



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™ Process Colour 1805 Black

Product Identification Numbers

42-0014-9998-9 42-0016-6972-2 75-0300-4863-3 75-0300-4864-1

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:	Transportation Safety 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 1B.
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. May damage 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. 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. 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.

16% of the mixture consists of ingredients of unknown acute oral toxicity.

16% of the mixture consists of ingredients of unknown acute dermal toxicity.

16% 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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Cyclohexanone	108-94-1	15 - 40 Trade Secret *	Cyclohexanone
Ethyl 3-ethoxypropionate	763-69-9	10 - 30	Propanoic acid, 3-ethoxy-, ethyl ester
Vinyl polymer	Trade Secret	10 - 30	Not Applicable
Acrylic polymer	None	7 - 13	Not Applicable
2-Butoxyethyl acetate	112-07-2	5 - 10	Ethanol, 2-butoxy-, acetate
Carbon black	1333-86-4	3 - 7 Trade Secret *	Carbon black
Polymeric plasticizer	None	3 - 7	Not Applicable
Synthetic crystalline-free silica gel	112926-00-8	1 - 5	Silica gel, pptd., cryst.-free
Synthetic amorphous silica, fumed, crystalline free	112945-52-5	0.5 - 1.5	Fumed amorphous silica, crystalline-free
2,4-Dihydroxybenzophenone	131-56-6	0.1 - 1.0	Methanone, (2,4-dihydroxyphenyl)phenyl-
Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	41556-26-7	0.1 - 1 Trade Secret *	Decanedioic acid, bis(1,2,2,6,6-pentamethyl-4-piperidinyl) 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 C9 through C16 and boiling in the range of approximately 165.degree.C to 290.degree.C (330.degr
Methyl Methacrylate	80-62-6	0 - 0.15	2-Propenoic acid, 2-methyl-, methyl ester
Toluene	108-88-3	0 - 0.15	No Data Available
Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	82919-37-7	< 0.06	Decanedioic acid, methyl 1,2,2,6,6-pentamethyl-4-piperidinyl ester
Naphthalene	91-20-3	< 0.02	Naphthalene

Vinyl 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.

Acrylic polymer 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

<u>Substance</u>	<u>Condition</u>
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Chloride	During Combustion

5.3. Special protective actions for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust 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

For industrial or professional use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/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 cool. Keep container tightly closed. Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

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

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Toluene	108-88-3	ACGIH	TWA:20 ppm	
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	
Carbon black	1333-86-4	ACGIH	TWA(inhalable fraction):3 mg/m ³	
Methyl Methacrylate	80-62-6	ACGIH	TWA:50 ppm;STEL:100 ppm	Dermal Sensitizer
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
Colour	Black
Odour	Solvent
Odour threshold	<i>No Data Available</i>
pH	<i>Not Applicable</i>
Melting point/Freezing point	<i>Not Applicable</i>
Boiling point	≥ 156.1 °C
Flash Point	45 °C [<i>Test Method: Closed Cup</i>]
Evaporation rate	≤ 0.23 [<i>Ref Std: BUOAC=1</i>]
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	0.5 % volume
Flammable Limits(UEL)	8.7 %
Vapour Pressure	≤ 453.3 Pa [<i>@ 20 °C</i>]
Vapour Density and/or Relative Vapour Density	≥ 3.4 [<i>Ref Std: AIR=1</i>]
Density	1 g/ml
Relative density	1 [<i>Ref Std: WATER=1</i>]
Water solubility	Moderate
Solubility- non-water	<i>No Data Available</i>
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Autoignition temperature	<i>No Data Available</i>
Decomposition temperature	<i>No Data Available</i>
Viscosity/Kinematic Viscosity	5,000 - 7,000 mPa-s
Volatile Organic Compounds	550 - 750 g/l [<i>Details: as packaged</i>]
Percent volatile	60 - 70 % volume
VOC Less H ₂ O & Exempt Solvents	<i>No Data Available</i>

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Sparks and/or flames

10.5. Incompatible materials

Strong oxidizing agents
Alkali and alkaline earth metals

10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
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.

