Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier
3M™ Process Color 880N Series Special Color CF0880N-165 Copper

Product Identification Numbers
75-0301-9256-3

1.2. Recommended use and restrictions on use

Recommended use
Ink

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Traffic Safety and Security 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.
Serious Eye Damage/Irritation: Category 2A.
Skin Corrosion/Irritation: Category 2.
Skin Sensitizer: Category 1.
Reproductive Toxicity: Category 1B.
Carcinogenicity: Category 2.
Specific Target Organ Toxicity (central nervous system): Category 3.

2.2. Label elements
Signal word
Danger

Symbols
Flame | Exclamation mark | Health Hazard |

Pictograms

Hazard Statements
Flammable liquid and vapor.

Causes serious eye irritation.
Causes skin irritation.
May cause an allergic skin reaction.
May cause drowsiness or dizziness.
May damage fertility or the unborn child.
Suspected of causing cancer.

Precautionary Statements

Prevention:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Ground/bond container and receiving equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Keep container tightly closed.
Use explosion-proof electrical/ventilating/lighting equipment.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
Wear protective gloves and eye/face protection.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.

Response:
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF exposed or concerned: Get medical advice/attention.
In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

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

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

2.3. Hazards not otherwise classified

None.

13% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Butyl methacrylate-methyl methacrylate polymer	25608-33-7	30 - 60 Trade Secret *
Heavy aromatic solvent naphtha (Petroleum)	64742-94-5	15 - 40 Trade Secret *
Pine oil	8002-09-3	10 - 30 Trade Secret *
Light aromatic solvent naphtha (Petroleum)	64742-95-6	3 - 7 Trade Secret *
1-Methoxy-2-propyl acetate	108-65-6	1 - 5
Cyclohexanone	108-94-1	1 - 5 Trade Secret *
Vinyl polymer (New Jersey Trade Secret Registry# 04499600-5238P)	Trade Secret*	0.1 - 2
1,2,4-Trimethylbenzene	95-63-6	1 - 2 Trade Secret *
2,6-Dimethyl-4-heptanone	108-83-8	0.1 - 2 Trade Secret *
2,3,4,5-Tetrachloro-6-cyanobenzoic acid,methyl ester,reaction products with 2-methyl-1,3-benzenediamine and sodum methoxide	106276-79-3	0.5 - 1.5
3-Dodecyl-1-(2,2,6,6-tetramethyl-4-piperidinyl) -2,5-pyrrolidinedione	79720-19-7	0.1 - 1.0
Naphthalene	91-20-3	< 0.3 Trade Secret *
Glycolic acid, butyl ester	7397-62-8	< 0.3 Trade Secret *
Ethylbenzene	100-41-4	< 0.3 Trade Secret *
Toluene	108-88-3	< 0.3 Trade Secret *
N-Butyl methacrylate	97-88-1	< 0.3 Trade Secret *
Oils, orange	8008-57-9	< 0.3 Trade Secret *
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	2386-87-0	< 0.2 Trade Secret *
D-limonene	5989-27-5	< 0.2 Trade Secret *
Methyl methacrylate	80-62-6	< 0.2 Trade Secret *

*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. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

If Swallowed:
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed
See Section 11.1. Information on toxicological effects.

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

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
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.

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. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

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

6.3. Methods and material for containment and cleaning up
Contain spill. Cover spill area with a fire-extinguishing foam designed for use on solvents, such as alcohols and acetone, that can dissolve in water. An AR - AFFF type foam is recommended. 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.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
For industrial or professional use only. 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.
Ethylbenzene	100-41-4	CMRG	TWA:25 ppm;STEL:75 ppm	
Ethylbenzene	100-41-4	OSHA	TWA:435 mg/m3(100 ppm)	
1-Methoxy-2-propyl acetate	108-65-6	AIHA	TWA:50 ppm	
1-Methoxy-2-propyl acetate	108-65-6	CMRG	TWA:10 mg/m3;STEL:90 ppm	
2,6-Dimethyl-4-heptanone	108-83-8	ACGIH	TWA:25 ppm	
2,6-Dimethyl-4-heptanone	108-83-8	OSHA	TWA:290 mg/m3(50 ppm)	
Toluene	108-88-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcin
Toluene	108-88-3	CMRG	STEL:75 ppm	Skin Notation
Toluene	108-88-3	OSHA	TWA:200 ppm;CEIL:300 ppm	
Cyclohexanone	108-94-1	ACGIH	TWA:20 ppm;STEL:50 ppm	A3: Confirmed animal carcin., Skin Notation
Cyclohexanone	108-94-1	OSHA	TWA:200 mg/m3(50 ppm)	
Cyclohexene, 1-methyl-4-(1-methylethenyl)-	5989-27-5	AIHA	TWA:165.5 mg/m3(30 ppm)	
Heavy aromatic solvent naphtha (Petroleum)	64742-94-5	CMRG	TWA:17 ppm(100 mg/m3)	
Naphtha	64742-94-5	OSHA	TWA:400 mg/m3(100 ppm)	
Light aromatic solvent naphtha (Petroleum)	64742-95-6	CMRG	TWA:50 ppm(245 mg/m3)	
Methyl methacrylate	80-62-6	ACGIH	TWA:50 ppm;STEL:100 ppm	A4: Not class. as human carcin, Sensitizer
Methyl methacrylate	80-62-6	OSHA	TWA:410 mg/m3(100 ppm)	
Pine oil	8002-09-3	CMRG	TWA:100 ppm	
Naphthalene	91-20-3	ACGIH	TWA:10 ppm	A3: Confirmed animal carcin., Skin Notation
Naphthalene	91-20-3	OSHA	TWA:50 mg/m3(10 ppm)	
Benzene, trimethyl-	95-63-6	ACGIH	TWA:25 ppm	
N-Butyl methacrylate	97-88-1	CMRG	TWA:50 ppm;STEL:75 ppm	

