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™ Roll Coat Colour 4853 Opaque Red

Product Identification Numbers
42-0016-6391-5 75-0300-4161-2

1.2. Recommended use and restrictions on use

Intended Use
Roll Coat

Restrictions on use
Not applicable

1.3. Supplier's details

Company:	3M Canada Company
Division:	Commercial Branding and Transportation 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 / 1800 364 3577

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Flammable Liquid: Category 3.
Skin Corrosion/Irritation: Category 2.
Serious Eye Damage/Irritation: Category 1.
Respiratory Sensitizer: Category 1.
Skin Sensitizer: Category 1A.
Carcinogenicity: Category 1A.
Reproductive Toxicity: Category 1B.
Specific Target Organ Toxicity (single exposure): Category 1.
Specific Target Organ Toxicity (repeated exposure): Category 1.

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 skin irritation. Causes serious eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. May cause cancer. May damage fertility or the unborn child. May cause drowsiness or dizziness. May cause respiratory irritation.
Causes damage to organs: sensory organs.

Causes damage to organs through prolonged or repeated exposure: nervous system.
May cause damage to organs through prolonged or repeated exposure: respiratory system | sensory organs.

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. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical, ventilating and lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Do not breathe vapours. Wash exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves, eye protection, face protection, and if needed, respiratory protection (see SDS Section 8). In case of inadequate ventilation wear respiratory protection.

Response:
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor. Get medical attention if you feel unwell. If skin irritation or rash occurs: Get medical attention. If experiencing respiratory symptoms: Call a POISON CENTER or doctor. 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 and container in accordance with applicable local, regional, national, and international regulations.

2.3. Other hazards
None known.

20% of the mixture consists of ingredients of unknown acute oral toxicity.
20% of the mixture consists of ingredients of unknown acute dermal toxicity.

20% 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
1-Methoxy-2-propylacetate	108-65-6	10 - 30	2-Propanol, 1-methoxy-, acetate
Cyclohexanone	108-94-1	10 - 30 Trade Secret *	Cyclohexanone
Heavy aromatic solvent naphtha (Petroleum)	64742-94-5	10 - 30 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
Oligomer 17171	Trade Secret	10 - 30	Not Applicable
Alkyl amine polymer	Trade Secret	7 - 13	Not Applicable
Vinyl polymer	Trade Secret	3 - 10	Not Applicable
Butyl alcohol	71-36-3	1 - 5 Trade Secret *	1-Butanol
Light aromatic solvent naphtha (petroleum)	64742-95-6	1 - 5 Trade Secret *	Solvent naphtha (petroleum), light arom.
N, N'-Dimethyl-3,4,9,10-perylenetetracarboximide	5521-31-3	0.5 - 5 Trade Secret *	Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-dimethyl-
Organic pigment	Trade Secret	0.5 - 5	Not Applicable
Titanium dioxide	13463-67-7	1 - 5 Trade Secret *	Titanium oxide (TiO2)
Xylene	1330-20-7	1 - 5 Trade Secret *	Dimethylbenzene
1,2,4-Trimethylbenzene	95-63-6	0.1 - 3	Benzene, 1,2,4-trimethyl-
Diethylene glycol butyl ether	112-34-5	0.1 - 3	Ethanol, 2-(2-butoxyethoxy)-
Ethylbenzene	100-41-4	0.1 - 1 Trade Secret *	Benzene, ethyl-
Methyl Alcohol	67-56-1	0.1 - 1 Trade Secret *	Methanol
Nickel salts of naphthenic acids	61788-71-4	0.1 - 1 Trade Secret *	Naphthenic acids, nickel salts
Cumene	98-82-8	< 0.5	Benzene, (1-methylethyl)-
Naphthalene	91-20-3	< 0.5	Naphthalene
2,3-Epoxypropyl neodecanoate	26761-45-5	< 0.4	Neodecanoic acid, oxiranylmethyl ester
Naphthenic Acid	1338-24-5	< 0.4	Naphthenic acids
Dibutyltin dilaurate	77-58-7	< 0.2	Stannane, dibutylbis[(1-oxododecyl)oxy]-
Formaldehyde	50-00-0	< 0.2	Formaldehyde
Benzo(a)pyrene	50-32-8	< 0.0009	No Data Available

Oligomer 17171 is a non-hazardous material according to WHMIS criteria. Specific information has been withheld as a trade secret.
Alkyl amine polymer is a non-hazardous material according to WHMIS criteria. Specific information has been withheld as a trade secret.
Vinyl polymer is a non-hazardous material according to WHMIS criteria. Specific information has been withheld as a trade secret.
Organic pigment is a non-hazardous material according to WHMIS criteria. Specific information has been withheld as a trade secret.

*The concentration (exact or range) of this component 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

Irritating to the respiratory tract (coughing, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain). Allergic respiratory reaction (difficulty breathing, wheezing, cough, and tightness of chest). 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). Target organ effects. See Section 11 for additional details. Target organ effects following prolonged or repeated exposure. See Section 11 for additional details.

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. Unsuitable extinguishing media
None Determined

5.3. 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	Condition
Hydrocarbons	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Chloride	During Combustion
Oxides of Nitrogen	During Combustion

5.4. Special protection 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. Use personal protective equipment based on the results of an exposure assessment. Refer to Section 8 for PPE recommendations. If anticipated exposure resulting from an accidental release exceeds the protective capabilities of the PPE listed in Section 8, or are unknown, select PPE that offers an appropriate level of protection. Consider the physical and chemical hazards of the material when doing so. Examples of PPE ensembles for emergency response could include wearing bunker gear for a release of flammable material; wearing chemical protective clothing if the spilled material is a corrosive, a sensitizer, a significant dermal irritant, or can be absorbed through the skin; or donning a positive pressure supplied-air respirator for chemicals with inhalation hazards. For information regarding physical and health hazards, refer to sections 2 and 11 of the SDS.

