classified	Rat	NOAEL 50 mg/kg/day	90 days
Polymeric Benzotriazole	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL not available	28 days
Polymeric Benzotriazole	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 50 mg/kg/day	90 days
Polymeric Benzotriazole	Ingestion	liver	Not classified	Rat	NOAEL 10 mg/kg/day	28 days
Polymeric Benzotriazole	Ingestion	eyes	Not classified	Rat	NOAEL 50 mg/kg/day	90 days
Naphthalene	Dermal	blood	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Naphthalene	Dermal	eyes	Not classified	Human	NOAEL Not available	occupational exposure
Naphthalene	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.01 mg/l	13 weeks
Naphthalene	Inhalation	blood	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Naphthalene	Inhalation	eyes	Not classified	Human	NOAEL Not available	occupational exposure
Naphthalene	Ingestion	blood	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Naphthalene	Ingestion	eyes	May cause damage to organs though prolonged or repeated exposure	Rabbit	LOAEL 500 mg/kg/day	15 days

Aspiration Hazard

Name	Value
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Aspiration hazard

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

SECTION 12: Ecological information

No data available.

SECTION 13: Disposal considerations**13.1. Disposal methods**

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

Incinerate in a permitted waste incineration facility. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. 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.

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 the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the new substance notification requirements of CEPA. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory. The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

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: 3 Flammability: 2 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.

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