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:
Indirect Vented Goggles

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

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

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Liquid
Odor, Color, Grade:	Solvent odor, copper colored, liquid
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point	*Not Applicable*
Boiling Point	>=284 ºF
Flash Point	126 ºF [*Test Method:* Closed Cup]
Evaporation rate	<=.05 [*Ref Std:* BUOAC=1]
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*

Vapor Pressure	<=3.7 mmHg [@ 68 ºF]
Vapor Density	*No Data Available*
Density	0.99 g/ml
Specific Gravity	0.99 [*Ref Std:* WATER=1]
Solubility In Water	*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*
Viscosity	1,000 - 1,200 centipoise
Volatile Organic Compounds	500 - 700 g/l [*Details:* As Packaged.]
Percent volatile	50 - 65 % weight

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.

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:
Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Ingestion:
Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

Additional Health Effects:

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

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

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

Ingredient	CAS No.	Class Description	Regulation
Ethylbenzene	100-41-4	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Naphthalene	91-20-3	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Naphthalene	91-20-3	Anticipated human carcinogen	National Toxicology Program Carcinogens

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE 2,000 - 5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE 20 - 50 mg/l
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
Butyl methacrylate-methyl methacrylate polymer	Dermal	Rabbit	LD50 > 3,000 mg/kg
Butyl methacrylate-methyl methacrylate polymer	Ingestion	Rat	LD50 > 5,000 mg/kg
Heavy aromatic solvent naphtha (Petroleum)	Dermal	Rabbit	LD50 > 2,000 mg/kg
Heavy aromatic solvent naphtha (Petroleum)	Ingestion	Rat	LD50 > 5,000 mg/kg
Pine oil	Dermal	Rabbit	LD50 > 2,000 mg/kg
Pine oil	Ingestion	Rat	LD50 > 2,000 mg/kg
Light aromatic solvent naphtha (Petroleum)	Dermal	Rabbit	LD50 > 2,000 mg/kg
Light aromatic solvent naphtha (Petroleum)	Inhalation-Vapor (4 hours)	Rat	LC50 > 5.2 mg/l
Light aromatic solvent naphtha (Petroleum)	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
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
2,6-Dimethyl-4-heptanone	Dermal	Rat	LD50 > 2,000 mg/kg
2,6-Dimethyl-4-heptanone	Inhalation-Vapor (4 hours)	Rat	LC50 > 5 mg/l
2,6-Dimethyl-4-heptanone	Ingestion	Rat	LD50 5,265 mg/kg
Vinyl polymer (New Jersey Trade Secret Registry# 04499600-5238P)	Dermal	Rabbit	LD50 > 8,000 mg/kg
Vinyl polymer (New Jersey Trade Secret Registry# 04499600-5238P)	Ingestion	Rat	LD50 > 8,000 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
Toluene	Dermal	Rat	LD50 12,000 mg/kg
Toluene	Inhalation-Vapor (4 hours)	Rat	LC50 30 mg/l
Toluene	Ingestion	Rat	LD50 5,550 mg/kg
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
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
N-Butyl methacrylate	Dermal	Rabbit	LD50 > 2,000 mg/kg
N-Butyl methacrylate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 27 mg/l
N-Butyl methacrylate	Ingestion	Rat	LD50 > 2,000 mg/kg
Oils, orange	Inhalation-Vapor (4 hours)	Mouse	LC50 > 3.14 mg/l
Oils, orange	Dermal	Rabbit	LD50 > 5,000 mg/kg
Oils, orange	Ingestion	Rat	LD50 4,400 mg/kg
Glycolic acid, butyl ester	Dermal		LD50 Not available
Glycolic acid, butyl ester	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.2 mg/l
Glycolic acid, butyl ester	Ingestion	Rat	LD50 4,595 mg/kg
D-limonene	Inhalation-Vapor (4 hours)	Mouse	LC50 > 3.14 mg/l
D-limonene	Dermal	Rabbit	LD50 > 5,000 mg/kg
D-limonene	Ingestion	Rat	LD50 4,400 mg/kg
Methyl methacrylate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Methyl methacrylate	Inhalation-Vapor (4 hours)	Rat	LC50 29 mg/l
Methyl methacrylate	Ingestion	Rat	LD50 7,900 mg/kg
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Dermal	Rabbit	LD50 > 23,400 mg/kg
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	Rat	LD50 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Butyl methacrylate-methyl methacrylate polymer	Rabbit	Minimal irritation
Heavy aromatic solvent naphtha (Petroleum)	Rabbit	Irritant
Pine oil	Not available	Irritant
Light aromatic solvent naphtha (Petroleum)	Rabbit	Irritant
1-Methoxy-2-propyl acetate	Rabbit	No significant irritation
Cyclohexanone	Rabbit	Irritant
2,6-Dimethyl-4-heptanone	Rabbit	Minimal irritation
Vinyl polymer (New Jersey Trade Secret Registry# 04499600-5238P)	Professional judgement	No significant irritation
1,2,4-Trimethylbenzene	Rabbit	Irritant
Toluene	Rabbit	Irritant
Naphthalene	Rabbit	Minimal irritation
Ethylbenzene	Rabbit	Mild irritant
N-Butyl methacrylate	Rabbit	Irritant
Oils, orange	Rabbit	Mild irritant
Glycolic acid, butyl ester	Rabbit	No significant irritation
D-limonene	Rabbit	Mild irritant
Methyl methacrylate	Human and animal	Mild irritant
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Rabbit	Minimal irritation