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. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
For industrial or professional use only. 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. Store locked up.

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
Ethylbenzene	100-41-4	ACGIH	TWA:20 ppm	
1-Methoxy-2-propylacetate	108-65-6	AIHA	TWA:50 ppm	
Cyclohexanone	108-94-1	ACGIH	TWA:20 ppm;STEL:50 ppm	Danger of cutaneous absorption

Diethylene glycol butyl ether	112-34-5	ACGIH	TWA(inhalable fraction and vapor):10 ppm	
Xylene	1330-20-7	ACGIH	TWA:20 ppm	
Titanium dioxide	13463-67-7	ACGIH	TWA(Respirable nanoscale particles):0.2 mg/m3;TWA(Respirable finescale particles):2.5 mg/m3	
Formaldehyde	50-00-0	ACGIH	TWA:0.1 ppm;STEL:0.3 ppm	Dermal/Respiratory Sensitizer
Benzo(a)pyrene	50-32-8	ACGIH	Limit value not established:	Cntrl all exposr-low as possib
Methyl Alcohol	67-56-1	ACGIH	TWA:200 ppm;STEL:250 ppm	Danger of cutaneous absorption
Butyl alcohol	71-36-3	ACGIH	TWA:20 ppm	
Tin, organic compounds, as Sn	77-58-7	ACGIH	TWA(as Sn):0.1 mg/m3;STEL(as Sn):0.2 mg/m3	Danger of cutaneous absorption
Naphthalene	91-20-3	ACGIH	TWA:10 ppm	Danger of cutaneous absorption
1,2,4-Trimethylbenzene	95-63-6	ACGIH	TWA:10 ppm	
Cumene	98-82-8	ACGIH	TWA:5 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. 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 (e.g., spraying, high splash potential, etc.), then use of a protective apron may be necessary. See recommended glove material(s) for determining appropriate apron material(s). If a glove material is not available as an apron, polymer laminate is a suitable option.

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 formaldehyde
Half facepiece or full facepiece air-purifying respirator suitable for organic vapours and particulates
Half facepiece or full facepiece supplied-air respirator

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	Red
Odour	Aromatic Solvent
Odour threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*Not Applicable*
Boiling point	>=117.2 ºC
Flash Point	35.6 ºC [*Test Method:*Tagliabue Closed Cup]
Evaporation rate	>=0.23 [*Ref Std:*BUOAC=1]
Flammability	Flammable Liquid: Category 3.
Flammable Limits(LEL)	0.9 %
Flammable Limits(UEL)	11.7 %
Vapour Pressure	<=679.9 Pa [@ 20 ºC]
Relative Vapour Density	2.6 - 4.8 [*Ref Std:*AIR=1]
Density	0.81 - 0.96 g/ml [@ 20 ºC]
Relative density	0.81 - 0.96 [*Ref Std:*WATER=1]
Water solubility	Negligible
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	354.4 - 465.6 ºC
Decomposition temperature	*No Data Available*
Kinematic Viscosity	2,083 mm2/sec
Volatile Organic Compounds	600 - 700 g/l
Percent volatile	50 - 65 % weight
VOC Less H2O & Exempt Solvents	*No Data Available*

Particle Characteristics	*Not Applicable*

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

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. Allergic Respiratory Reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest. 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:
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:
Auditory Effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears. Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Prolonged or repeated exposure may cause target organ effects:

Auditory Effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears. Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate. Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish coloured skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.

Reproductive/Developmental Toxicity:
Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Carcinogenicity:
Contains a chemical or chemicals which can cause cancer.

Ingredient	CAS No.	Class Description	Regulation
Nickel Compounds (except alloys)	61788-71-4	Known To Be Human Carcinogen.	National Toxicology Program Carcinogens
Nickel compounds	61788-71-4	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
Benzo(a)pyrene	50-32-8	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
Benzo(a)pyrene	50-32-8	Anticipated human carcinogen	National Toxicology Program Carcinogens
Cumene	98-82-8	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Cumene	98-82-8	Anticipated human carcinogen	National Toxicology Program Carcinogens
Ethylbenzene	100-41-4	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Formaldehyde	50-00-0	Known To Be Human Carcinogen.	National Toxicology Program Carcinogens
Formaldehyde	50-00-0	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
FORMALDEHYDE	50-00-0	Cancer hazard	OSHA Carcinogens
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

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 >5,000 mg/kg
Heavy aromatic solvent naphtha (Petroleum)	Inhalation-Vapor	Professional judgement	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
1-Methoxy-2-propylacetate	Dermal	Rabbit	LD50 > 5,000 mg/kg
1-Methoxy-2-propylacetate	Inhalation-Vapor (4 hours)	Rat	LC50 > 28.8 mg/l
1-Methoxy-2-propylacetate	Ingestion	Rat	LD50 8,532 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
Alkyl amine polymer	Dermal	Rabbit	LD50 10,960 mg/kg
Alkyl amine polymer	Ingestion	Rat	LD50 13,480 mg/kg
Vinyl polymer	Dermal	Rabbit	LD50 > 8,000 mg/kg
Vinyl polymer	Ingestion	Rat	LD50 > 8,000 mg/kg
Light aromatic solvent naphtha (petroleum)	Dermal	Rabbit	LD50 > 3,160 mg/kg
Light aromatic solvent naphtha (petroleum)	Inhalation-Vapor (4 hours)	Rat	LC50 > 6.2 mg/l