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>
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Carbon black	1333-86-4	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
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

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 >2,000 - =5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE >20 - =50 mg/l
Overall product	Ingestion		No data available; calculated ATE >2,000 - =5,000 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 polymer	Dermal	Rabbit	LD50 > 8,000 mg/kg
Vinyl 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
Carbon black	Dermal	Rabbit	LD50 > 3,000 mg/kg
Carbon black	Ingestion	Rat	LD50 > 8,000 mg/kg
Synthetic crystalline-free silica gel	Dermal	Rabbit	LD50 > 5,000 mg/kg
Synthetic crystalline-free silica gel	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Synthetic crystalline-free silica gel	Ingestion	Rat	LD50 > 5,110 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
2,4-Dihydroxybenzophenone	Dermal		LD50 estimated to be > 5,000 mg/kg
2,4-Dihydroxybenzophenone	Ingestion	Rat	LD50 8,600 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
Toluene	Dermal	Rat	LD50 12,000 mg/kg
Toluene	Inhalation-Vapor (4 hours)	Rat	LC50 30 mg/l
Toluene	Ingestion	Rat	LD50 5,550 mg/kg
Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	Dermal	Professional judgement	LD50 estimated to be 2,000 - 5,000 mg/kg
Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	Ingestion	Rat	LD50 3,125 mg/kg
Methyl Methacrylate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Methyl Methacrylate	Inhalation-Vapor (4 hours)	Rat	LC50 29 mg/l

Methyl Methacrylate	Ingestion	Rat	LD50 7,900 mg/kg
Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Dermal	Professional judgement	LD50 estimated to be 2,000 - 5,000 mg/kg
Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Ingestion	Rat	LD50 3,125 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
Cyclohexanone	Rabbit	Irritant
Ethyl 3-ethoxypropionate	Rabbit	No significant irritation
Vinyl polymer	Professional judgement	No significant irritation
2-Butoxyethyl acetate	Rabbit	Minimal irritation
Carbon black	Rabbit	No significant irritation
Synthetic crystalline-free silica gel	Rabbit	No significant irritation
Synthetic amorphous silica, fumed, crystalline free	Rabbit	No significant irritation
2,4-Dihydroxybenzophenone	Rabbit	No significant irritation
Heavy aromatic solvent naphtha (petroleum)	Rabbit	Minimal irritation
Toluene	Rabbit	Irritant
Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	Rabbit	Minimal irritation
Methyl Methacrylate	Human and animal	Mild irritant
Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Rabbit	Minimal irritation
Naphthalene	Rabbit	Minimal irritation

Serious Eye Damage/Irritation

Name	Species	Value
Cyclohexanone	In vitro data	Corrosive
Ethyl 3-ethoxypropionate	Rabbit	Mild irritant
Vinyl polymer	Professional judgement	No significant irritation
2-Butoxyethyl acetate	Rabbit	Mild irritant
Carbon black	Rabbit	No significant irritation
Synthetic crystalline-free silica gel	Rabbit	No significant irritation
Synthetic amorphous silica, fumed, crystalline free	Rabbit	No significant irritation
2,4-Dihydroxybenzophenone	Rabbit	Severe irritant
Heavy aromatic solvent naphtha (petroleum)	Rabbit	Mild irritant
Toluene	Rabbit	Moderate irritant
Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	Rabbit	Mild irritant
Methyl Methacrylate	Rabbit	Moderate irritant
Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Rabbit	Mild irritant
Naphthalene	Rabbit	No significant irritation

Skin Sensitization

Name	Species	Value
Cyclohexanone	Guinea pig	Not classified
Ethyl 3-ethoxypropionate	Guinea pig	Not classified
2-Butoxyethyl acetate	Guinea	Not classified

	pig	
Synthetic crystalline-free silica gel	Human and animal	Not classified
Synthetic amorphous silica, fumed, crystalline free	Human and animal	Not classified
Heavy aromatic solvent naphtha (petroleum)	Guinea pig	Not classified
Toluene	Guinea pig	Not classified
Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	Guinea pig	Sensitizing
Methyl Methacrylate	Human and animal	Sensitizing
Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Guinea pig	Sensitizing

Respiratory Sensitization

Name	Species	Value
Methyl Methacrylate	Human	Not classified

Germ Cell Mutagenicity

Name	Route	Value
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
Carbon black	In Vitro	Not mutagenic
Carbon black	In vivo	Some positive data exist, but the data are not sufficient for classification
Synthetic crystalline-free silica gel	In Vitro	Not mutagenic
Synthetic amorphous silica, fumed, crystalline free	In Vitro	Not mutagenic
Heavy aromatic solvent naphtha (petroleum)	In Vitro	Not mutagenic
Heavy aromatic solvent naphtha (petroleum)	In vivo	Not mutagenic
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic
Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	In vivo	Not mutagenic
Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Methyl Methacrylate	In vivo	Not mutagenic
Methyl Methacrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	In vivo	Not mutagenic
Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Cyclohexanone	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Carbon black	Dermal	Mouse	Not carcinogenic
Carbon black	Ingestion	Mouse	Not carcinogenic
Carbon black	Inhalation	Rat	Carcinogenic
Synthetic crystalline-free silica gel	Not Specified	Mouse	Some positive data exist, but the data are not sufficient for classification
Synthetic amorphous silica, fumed, crystalline free	Not Specified	Mouse	Some positive data exist, but the data are not sufficient for classification
Heavy aromatic solvent naphtha (petroleum)	Not Specified	Not applicable	Carcinogenic