Serious Eye Damage/Irritation

Name	Species	Value
Butyl methacrylate-methyl methacrylate polymer	Rabbit	Moderate irritant
Heavy aromatic solvent naphtha (Petroleum)	Rabbit	Mild irritant
Pine oil	Rabbit	Severe irritant
Light aromatic solvent naphtha (Petroleum)	Rabbit	Mild irritant
1-Methoxy-2-propyl acetate	Rabbit	Mild irritant
Cyclohexanone	Rabbit	Severe irritant
2,6-Dimethyl-4-heptanone	Rabbit	No significant irritation
Vinyl polymer (New Jersey Trade Secret Registry# 04499600-5238P)	Professional judgement	No significant irritation
1,2,4-Trimethylbenzene	Rabbit	Mild irritant
Toluene	Rabbit	Moderate irritant
Naphthalene	Rabbit	No significant irritation
Ethylbenzene	Rabbit	Moderate irritant
N-Butyl methacrylate	Rabbit	Mild irritant
Oils, orange	Rabbit	Mild irritant
Glycolic acid, butyl ester	Rabbit	Corrosive
D-limonene	Rabbit	Mild irritant
Methyl methacrylate	Rabbit	Moderate irritant
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
Heavy aromatic solvent naphtha (Petroleum)	Guinea pig	Not sensitizing
Pine oil	Guinea pig	Not sensitizing
Light aromatic solvent naphtha (Petroleum)	Guinea pig	Not sensitizing
1-Methoxy-2-propyl acetate	Guinea pig	Not sensitizing
Cyclohexanone	Guinea pig	Not sensitizing
2,6-Dimethyl-4-heptanone	Guinea pig	Not sensitizing

1,2,4-Trimethylbenzene	Guinea pig	Not sensitizing
Toluene	Guinea pig	Not sensitizing
Ethylbenzene	Human	Not sensitizing
N-Butyl methacrylate	Guinea pig	Sensitizing
Oils, orange	Mouse	Sensitizing
Glycolic acid, butyl ester	Guinea pig	Not sensitizing
D-limonene	Mouse	Sensitizing
Methyl methacrylate	Human and animal	Sensitizing
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Guinea pig	Sensitizing

Respiratory Sensitization

Name	Species	Value
Methyl methacrylate	Human	Some positive data exist, but the data are not sufficient for classification

