Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier
3M™ Process Color 990-12 Red

Product Identification Numbers
LE-N100-0147-1, 42-0016-3988-1, 75-0300-8079-2
4010037495, 7000004847

1.2. Recommended use and restrictions on use

Recommended use
Ink

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Commercial Branding and Transportation Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number
1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification
Flammable Liquid: Category 3.
Skin Corrosion/Irritation: Category 2.
Serious Eye Damage/Irritation: Category 1.
Respiratory Sensitizer: Category 1.
Skin Sensitizer: Category 1.
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 vapor.

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: 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 vapors.
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, and face protection.
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.
IF exposed or concerned: Immediately call a POISON CENTER or doctor.
Get medical attention if you feel unwell.
If experiencing respiratory symptoms or if skin irritation or rash occurs: 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.

23% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
1-Methoxy-2-propyl acetate	108-65-6	10 - 30
Cyclohexanone	108-94-1	10 - 30 Trade Secret *
Dipropylene glycol methyl ether acetate	88917-22-0	10 - 30
Vinyl polymer (NJ TSR # 04499600-5238P)	Trade Secret*	10 - 30
Organic pigment (NJ TSR # 04499600-5232P)	Trade Secret*	1 - 10
Xylene	1330-20-7	3 - 7 Trade Secret *
Alkyd resin 259722 (NJ TSR # 04499600-6267P)	Trade Secret*	3 - 7
2,4-Dihydroxybenzophenone	131-56-6	0.5 - 1.5 Trade Secret *
Ethylbenzene	100-41-4	0.5 - 1.5 Trade Secret *
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	52829-07-9	0.1 - 1 Trade Secret *
Nickel salts of naphthenic acids	61788-71-4	0.1 - 1 Trade Secret *
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	104810-48-2	0.1 - 1 Trade Secret *
Polymeric Benzotriazole	104810-47-1	0.1 - 1 Trade Secret *
2,3-epoxypropyl neodecanoate	26761-45-5	< 0.3
Naphthenic acid	1338-24-5	< 0.3
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	2386-87-0	< 0.2
Calcium 2-ethylhexanoate	136-51-6	< 0.2
Phosphonic acid, diphenyl ester	4712-55-4	< 0.2
Zinc 2-ethylhexanoate	136-53-8	< 0.2
Triphenyl phosphite	101-02-0	< 0.04

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:
Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:
Immediately flush with large amounts of water 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. 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

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 vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors 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 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 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/occupational 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/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. 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
Ethylbenzene	100-41-4	ACGIH	TWA:20 ppm	A3: Confirmed animal carcin.,Ototoxicant
Ethylbenzene	100-41-4	OSHA	TWA:435 mg/m3(100 ppm)	
1-Methoxy-2-propyl acetate	108-65-6	AIHA	TWA:50 ppm	
Cyclohexanone	108-94-1	ACGIH	TWA:20 ppm;STEL:50 ppm	A3: Confirmed animal carcin.,Danger of cutaneous absorption
Cyclohexanone	108-94-1	OSHA	TWA:200 mg/m3(50 ppm)	
Xylene	1330-20-7	ACGIH	TWA:20 ppm	A4: Not class. as human carcin
Xylene	1330-20-7	OSHA	TWA:435 mg/m3(100 ppm)	
NICKEL, SOLUBLE COMPOUNDS, AS /NI/	61788-71-4	OSHA	TWA(as Ni):1 mg/m3	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines
OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment. 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 organic vapors 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
Color	Red
Odor	Moderate Solvent
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*Not Applicable*

Boiling point/Initial boiling point/Boiling range	>=138.3 ºC
Flash Point	42.8 ºC [*Test Method:*Tagliabue Closed Cup]
Evaporation rate	<=1 [*Ref Std:*BUOAC=1]
Flammability	Flammable Liquid: Category 3.
Flammable Limits(LEL)	1 %
Flammable Limits(UEL)	12.75 %
Vapor Pressure	<=895.9 Pa [@ 20 ºC]
Relative Vapor Density	>=3.4 [*Ref Std:*AIR=1]
Density	0.97 g/ml [@ 20 ºC]
Relative Density	0.97 [*Ref Std:*WATER=1]
Water solubility	*No Data Available*
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*No Data Available*
Kinematic Viscosity	1,340 mm2/sec
Volatile Organic Compounds	700 - 800 g/l [*Details:*As Packaged.]
Percent volatile	65 - 80 % weight
VOC Less H2O & Exempt Solvents	*No Data Available*
Molecular weight	*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.

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:
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.