Light aromatic solvent naphtha (petroleum)	Ingestion	Rat	LD50 3,492 mg/kg
Organic pigment	Dermal		LD50 estimated to be > 5,000 mg/kg
Organic pigment	Inhalation-Dust/Mist		LC50 estimated to be > 12.5 mg/l
Organic pigment	Ingestion		LD50 estimated to be > 5,000 mg/kg
N, N'-Dimethyl-3,4,9,10-perylenetetracarboximide	Dermal	Rat	LD50 > 2,500 mg/kg
N, N'-Dimethyl-3,4,9,10-perylenetetracarboximide	Ingestion	Rat	LD50 > 5,000 mg/kg
N, N'-Dimethyl-3,4,9,10-perylenetetracarboximide	Inhalation-Dust/Mist (4 hours)	similar compounds	LC50 > 5.2 mg/l
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
Diethylene glycol butyl ether	Dermal	Rabbit	LD50 2,764 mg/kg
Diethylene glycol butyl ether	Ingestion	Rat	LD50 7,292 mg/kg
1,2,4-Trimethylbenzene	Dermal	Rabbit	LD50 > 3,160 mg/kg
1,2,4-Trimethylbenzene	Inhalation-Vapor (4 hours)	Rat	LC50 18 mg/l
1,2,4-Trimethylbenzene	Ingestion	Rat	LD50 3,400 mg/kg
Butyl alcohol	Dermal	Rabbit	LD50 3,402 mg/kg
Butyl alcohol	Inhalation-Vapor (4 hours)	Rat	LC50 24 mg/l
Butyl alcohol	Ingestion	Rat	LD50 2,290 mg/kg
Xylene	Dermal	Rabbit	LD50 > 4,200 mg/kg
Xylene	Inhalation-Vapor (4 hours)	Rat	LC50 29 mg/l
Xylene	Ingestion	Rat	LD50 3,523 mg/kg
Ethylbenzene	Dermal	Rabbit	LD50 15,433 mg/kg
Ethylbenzene	Inhalation-Vapor (4 hours)	Rat	LC50 17.4 mg/l
Ethylbenzene	Ingestion	Rat	LD50 4,769 mg/kg
Nickel salts of naphthenic acids	Ingestion	Rat	LD50 419 mg/kg
Cumene	Dermal	Rabbit	LD50 > 3,160 mg/kg
Cumene	Inhalation-Vapor (4 hours)	Rat	LC50 39.4 mg/l
Cumene	Ingestion	Rat	LD50 2,260 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
Naphthenic Acid	Dermal	Rabbit	LD50 > 20,000 mg/kg
Naphthenic Acid	Ingestion	Rat	LD50 5,880 mg/kg
2,3-Epoxypropyl neodecanoate	Dermal	Rat	LD50 > 2,000 mg/kg
2,3-Epoxypropyl neodecanoate	Ingestion	Rat	LD50 > 2,000 mg/kg
Methyl Alcohol	Dermal		LD50 estimated to be 1,000 - 2,000 mg/kg
Methyl Alcohol	Inhalation-Vapor		LC50 estimated to be 10 - 20 mg/l
Methyl Alcohol	Ingestion		LD50 estimated to be 50 - 300 mg/kg
Formaldehyde	Dermal	Rabbit	LD50 270 mg/kg
Formaldehyde	Inhalation-Gas (4 hours)	Rat	LC50 470 ppm
Formaldehyde	Ingestion	Rat	LD50 800 mg/kg
Dibutyltin dilaurate	Dermal	Rat	LD50 > 2,000 mg/kg
Dibutyltin dilaurate	Ingestion	Rat	LD50 1,290 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Heavy aromatic solvent naphtha (Petroleum)	Rabbit	Minimal irritation
1-Methoxy-2-propylacetate	Rabbit	No significant irritation
Cyclohexanone	Rabbit	Irritant
Alkyl amine polymer	Rabbit	Mild irritant
Vinyl polymer	Professional judgement	No significant irritation
Light aromatic solvent naphtha (petroleum)	Rabbit	Mild irritant
Organic pigment	Professional judgement	No significant irritation
N, N'-Dimethyl-3,4,9,10-perylenetetracarboximide	Rabbit	No significant irritation
Titanium dioxide	Rabbit	No significant irritation
Diethylene glycol butyl ether	Rabbit	Minimal irritation
1,2,4-Trimethylbenzene	Rabbit	Irritant
Butyl alcohol	Rabbit	Mild irritant
Xylene	Rabbit	Mild irritant
Ethylbenzene	Rabbit	Mild irritant
Nickel salts of naphthenic acids	Professional judgement	Minimal irritation
Cumene	Rabbit	Minimal irritation
Naphthalene	Rabbit	Minimal irritation
Naphthenic Acid	Rabbit	Mild irritant
2,3-Epoxypropyl neodecanoate	Rabbit	No significant irritation
Methyl Alcohol	Rabbit	Mild irritant
Formaldehyde	official classification	Corrosive
Dibutyltin dilaurate	Rabbit	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Heavy aromatic solvent naphtha (Petroleum)	Rabbit	Mild irritant
1-Methoxy-2-propylacetate	Rabbit	Mild irritant
Cyclohexanone	In vitro data	Corrosive
Alkyl amine polymer	Rabbit	No significant irritation
Vinyl polymer	Professional judgement	No significant irritation
Light aromatic solvent naphtha (petroleum)	Rabbit	Mild irritant
Organic pigment	Professional judgement	No significant irritation
N, N'-Dimethyl-3,4,9,10-perylenetetracarboximide	Rabbit	No significant irritation
Titanium dioxide	Rabbit	No significant irritation
Diethylene glycol butyl ether	Rabbit	Corrosive
1,2,4-Trimethylbenzene	Rabbit	Mild irritant
Butyl alcohol	Rabbit	Severe irritant
Xylene	Rabbit	Mild irritant
Ethylbenzene	Rabbit	Moderate irritant
Nickel salts of naphthenic acids	Professional judgement	Mild irritant
Cumene	Rabbit	Mild irritant