Toluene	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Toluene	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification
Methyl Methacrylate	Ingestion	Rat	Not carcinogenic
Methyl Methacrylate	Inhalation	Human and animal	Not 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
Synthetic crystalline-free silica gel	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Synthetic crystalline-free silica gel	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Synthetic crystalline-free silica gel	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
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
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
Toluene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	Not classified for male reproduction	Rat	NOAEL 2.3 mg/l	1 generation
Toluene	Ingestion	Toxic to development	Rat	LOAEL 520 mg/kg/day	during gestation
Toluene	Inhalation	Toxic to development	Human	NOAEL Not available	poisoning and/or abuse
Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,493 mg/kg/day	29 days
Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	Ingestion	Not classified for development	Rat	NOAEL 209 mg/kg/day	prematuring into lactation
Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	Ingestion	Toxic to female reproduction	Rat	NOAEL 804 mg/kg/day	prematuring into lactation
Methyl Methacrylate	Inhalation	Not classified for male reproduction	Mouse	NOAEL 36.9 mg/l	
Methyl Methacrylate	Inhalation	Not classified for development	Rat	NOAEL 8.3 mg/l	during organogenesis

Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,493 mg/kg/day	s 29 days
Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Ingestion	Not classified for development	Rat	NOAEL 209 mg/kg/day	prematuring into lactation
Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Ingestion	Toxic to female reproduction	Rat	NOAEL 804 mg/kg/day	prematuring into lactation

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	
Toluene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Toluene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL 0.004 mg/l	3 hours
Toluene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
Methyl Methacrylate	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	occupational exposure
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
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 compoun ds	NOAEL Not available	not available
2-Butoxyethyl acetate	Inhalation	blood	Not classified	similar compoun ds	NOAEL Not available	6 months
2-Butoxyethyl acetate	Ingestion	blood	Not classified	similar compoun ds	NOAEL Not available	13 weeks
Carbon black	Inhalation	pneumoconiosis	Not classified	Human	NOAEL Not available	occupational exposure
Synthetic crystalline-free silica gel	Inhalation	respiratory system silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Synthetic amorphous silica, fumed, crystalline free	Inhalation	respiratory system silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	auditory system eyes olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	nervous system	May cause damage to organs though prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 2.3 mg/l	15 months
Toluene	Inhalation	heart liver kidney and/or bladder	Not classified	Rat	NOAEL 11.3 mg/l	15 weeks
Toluene	Inhalation	endocrine system	Not classified	Rat	NOAEL 1.1 mg/l	4 weeks
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL Not available	20 days
Toluene	Inhalation	bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 1.1 mg/l	8 weeks
Toluene	Inhalation	hematopoietic system vascular system	Not classified	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	gastrointestinal tract	Not classified	Multiple animal species	NOAEL 11.3 mg/l	15 weeks
Toluene	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 625 mg/kg/day	13 weeks
Toluene	Ingestion	heart	Not classified	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	liver kidney and/or bladder	Not classified	Multiple animal species	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	hematopoietic system	Not classified	Mouse	NOAEL 600 mg/kg/day	14 days
Toluene	Ingestion	endocrine system	Not classified	Mouse	NOAEL 105 mg/kg/day	28 days
Toluene	Ingestion	immune system	Not classified	Mouse	NOAEL 105 mg/kg/day	4 weeks
Bis(1,2,2,6,6-pentamethyl- 4-piperidyl) sebacate	Ingestion	eyes	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 300 mg/kg/day	28 days
Bis(1,2,2,6,6-pentamethyl- 4-piperidyl) sebacate	Ingestion	gastrointestinal tract liver immune	Not classified	Rat	NOAEL 1,493	29 days

		system heart endocrine system hematopoietic system nervous system kidney and/or bladder			mg/kg/day	
Methyl Methacrylate	Dermal	peripheral nervous system	Not classified	Human	NOAEL Not available	occupational exposure
Methyl Methacrylate	Inhalation	olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Methyl Methacrylate	Inhalation	kidney and/or bladder	Not classified	Multiple animal species	NOAEL Not available	14 weeks
Methyl Methacrylate	Inhalation	liver	Not classified	Mouse	NOAEL 12.3 mg/l	14 weeks
Methyl Methacrylate	Inhalation	respiratory system	Not classified	Human	NOAEL Not available	occupational exposure
Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Ingestion	eyes	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 300 mg/kg/day	28 days
Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Ingestion	gastrointestinal tract liver immune system heart endocrine system hematopoietic system nervous system kidney and/or bladder	Not classified	Rat	NOAEL 1,493 mg/kg/day	29 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
Toluene	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 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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