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
Organic pigment (NJ TSR # 04499600-	Trade Secret	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer

5232P)			
Organic pigment (NJ TSR # 04499600-5232P)	Trade Secret	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
Organic pigment (NJ TSR # 04499600-5232P)	Trade Secret	Known To Be Human Carcinogen.	National Toxicology Program Carcinogens
Organic pigment (NJ TSR # 04499600-5232P)	Trade Secret	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
Ethylbenzene	100-41-4	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 >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
Dipropylene glycol methyl ether acetate	Dermal	Rat	LD50 > 2,000 mg/kg
Dipropylene glycol methyl ether acetate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.7 mg/l
Dipropylene glycol methyl ether acetate	Ingestion	Rat	LD50 > 5,000 mg/kg
1-Methoxy-2-propyl acetate	Dermal	Rabbit	LD50 > 5,000 mg/kg
1-Methoxy-2-propyl acetate	Inhalation-Vapor (4 hours)	Rat	LC50 > 28.8 mg/l
1-Methoxy-2-propyl acetate	Ingestion	Rat	LD50 8,532 mg/kg
Vinyl polymer (NJ TSR # 04499600-5238P)	Dermal	Rabbit	LD50 > 8,000 mg/kg
Vinyl polymer (NJ TSR # 04499600-5238P)	Ingestion	Rat	LD50 > 8,000 mg/kg
Alkyd resin 259722 (NJ TSR # 04499600-6267P)	Dermal		LD50 estimated to be > 5,000 mg/kg
Alkyd resin 259722 (NJ TSR # 04499600-6267P)	Ingestion		LD50 estimated to be > 5,000 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
Organic pigment (NJ TSR # 04499600-5232P)	Dermal		LD50 estimated to be > 5,000 mg/kg
Organic pigment (NJ TSR # 04499600-5232P)	Inhalation-Dust/Mist		LC50 estimated to be > 12.5 mg/l
Organic pigment (NJ TSR # 04499600-5232P)	Ingestion		LD50 estimated to be > 5,000 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
2,4-Dihydroxybenzophenone	Dermal		LD50 estimated to be > 5,000 mg/kg
2,4-Dihydroxybenzophenone	Ingestion	Rat	LD50 8,600 mg/kg
Nickel salts of naphthenic acids	Ingestion	Rat	LD50 419 mg/kg
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Dermal	Rat	LD50 > 3,170 mg/kg
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.5 mg/l
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Ingestion	Rat	LD50 3,700 mg/kg
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-	Dermal	Rat	LD50 > 2,000 mg/kg

(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-			
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.8 mg/l
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Ingestion	Rat	LD50 > 5,000 mg/kg
Polymeric Benzotriazole	Dermal	Rat	LD50 > 2,000 mg/kg
Polymeric Benzotriazole	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.8 mg/l
Polymeric Benzotriazole	Ingestion	Rat	LD50 > 5,000 mg/kg
2,3-epoxypropyl neodecanoate	Dermal	Rat	LD50 > 2,000 mg/kg
2,3-epoxypropyl neodecanoate	Ingestion	Rat	LD50 > 2,000 mg/kg
Naphthenic acid	Dermal	Rabbit	LD50 > 20,000 mg/kg
Naphthenic acid	Ingestion	Rat	LD50 5,880 mg/kg
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Dermal	Rat	LD50 > 2,000 mg/kg
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.19 mg/l
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	Rat	LD50 5,000 mg/kg
Phosphonic acid, diphenyl ester	Dermal	Rabbit	LD50 > 2,000 mg/kg
Phosphonic acid, diphenyl ester	Ingestion	Rat	LD50 600 mg/kg
Zinc 2-ethylhexanoate	Dermal		LD50 estimated to be > 5,000 mg/kg
Zinc 2-ethylhexanoate	Ingestion	Rat	LD50 > 5,000 mg/kg
Calcium 2-ethylhexanoate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Calcium 2-ethylhexanoate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 1.2 mg/l
Calcium 2-ethylhexanoate	Ingestion	Rat	LD50 >300, <2000 mg/kg
Triphenyl phosphite	Dermal	Rabbit	LD50 > 2,000 mg/kg
Triphenyl phosphite	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 1.7 mg/l
Triphenyl phosphite	Ingestion	Rat	LD50 1,590 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Cyclohexanone	Rabbit	Irritant
Dipropylene glycol methyl ether acetate	Rabbit	No significant irritation
1-Methoxy-2-propyl acetate	Rabbit	No significant irritation
Vinyl polymer (NJ TSR # 04499600-5238P)	Professional judgement	No significant irritation
Xylene	Rabbit	Mild irritant
Organic pigment (NJ TSR # 04499600-5232P)	Professional judgement	No significant irritation
Ethylbenzene	Rabbit	Mild irritant
2,4-Dihydroxybenzophenone	Rabbit	No significant irritation
Nickel salts of naphthenic acids	Professional judgement	Minimal irritation
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Rabbit	No significant irritation
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Rabbit	No significant irritation
Polymeric Benzotriazole	Rabbit	No significant irritation
2,3-epoxypropyl neodecanoate	Rabbit	No significant irritation
Naphthenic acid	Rabbit	Mild irritant