Naphthalene	Rabbit	No significant irritation
Naphthenic Acid	Rabbit	Moderate irritant
2,3-Epoxypropyl neodecanoate	Rabbit	No significant irritation
Methyl Alcohol	Rabbit	Moderate irritant
Formaldehyde	official classification	Corrosive
Dibutyltin dilaurate	Rabbit	Corrosive

Skin Sensitization

Name	Species	Value
Heavy aromatic solvent naphtha (Petroleum)	Guinea pig	Not classified
1-Methoxy-2-propylacetate	Guinea pig	Not classified
Cyclohexanone	Guinea pig	Not classified
Light aromatic solvent naphtha (petroleum)	Guinea pig	Not classified
N, N'-Dimethyl-3,4,9,10-perylenetetracarboximide	Mouse	Not classified
Titanium dioxide	Human and animal	Not classified
1,2,4-Trimethylbenzene	Guinea pig	Not classified
Butyl alcohol	Human	Not classified
Ethylbenzene	Human	Not classified
Nickel salts of naphthenic acids	similar compounds	Sensitizing
Cumene	Guinea pig	Not classified
Naphthenic Acid	Guinea pig	Sensitizing
2,3-Epoxypropyl neodecanoate	Guinea pig	Sensitizing
Methyl Alcohol	Guinea pig	Not classified
Formaldehyde	Guinea pig	Sensitizing
Dibutyltin dilaurate	Guinea pig	Sensitizing
Benzo(a)pyrene	Mouse	Sensitizing

Respiratory Sensitization

Name	Species	Value
Nickel salts of naphthenic acids	Professional judgement	Sensitizing
Formaldehyde	Human	Some positive data exist, but the data are not sufficient for classification

Germ Cell Mutagenicity

Name	Route	Value
Heavy aromatic solvent naphtha (Petroleum)	In Vitro	Not mutagenic
Heavy aromatic solvent naphtha (Petroleum)	In vivo	Not mutagenic
1-Methoxy-2-propylacetate	In Vitro	Not mutagenic
Cyclohexanone	In Vitro	Not mutagenic
Cyclohexanone	In vivo	Not mutagenic
Light aromatic solvent naphtha (petroleum)	In Vitro	Not mutagenic
N, N'-Dimethyl-3,4,9,10-perylenetetracarboximide	In Vitro	Not mutagenic

Titanium dioxide	In Vitro	Not mutagenic
Titanium dioxide	In vivo	Not mutagenic
1,2,4-Trimethylbenzene	In Vitro	Not mutagenic
Butyl alcohol	In vivo	Not mutagenic
Butyl alcohol	In Vitro	Some positive data exist, but the data are not sufficient for classification
Xylene	In Vitro	Not mutagenic
Xylene	In vivo	Not mutagenic
Ethylbenzene	In vivo	Not mutagenic
Ethylbenzene	In Vitro	Some positive data exist, but the data are not sufficient for classification
Nickel salts of naphthenic acids	In Vitro	Some positive data exist, but the data are not sufficient for classification
Nickel salts of naphthenic acids	In vivo	Mutagenic
Cumene	In Vitro	Not mutagenic
Cumene	In vivo	Not mutagenic
Naphthenic Acid	In vivo	Not mutagenic
Naphthenic Acid	In Vitro	Some positive data exist, but the data are not sufficient for classification
2,3-Epoxypropyl neodecanoate	In Vitro	Some positive data exist, but the data are not sufficient for classification
2,3-Epoxypropyl neodecanoate	In vivo	Mutagenic
Methyl Alcohol	In Vitro	Some positive data exist, but the data are not sufficient for classification
Methyl Alcohol	In vivo	Some positive data exist, but the data are not sufficient for classification
Formaldehyde	In Vitro	Some positive data exist, but the data are not sufficient for classification
Formaldehyde	In vivo	Mutagenic
Dibutyltin dilaurate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Dibutyltin dilaurate	In vivo	Mutagenic
Benzo(a)pyrene	In Vitro	Some positive data exist, but the data are not sufficient for classification
Benzo(a)pyrene	In vivo	Mutagenic

Carcinogenicity

Name	Route	Species	Value
Cyclohexanone	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Titanium dioxide	Ingestion	Multiple animal species	Not carcinogenic
Titanium dioxide	Inhalation	Rat	Carcinogenic
Xylene	Dermal	Rat	Not carcinogenic
Xylene	Ingestion	Multiple animal species	Not carcinogenic
Xylene	Inhalation	Human	Some positive data exist, but the data are not sufficient for classification
Ethylbenzene	Inhalation	Multiple animal species	Carcinogenic
Nickel salts of naphthenic acids	Inhalation	similar compounds	Carcinogenic
Cumene	Inhalation	Multiple animal species	Carcinogenic
Naphthalene	Inhalation	Multiple animal species	Carcinogenic
Methyl Alcohol	Inhalation	Multiple animal species	Not carcinogenic

Formaldehyde	Not Specified	Human and animal	Carcinogenic
Benzo(a)pyrene	Dermal	Human and animal	Carcinogenic
Benzo(a)pyrene	Ingestion	Human and animal	Carcinogenic
Benzo(a)pyrene	Inhalation	Human and animal	Carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
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
1-Methoxy-2-propylacetate	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1-Methoxy-2-propylacetate	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1-Methoxy-2-propylacetate	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1-Methoxy-2-propylacetate	Inhalation	Not classified for development	Rat	NOAEL 21.6 mg/l	during organogenesis
Cyclohexanone	Inhalation	Not classified for female reproduction	Rat	NOAEL 4 mg/l	2 generation
Cyclohexanone	Ingestion	Not classified for development	Rabbit	NOAEL 500 mg/kg/day	during gestation
Cyclohexanone	Inhalation	Not classified for male reproduction	Rat	NOAEL 2 mg/l	2 generation
Cyclohexanone	Inhalation	Not classified for development	Rat	NOAEL 2.6 mg/l	during gestation
Light aromatic solvent naphtha (petroleum)	Not Specified	Not classified for female reproduction	Rat	NOAEL Not available	2 generation
Light aromatic solvent naphtha (petroleum)	Not Specified	Not classified for male reproduction	Rat	NOAEL Not available	2 generation
Light aromatic solvent naphtha (petroleum)	Not Specified	Not classified for development	Rat	NOAEL Not available	2 generation
N, N'-Dimethyl-3,4,9,10-perylenetetracarboximide	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
N, N'-Dimethyl-3,4,9,10-perylenetetracarboximide	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	30 days
N, N'-Dimethyl-3,4,9,10-perylenetetracarboximide	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during gestation
1,2,4-Trimethylbenzene	Inhalation	Not classified for female reproduction	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-Trimethylbenzene	Inhalation	Not classified for male reproduction	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-Trimethylbenzene	Inhalation	Not classified for development	Rat	NOAEL 1.5 mg/l	during gestation
Butyl alcohol	Ingestion	Not classified for female reproduction	Rat	NOAEL 5,000 mg/kg/day	premating & during gestation
Butyl alcohol	Inhalation	Not classified for male reproduction	Rat	NOAEL 18	6 weeks

				mg/l	
Butyl alcohol	Inhalation	Not classified for development	Rat	NOAEL 10.6 mg/l	during gestation
Xylene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure
Xylene	Ingestion	Not classified for development	Mouse	NOAEL Not available	during organogenesis
Xylene	Inhalation	Not classified for development	Multiple animal species	NOAEL Not available	during gestation
Ethylbenzene	Inhalation	Not classified for development	Rat	NOAEL 4.3 mg/l	premating & during gestation
Nickel salts of naphthenic acids	Ingestion	Toxic to development	similar compounds	NOAEL not available	2 generation
Cumene	Inhalation	Not classified for development	Rabbit	NOAEL 11.3 mg/l	during organogenesis
Naphthenic Acid	Ingestion	Not classified for female reproduction	Rat	NOAEL 900 mg/kg/day	premating into lactation
Naphthenic Acid	Ingestion	Not classified for male reproduction	Rat	NOAEL 900 mg/kg/day	28 days
Naphthenic Acid	Ingestion	Toxic to development	Rat	NOAEL 100 mg/kg/day	premating into lactation
2,3-Epoxypropyl neodecanoate	Ingestion	Not classified for female reproduction	Rat	NOAEL 300 mg/kg/day	2 generation
2,3-Epoxypropyl neodecanoate	Ingestion	Not classified for male reproduction	Rat	NOAEL 300 mg/kg/day	2 generation
2,3-Epoxypropyl neodecanoate	Ingestion	Toxic to development	Rat	NOAEL 50 mg/kg/day	2 generation
Methyl Alcohol	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,600 mg/kg/day	21 days
Methyl Alcohol	Ingestion	Toxic to development	Mouse	LOAEL 4,000 mg/kg/day	during organogenesis
Methyl Alcohol	Inhalation	Toxic to development	Mouse	NOAEL 1.3 mg/l	during organogenesis
Formaldehyde	Ingestion	Not classified for male reproduction	Rat	NOAEL 100 mg/kg	not applicable
Formaldehyde	Inhalation	Not classified for development	Rat	NOAEL 10 ppm	during gestation
Dibutyltin dilaurate	Ingestion	Toxic to female reproduction	Rat	NOAEL 2 mg/kg/day	premating into lactation
Dibutyltin dilaurate	Ingestion	Toxic to development	Rat	NOAEL 2.5 mg/kg/day	during gestation
Benzo(a)pyrene	Ingestion	Toxic to female reproduction	Human and animal	NOAEL Not Available	
Benzo(a)pyrene	Inhalation	Toxic to female reproduction	Human and animal	NOAEL Not Available	
Benzo(a)pyrene	Ingestion	Toxic to male reproduction	Human and animal	NOAEL Not Available	
Benzo(a)pyrene	Inhalation	Toxic to male reproduction	Human and animal	NOAEL Not Available	
Benzo(a)pyrene	Ingestion	Toxic to development	Human and animal	NOAEL Not Available	
Benzo(a)pyrene	Inhalation	Toxic to development	Human and animal	NOAEL Not Available	