(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Rabbit	Minimal irritation
Zinc 2-ethylhexanoate	Rabbit	Mild irritant
Calcium 2-ethylhexanoate	Rabbit	No significant irritation
Triphenyl phosphite	Rabbit	Irritant

Serious Eye Damage/Irritation

Name	Species	Value
Cyclohexanone	In vitro data	Corrosive
Dipropylene glycol methyl ether acetate	Rabbit	No significant irritation
1-Methoxy-2-propyl acetate	Rabbit	Mild irritant
Vinyl polymer (NJ TSR # 04499600-5238P)	Professional judgement	No significant irritation
Xylene	Rabbit	Mild irritant
Organic pigment (NJ TSR # 04499600-5232P)	Professional judgement	No significant irritation
Ethylbenzene	Rabbit	Moderate irritant
2,4-Dihydroxybenzophenone	Rabbit	Severe irritant
Nickel salts of naphthenic acids	Professional judgement	Mild irritant
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Rabbit	Corrosive
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Rabbit	No significant irritation
Polymeric Benzotriazole	Rabbit	No significant irritation
2,3-epoxypropyl neodecanoate	Rabbit	No significant irritation
Naphthenic acid	Rabbit	Moderate irritant
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Rabbit	Mild irritant
Zinc 2-ethylhexanoate	Rabbit	Severe irritant
Calcium 2-ethylhexanoate	Rabbit	Corrosive
Triphenyl phosphite	Rabbit	Moderate irritant

Skin Sensitization

Name	Species	Value
Cyclohexanone	Guinea pig	Not classified
Dipropylene glycol methyl ether acetate	Guinea pig	Not classified
1-Methoxy-2-propyl acetate	Guinea pig	Not classified
Ethylbenzene	Human	Not classified
Nickel salts of naphthenic acids	similar compounds	Sensitizing
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Guinea pig	Not classified
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Guinea pig	Sensitizing
Polymeric Benzotriazole	Guinea pig	Sensitizing
2,3-epoxypropyl neodecanoate	Guinea pig	Sensitizing
Naphthenic acid	Guinea pig	Sensitizing
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Guinea pig	Sensitizing
Triphenyl phosphite	Mouse	Sensitizing

Photosensitization

Name	Species	Value
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Guinea pig	Not sensitizing

Respiratory Sensitization

Name	Species	Value
Nickel salts of naphthenic acids	Professional judgement	Sensitizing

Germ Cell Mutagenicity

Name	Route	Value
Cyclohexanone	In Vitro	Not mutagenic
Cyclohexanone	In vivo	Not mutagenic
Dipropylene glycol methyl ether acetate	In Vitro	Not mutagenic
Dipropylene glycol methyl ether acetate	In vivo	Not mutagenic
1-Methoxy-2-propyl acetate	In Vitro	Not mutagenic
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
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	In Vitro	Not mutagenic
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	In Vitro	Not mutagenic
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	In vivo	Not mutagenic
Polymeric Benzotriazole	In Vitro	Not mutagenic
Polymeric Benzotriazole	In vivo	Not mutagenic
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
Naphthenic acid	In vivo	Not mutagenic
Naphthenic acid	In Vitro	Some positive data exist, but the data are not sufficient for classification
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	In vivo	Some positive data exist, but the data are not sufficient for classification
Calcium 2-ethylhexanoate	In Vitro	Not mutagenic
Triphenyl phosphite	In Vitro	Not mutagenic
Triphenyl phosphite	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Cyclohexanone	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
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	Carcinogenic