Lactation

Name	Route	Species	Value
Xylene	Ingestion	Mouse	Not classified for effects on or via lactation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Heavy aromatic solvent naphtha (Petroleum)	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
1-Methoxy-2-propylacetate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
1-Methoxy-2-propylacetate	Ingestion	central nervous system depression	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL not available	
Cyclohexanone	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Guinea pig	LOAEL 16.1 mg/l	6 hours
Cyclohexanone	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	
Cyclohexanone	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
Alkyl amine polymer	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Light aromatic solvent naphtha (petroleum)	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Light aromatic solvent naphtha (petroleum)	Inhalation	respiratory irritation	May cause respiratory irritation		NOAEL Not available	
1,2,4-Trimethylbenzene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
1,2,4-Trimethylbenzene	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
1,2,4-Trimethylbenzene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
Butyl alcohol	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Butyl alcohol	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
Butyl alcohol	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Xylene	Inhalation	auditory system	Causes damage to organs	Rat	LOAEL 6.3 mg/l	8 hours
Xylene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Xylene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Xylene	Inhalation	eyes	Not classified	Rat	NOAEL 3.5 mg/l	not available
Xylene	Inhalation	liver	Not classified	Multiple animal species	NOAEL Not available	
Xylene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Multiple animal	NOAEL Not available	

				species		
Xylene	Ingestion	eyes	Not classified	Rat	NOAEL 250 mg/kg	not applicable
Ethylbenzene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Ethylbenzene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
Cumene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL Not available	not available
Cumene	Inhalation	respiratory irritation	May cause respiratory irritation	Human	LOAEL 0.2 mg/l	occupational exposure
Cumene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL Not available	not available
Naphthalene	Ingestion	blood	Causes damage to organs	Human	NOAEL Not available	poisoning and/or abuse
Naphthenic Acid	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Methyl Alcohol	Inhalation	blindness	Causes damage to organs	Human	NOAEL Not available	occupational exposure
Methyl Alcohol	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	not available
Methyl Alcohol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	6 hours
Methyl Alcohol	Ingestion	blindness	Causes damage to organs	Human	NOAEL Not available	poisoning and/or abuse
Methyl Alcohol	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
Formaldehyde	Inhalation	respiratory system	Causes damage to organs	Rat	LOAEL 128 ppm	6 hours
Formaldehyde	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Dibutyltin dilaurate	Ingestion	immune system	Causes damage to organs	Rat	LOAEL 5 mg/kg	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
1-Methoxy-2-propylacetate	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 16.2 mg/l	9 days
1-Methoxy-2-propylacetate	Inhalation	olfactory system	Not classified	Mouse	LOAEL 1.62 mg/l	9 days
1-Methoxy-2-propylacetate	Inhalation	blood	Not classified	Multiple animal species	NOAEL 16.2 mg/l	9 days
1-Methoxy-2-propylacetate	Ingestion	endocrine system	Not classified	Rat	NOAEL 1,000 mg/kg/day	44 days
Cyclohexanone	Inhalation	liver	Not classified	Rat	NOAEL 2.5 mg/l	13 weeks
Cyclohexanone	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 2.5 mg/l	13 weeks
Cyclohexanone	Inhalation	heart	Not classified	Rat	NOAEL 2.5 mg/l	13 weeks
Cyclohexanone	Inhalation	skin	Not classified	Rat	NOAEL 2.5 mg/l	13 weeks
Cyclohexanone	Inhalation	endocrine system	Not classified	Rat	NOAEL 2.5 mg/l	13 weeks
Cyclohexanone	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 2.5 mg/l	13 weeks
Cyclohexanone	Inhalation	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 2.5 mg/l	13 weeks

Cyclohexanone	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 2.5 mg/l	13 weeks
Cyclohexanone	Inhalation	immune system	Not classified	Rat	NOAEL 2.5 mg/l	13 weeks
Cyclohexanone	Inhalation	muscles	Not classified	Rat	NOAEL 2.5 mg/l	13 weeks
Cyclohexanone	Inhalation	nervous system	Not classified	Rat	NOAEL 2.5 mg/l	13 weeks
Cyclohexanone	Inhalation	eyes	Not classified	Rat	NOAEL 2.5 mg/l	13 weeks
Cyclohexanone	Inhalation	respiratory system	Not classified	Rat	NOAEL 2.5 mg/l	13 weeks
Cyclohexanone	Inhalation	vascular system	Not classified	Rat	NOAEL 2.5 mg/l	13 weeks
Cyclohexanone	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 407 mg/kg/day	3 months
Cyclohexanone	Ingestion	eyes	Not classified	Rat	NOAEL 407 mg/kg/day	3 months
Cyclohexanone	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 407 mg/kg/day	3 months
N, N'-Dimethyl-3,4,9,10-perylenetetracarboximide	Inhalation	respiratory system	May cause damage to organs though prolonged or repeated exposure	similar compoun ds	NOAEL 0.001 mg/l	90 days
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
1,2,4-Trimethylbenzene	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 0.5 mg/l	3 months
1,2,4-Trimethylbenzene	Inhalation	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.1 mg/l	3 months
1,2,4-Trimethylbenzene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
1,2,4-Trimethylbenzene	Inhalation	liver	Not classified	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-Trimethylbenzene	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-Trimethylbenzene	Inhalation	heart	Not classified	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-Trimethylbenzene	Inhalation	endocrine system	Not classified	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-Trimethylbenzene	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-Trimethylbenzene	Inhalation	immune system	Not classified	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-Trimethylbenzene	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 600 mg/kg/day	14 days
1,2,4-Trimethylbenzene	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
1,2,4-Trimethylbenzene	Ingestion	immune system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
1,2,4-Trimethylbenzene	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Butyl alcohol	Inhalation	blood	Not classified	Rat	NOAEL 0.3 mg/l	3 months
Butyl alcohol	Inhalation	auditory system	Not classified	Human	NOAEL Not available	occupational exposure
Butyl alcohol	Inhalation	liver	Not classified	Guinea pig	NOAEL Not available	3 months
Butyl alcohol	Inhalation	kidney and/or	Not classified	Guinea	NOAEL Not	3 months

		bladder		pig	available	
Butyl alcohol	Inhalation	respiratory system	Not classified	Guinea pig	NOAEL Not available	3 months
Butyl alcohol	Inhalation	nervous system	Not classified	Rat	NOAEL 9.09 mg/l	13 weeks
Butyl alcohol	Ingestion	blood	Not classified	Rat	NOAEL 500 mg/kg/day	13 weeks
Xylene	Inhalation	nervous system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.4 mg/l	4 weeks
Xylene	Inhalation	auditory system	May cause damage to organs though prolonged or repeated exposure	Rat	LOAEL 7.8 mg/l	5 days
Xylene	Inhalation	liver	Not classified	Multiple animal species	NOAEL Not available	
Xylene	Inhalation	heart	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Inhalation	endocrine system	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Inhalation	gastrointestinal tract	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Inhalation	hematopoietic system	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Inhalation	muscles	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Inhalation	kidney and/or bladder	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Inhalation	respiratory system	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Ingestion	auditory system	Not classified	Rat	NOAEL 900 mg/kg/day	2 weeks
Xylene	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,500 mg/kg/day	90 days
Xylene	Ingestion	liver	Not classified	Multiple animal species	NOAEL Not available	
Xylene	Ingestion	heart	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	skin	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	endocrine system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	hematopoietic system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	immune system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	nervous system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	respiratory system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks

Ethylbenzene	Inhalation	auditory system	May cause damage to organs though prolonged or repeated exposure	Rat	LOAEL 0.9 mg/l	13 weeks
Ethylbenzene	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.1 mg/l	2 years
Ethylbenzene	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 1.1 mg/l	103 weeks
Ethylbenzene	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 3.4 mg/l	28 days
Ethylbenzene	Inhalation	endocrine system	Not classified	Mouse	NOAEL 3.3 mg/l	103 weeks
Ethylbenzene	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 3.3 mg/l	2 years
Ethylbenzene	Inhalation	bone, teeth, nails, and/or hair	Not classified	Multiple animal species	NOAEL 4.2 mg/l	90 days
Ethylbenzene	Inhalation	muscles	Not classified	Multiple animal species	NOAEL 4.2 mg/l	90 days
Ethylbenzene	Inhalation	heart	Not classified	Multiple animal species	NOAEL 3.3 mg/l	2 years
Ethylbenzene	Inhalation	immune system	Not classified	Multiple animal species	NOAEL 3.3 mg/l	2 years
Ethylbenzene	Inhalation	respiratory system	Not classified	Multiple animal species	NOAEL 3.3 mg/l	2 years
Ethylbenzene	Ingestion	liver	Not classified	Rat	NOAEL 680 mg/kg/day	6 months
Ethylbenzene	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 680 mg/kg/day	6 months
Nickel salts of naphthenic acids	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	similar compoun ds	NOAEL not available	13 weeks
Cumene	Inhalation	auditory system	Not classified	Rat	NOAEL 59 mg/l	13 weeks
Cumene	Inhalation	endocrine system	Not classified	Rat	NOAEL 59 mg/l	13 weeks
Cumene	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 59 mg/l	13 weeks
Cumene	Inhalation	liver	Not classified	Rat	NOAEL 59 mg/l	13 weeks
Cumene	Inhalation	nervous system	Not classified	Rat	NOAEL 59 mg/l	13 weeks
Cumene	Inhalation	eyes	Not classified	Rat	NOAEL 59 mg/l	13 weeks
Cumene	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 4.9 mg/l	13 weeks
Cumene	Inhalation	respiratory system	Not classified	Rat	NOAEL 59 mg/l	13 weeks
Cumene	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 769 mg/kg/day	6 months
Cumene	Ingestion	heart	Not classified	Rat	NOAEL 769 mg/kg/day	6 months
Cumene	Ingestion	endocrine system	Not classified	Rat	NOAEL 769 mg/kg/day	6 months
Cumene	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 769 mg/kg/day	6 months
Cumene	Ingestion	liver	Not classified	Rat	NOAEL 769 mg/kg/day	6 months
Cumene	Ingestion	respiratory system	Not classified	Rat	NOAEL 769 mg/kg/day	6 months
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
Naphthenic Acid	Ingestion	endocrine system	Not classified	Rat	NOAEL 881 mg/kg/day	90 days
Naphthenic Acid	Ingestion	liver	Not classified	Rat	NOAEL 881 mg/kg/day	90 days
Naphthenic Acid	Ingestion	heart	Not classified	Rat	NOAEL 881 mg/kg/day	90 days
Naphthenic Acid	Ingestion	skin	Not classified	Rat	NOAEL 881 mg/kg/day	90 days
Naphthenic Acid	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 881 mg/kg/day	90 days
Naphthenic Acid	Ingestion	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 881 mg/kg/day	90 days
Naphthenic Acid	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 881 mg/kg/day	90 days
Naphthenic Acid	Ingestion	immune system	Not classified	Rat	NOAEL 881 mg/kg/day	90 days
Naphthenic Acid	Ingestion	muscles	Not classified	Rat	NOAEL 881 mg/kg/day	90 days
Naphthenic Acid	Ingestion	nervous system	Not classified	Rat	NOAEL 881 mg/kg/day	90 days
Naphthenic Acid	Ingestion	eyes	Not classified	Rat	NOAEL 881 mg/kg/day	90 days
Naphthenic Acid	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 881 mg/kg/day	90 days
Naphthenic Acid	Ingestion	respiratory system	Not classified	Rat	NOAEL 881 mg/kg/day	90 days
Naphthenic Acid	Ingestion	vascular system	Not classified	Rat	NOAEL 881 mg/kg/day	90 days
2,3-Epoxypropyl neodecanoate	Ingestion	endocrine system	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
2,3-Epoxypropyl neodecanoate	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
2,3-Epoxypropyl neodecanoate	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
2,3-Epoxypropyl neodecanoate	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 100 mg/kg/day	90 days
2,3-Epoxypropyl neodecanoate	Ingestion	heart	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
2,3-Epoxypropyl neodecanoate	Ingestion	skin	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
2,3-Epoxypropyl neodecanoate	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
2,3-Epoxypropyl neodecanoate	Ingestion	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
2,3-Epoxypropyl neodecanoate	Ingestion	immune system	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days