		species	
Nickel salts of naphthenic acids	Inhalation	similar compounds	Carcinogenic
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Dermal	Mouse	Not 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	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
1-Methoxy-2-propyl acetate	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1-Methoxy-2-propyl acetate	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1-Methoxy-2-propyl acetate	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1-Methoxy-2-propyl acetate	Inhalation	Not classified for development	Rat	NOAEL 21.6 mg/l	during organogenesis
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
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Ingestion	Not classified for male reproduction	Rat	NOAEL 430 mg/kg/day	2 generation
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Ingestion	Not classified for development	Rat	NOAEL 130 mg/kg/day	2 generation
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Ingestion	Toxic to female reproduction	Rat	NOAEL 130 mg/kg/day	2 generation
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Ingestion	Not classified for female reproduction	Rat	NOAEL 100 mg/kg/day	premating into lactation
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Ingestion	Not classified for male reproduction	Rat	NOAEL 100 mg/kg/day	115 days
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Ingestion	Not classified for development	Rat	NOAEL 2 mg/kg/day	premating into lactation
Polymeric Benzotriazole	Ingestion	Not classified for female reproduction	Rat	NOAEL 100 mg/kg/day	premating into lactation
Polymeric Benzotriazole	Ingestion	Not classified for male reproduction	Rat	NOAEL 100	115 days

				mg/kg/day	
Polymeric Benzotriazole	Ingestion	Not classified for development	Rat	NOAEL 2 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
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
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	Not classified for development	Rat	NOAEL 125 mg/kg/day	during gestation
Zinc 2-ethylhexanoate	Ingestion	Not classified for female reproduction	similar compounds	NOAEL 800 mg/kg/day	2 generation
Zinc 2-ethylhexanoate	Ingestion	Not classified for male reproduction	similar compounds	NOAEL 800 mg/kg/day	2 generation
Zinc 2-ethylhexanoate	Ingestion	Toxic to development	similar compounds	NOAEL 100 mg/kg/day	during gestation
Calcium 2-ethylhexanoate	Ingestion	Not classified for female reproduction	similar compounds	NOAEL 800 mg/kg/day	2 generation
Calcium 2-ethylhexanoate	Ingestion	Not classified for male reproduction	similar compounds	NOAEL 800 mg/kg/day	2 generation
Calcium 2-ethylhexanoate	Ingestion	Toxic to development	similar compounds	NOAEL 100 mg/kg/day	during gestation
Triphenyl phosphite	Ingestion	Not classified for female reproduction	Rat	NOAEL 40 mg/kg/day	premating into lactation
Triphenyl phosphite	Ingestion	Not classified for male reproduction	Rat	NOAEL 40 mg/kg/day	28 days
Triphenyl phosphite	Ingestion	Not classified for development	Rat	NOAEL 40 mg/kg/day	during gestation

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
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	
1-Methoxy-2-propyl acetate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
1-Methoxy-2-propyl acetate	Ingestion	central nervous system depression	Some positive data exist, but the data are not sufficient for	Rat	NOAEL not available	

			classification			
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 species	NOAEL Not available	
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	
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Dermal	photoirritation	Not classified	Mouse	NOAEL not available	
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL not available	
Naphthenic acid	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Zinc 2-ethylhexanoate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL not available	
Calcium 2-ethylhexanoate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
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	13 weeks

					mg/l	
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
Dipropylene glycol methyl ether acetate	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	4 weeks
Dipropylene glycol methyl ether acetate	Ingestion	heart	Not classified	Rat	NOAEL 1,000 mg/kg/day	4 weeks
Dipropylene glycol methyl ether acetate	Ingestion	endocrine system	Not classified	Rat	NOAEL 1,000 mg/kg/day	4 weeks
Dipropylene glycol methyl ether acetate	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 1,000 mg/kg/day	4 weeks
Dipropylene glycol methyl ether acetate	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	4 weeks
1-Methoxy-2-propyl acetate	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 16.2 mg/l	9 days
1-Methoxy-2-propyl acetate	Inhalation	olfactory system	Not classified	Mouse	LOAEL 1.62 mg/l	9 days
1-Methoxy-2-propyl acetate	Inhalation	blood	Not classified	Multiple animal species	NOAEL 16.2 mg/l	9 days
1-Methoxy-2-propyl acetate	Ingestion	endocrine system	Not classified	Rat	NOAEL 1,000 mg/kg/day	44 days
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	90 days

					mg/kg/day	
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 compounds	NOAEL not available	13 weeks
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Ingestion	heart	Not classified	Rat	NOAEL 261 mg/kg/day	90 days

Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Ingestion	skin	Not classified	Rat	NOAEL 261 mg/kg/day	90 days
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Ingestion	endocrine system	Not classified	Rat	NOAEL 261 mg/kg/day	90 days
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 261 mg/kg/day	90 days
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Ingestion	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 261 mg/kg/day	90 days
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 261 mg/kg/day	90 days
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Ingestion	liver	Not classified	Rat	NOAEL 261 mg/kg/day	90 days
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Ingestion	immune system	Not classified	Rat	NOAEL 261 mg/kg/day	90 days
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Ingestion	muscles	Not classified	Rat	NOAEL 261 mg/kg/day	90 days
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Ingestion	nervous system	Not classified	Rat	NOAEL 261 mg/kg/day	90 days
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Ingestion	eyes	Not classified	Rat	NOAEL 261 mg/kg/day	90 days
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 261 mg/kg/day	90 days
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Ingestion	respiratory system	Not classified	Rat	NOAEL 261 mg/kg/day	90 days
Bis(2,2,6,6-tetramethyl-4-piperidinyl) sebacate	Ingestion	vascular system	Not classified	Rat	NOAEL 261 mg/kg/day	90 days
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Ingestion	liver	Not classified	Rat	NOAEL 50 mg/kg/day	90 days
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Ingestion	endocrine system	Not classified	Rat	NOAEL 50 mg/kg/day	90 days
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 50 mg/kg/day	90 days
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Ingestion	eyes	Not classified	Rat	NOAEL 50 mg/kg/day	90 days
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 50 mg/kg/day	90 days
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Ingestion	respiratory system	Not classified	Rat	NOAEL 50 mg/kg/day	90 days

Polymeric Benzotriazole	Ingestion	liver	Not classified	Rat	NOAEL 50 mg/kg/day	90 days
Polymeric Benzotriazole	Ingestion	endocrine system	Not classified	Rat	NOAEL 50 mg/kg/day	90 days
Polymeric Benzotriazole	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 50 mg/kg/day	90 days
Polymeric Benzotriazole	Ingestion	eyes	Not classified	Rat	NOAEL 50 mg/kg/day	90 days
Polymeric Benzotriazole	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 50 mg/kg/day	90 days
Polymeric Benzotriazole	Ingestion	respiratory system	Not classified	Rat	NOAEL 50 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
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	90 days

					mg/kg/day	
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
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	olfactory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 50 mg/kg/day	91 days
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	liver	Not classified	Rat	NOAEL 500 mg/kg/day	91 days
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 500 mg/kg/day	91 days
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	heart	Not classified	Rat	NOAEL 500 mg/kg/day	91 days
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	skin	Not classified	Rat	NOAEL 500 mg/kg/day	91 days
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	endocrine system	Not classified	Rat	NOAEL 500 mg/kg/day	91 days
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 500 mg/kg/day	91 days
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 500 mg/kg/day	91 days
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	immune system	Not classified	Rat	NOAEL 500 mg/kg/day	91 days
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	nervous system	Not classified	Rat	NOAEL 500 mg/kg/day	91 days
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	eyes	Not classified	Rat	NOAEL 500 mg/kg/day	91 days
(3',4'-Epoxycyclohexylmethyl)	Ingestion	respiratory system	Not classified	Rat	NOAEL 500 mg/kg/day	91 days

3,4-epoxycyclohexanecarboxylate						
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	vascular system	Not classified	Rat	NOAEL 500 mg/kg/day	91 days
Triphenyl phosphite	Ingestion	nervous system	May cause damage to organs though prolonged or repeated exposure	Rat	NOAEL 15 mg/kg/day	28 days
Triphenyl phosphite	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 40 mg/kg/day	28 days
Triphenyl phosphite	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 40 mg/kg/day	28 days

Aspiration Hazard

Name	Value
Xylene	Aspiration hazard
Ethylbenzene	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

Ecotoxicological information

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

Chemical fate information

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

SECTION 13: Disposal considerations

13.1. Disposal methods

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

Dispose of 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.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable), D006 (Cadmium), D009 (Mercury), D010 (Selenium), D018 (Benzene), D043 (Vinyl chloride)

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. US Federal Regulations

Contact 3M for more information.

EPCRA 311/312 Hazard Classifications:

Physical Hazards
Flammable (gases, aerosols, liquids, or solids)

Health Hazards
Carcinogenicity
Reproductive toxicity
Respiratory or Skin Sensitization
Serious eye damage or eye irritation
Skin Corrosion or Irritation
Specific target organ toxicity (single or repeated exposure)

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

Ingredient	C.A.S. No	% by Wt
Xylene	1330-20-7	Trade Secret 3 - 7
Ethylbenzene	100-41-4	Trade Secret 0.5 - 1.5
Nickel salts of naphthenic acids	61788-71-4	Trade Secret 0.1 - 1

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this product are in compliance with the chemical notification requirements of TSCA. One or more chemical components of this material have been commercialized under the TSCA polymer exemption at 40CFR723.250. Polymers subject to this exemption are not listed on the TSCA Inventory, but are in compliance with TSCA requirements.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification
Health: 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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