2,3-Epoxypropyl neodecanoate	Ingestion	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
2,3-Epoxypropyl neodecanoate	Ingestion	eyes	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
2,3-Epoxypropyl neodecanoate	Ingestion	respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
2,3-Epoxypropyl neodecanoate	Ingestion	vascular system	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
Methyl Alcohol	Inhalation	liver	Not classified	Rat	NOAEL 6.55 mg/l	4 weeks
Methyl Alcohol	Inhalation	respiratory system	Not classified	Rat	NOAEL 13.1 mg/l	6 weeks
Methyl Alcohol	Ingestion	liver	Not classified	Rat	NOAEL 2,500 mg/kg/day	90 days
Methyl Alcohol	Ingestion	nervous system	Not classified	Rat	NOAEL 2,500 mg/kg/day	90 days
Formaldehyde	Dermal	respiratory system	Not classified	Mouse	NOAEL 80 mg/kg/day	60 weeks
Formaldehyde	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 0.3 ppm	28 months
Formaldehyde	Inhalation	liver	Not classified	Rat	NOAEL 20 ppm	13 weeks
Formaldehyde	Inhalation	hematopoietic system	Not classified	Mouse	NOAEL 15 ppm	3 weeks
Formaldehyde	Inhalation	nervous system	Not classified	Mouse	NOAEL 10 ppm	13 weeks
Formaldehyde	Inhalation	endocrine system	Not classified	Rat	NOAEL 15 ppm	28 months
Formaldehyde	Inhalation	immune system	Not classified	Rat	NOAEL 15 ppm	28 months
Formaldehyde	Inhalation	muscles	Not classified	Rat	NOAEL 15 ppm	28 months
Formaldehyde	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 15 ppm	28 months
Formaldehyde	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 15 ppm	2 years
Formaldehyde	Inhalation	eyes	Not classified	Rat	NOAEL 14.3 ppm	2 years
Formaldehyde	Inhalation	vascular system	Not classified	Rat	NOAEL 14.3 ppm	2 years
Formaldehyde	Inhalation	heart	Not classified	Mouse	NOAEL 14.3 ppm	2 years
Formaldehyde	Ingestion	liver	Not classified	Rat	NOAEL 300 mg/kg/day	2 years
Formaldehyde	Ingestion	immune system	Not classified	Rat	NOAEL 20 mg/kg/day	4 weeks
Formaldehyde	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 15 mg/kg/day	24 months
Formaldehyde	Ingestion	nervous system	Not classified	Rat	NOAEL 109 mg/kg/day	2 years
Formaldehyde	Ingestion	heart	Not classified	Rat	NOAEL 300 mg/kg/day	2 years
Formaldehyde	Ingestion	endocrine system	Not classified	Rat	NOAEL 300 mg/kg/day	2 years
Formaldehyde	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 300 mg/kg/day	2 years
Formaldehyde	Ingestion	respiratory system	Not classified	Rat	NOAEL 300 mg/kg/day	2 years
Formaldehyde	Ingestion	vascular system	Not classified	Rat	NOAEL 300 mg/kg/day	2 years
Formaldehyde	Ingestion	skin	Not classified	Rat	NOAEL 109	2 years

					mg/kg/day	
Formaldehyde	Ingestion	muscles	Not classified	Rat	NOAEL 109 mg/kg/day	2 years
Formaldehyde	Ingestion	eyes	Not classified	Rat	NOAEL 109 mg/kg/day	2 years
Dibutyltin dilaurate	Ingestion	liver	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 2 mg/kg/day	2 weeks
Dibutyltin dilaurate	Ingestion	immune system	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 0.3 mg/kg/day	28 days

Aspiration Hazard

Name	Value
Heavy aromatic solvent naphtha (Petroleum)	Aspiration hazard
Light aromatic solvent naphtha (petroleum)	Aspiration hazard
1,2,4-Trimethylbenzene	Aspiration hazard
Butyl alcohol	Some positive data exist, but the data are not sufficient for classification
Xylene	Aspiration hazard
Ethylbenzene	Aspiration hazard
Cumene	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.

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 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:** 3 **Instability:** 0 **Special Hazards:** None

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

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