Germ Cell Mutagenicity

Name	Route	Value
Pine oil	In Vitro	Not mutagenic
Pine oil	In vivo	Not mutagenic
1-Methoxy-2-propyl acetate	In Vitro	Not mutagenic
Cyclohexanone	In vivo	Not mutagenic
Cyclohexanone	In Vitro	Some positive data exist, but the data are not sufficient for classification
2,6-Dimethyl-4-heptanone	In Vitro	Not mutagenic
1,2,4-Trimethylbenzene	In Vitro	Not mutagenic
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic
Ethylbenzene	In vivo	Not mutagenic
Ethylbenzene	In Vitro	Some positive data exist, but the data are not sufficient for classification
N-Butyl methacrylate	In Vitro	Not mutagenic
N-Butyl methacrylate	In vivo	Not mutagenic
Oils, orange	In Vitro	Not mutagenic
Oils, orange	In vivo	Not mutagenic
D-limonene	In Vitro	Not mutagenic
D-limonene	In vivo	Not mutagenic
Methyl methacrylate	In vivo	Not mutagenic
Methyl methacrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	In vivo	Not mutagenic
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Heavy aromatic solvent naphtha (Petroleum)	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Light aromatic solvent naphtha (Petroleum)	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification
Cyclohexanone	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Toluene	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Toluene	Inhalation	Mouse	Some positive data exist, but the data are not

			sufficient for classification
Naphthalene	Inhalation	Multiple animal species	Carcinogenic
Ethylbenzene	Inhalation	Multiple animal species	Carcinogenic
Oils, orange	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
D-limonene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Methyl methacrylate	Ingestion	Rat	Not carcinogenic
Methyl methacrylate	Inhalation	Human and animal	Not carcinogenic
(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
Pine oil	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 600 mg/kg/day	during gestation
Light aromatic solvent naphtha (Petroleum)	Inhalation	Not toxic to female reproduction	Rat	NOAEL 1,500 ppm	2 generation
Light aromatic solvent naphtha (Petroleum)	Inhalation	Not toxic to male reproduction	Rat	NOAEL 1,500 ppm	2 generation
Light aromatic solvent naphtha (Petroleum)	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 500 ppm	2 generation
1-Methoxy-2-propyl acetate	Ingestion	Not toxic to female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1-Methoxy-2-propyl acetate	Ingestion	Not toxic to male reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1-Methoxy-2-propyl acetate	Ingestion	Not toxic to development	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1-Methoxy-2-propyl acetate	Inhalation	Not toxic to development	Rat	NOAEL 21.6 mg/l	during organogenesis
Cyclohexanone	Inhalation	Not toxic to female reproduction	Rat	NOAEL 4 mg/l	2 generation
Cyclohexanone	Inhalation	Some positive male reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 2 mg/l	2 generation
Cyclohexanone	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Mouse	LOAEL 1,100 mg/kg/day	during organogenesis
Cyclohexanone	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 2 mg/l	2 generation
2,6-Dimethyl-4-heptanone	Ingestion	Not toxic to female reproduction	Rat	NOAEL 1,000 mg/kg	premating & during gestation
2,6-Dimethyl-4-heptanone	Ingestion	Not toxic to male reproduction	Rat	NOAEL 1,000 mg/kg/day	2 weeks
2,6-Dimethyl-4-heptanone	Ingestion	Not toxic to development	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1,2,4-Trimethylbenzene	Inhalation	Some positive female reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.2 mg/l	3 months

1,2,4-Trimethylbenzene	Inhalation	Some positive male reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-Trimethylbenzene	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 1.5 mg/l	during gestation
Toluene	Inhalation	Some positive female reproductive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	Some positive male reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 2.3 mg/l	1 generation
Toluene	Ingestion	Toxic to development	Rat	LOAEL 520 mg/kg/day	during gestation
Toluene	Inhalation	Toxic to development	Human	NOAEL Not available	poisoning and/or abuse
Ethylbenzene	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 4.3 mg/l	premating & during gestation
N-Butyl methacrylate	Inhalation	Not toxic to female reproduction	Rat	NOAEL 11 mg/l	28 days
N-Butyl methacrylate	Ingestion	Not toxic to male reproduction	Rat	NOAEL 1,000 mg/kg/day	44 days
N-Butyl methacrylate	Inhalation	Not toxic to male reproduction	Rat	NOAEL 11 mg/l	28 days
N-Butyl methacrylate	Ingestion	Some positive female reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 300 mg/kg/day	premating & during gestation
N-Butyl methacrylate	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Rabbit	NOAEL 300 mg/kg/day	during gestation
N-Butyl methacrylate	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 1.8 mg/l	during gestation
Oils, orange	Ingestion	Not toxic to male reproduction	Rat	NOAEL 150 mg/kg/day	103 weeks
Oils, orange	Ingestion	Some positive female reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 750 mg/kg/day	premating & during gestation
Oils, orange	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL 591 mg/kg/day	during organogenesis
Glycolic acid, butyl ester	Ingestion	Toxic to development	Rat	NOAEL 250 mg/kg/day	during organogenesis
D-limonene	Ingestion	Not toxic to male reproduction	Rat	NOAEL 150 mg/kg/day	103 weeks
D-limonene	Ingestion	Some positive female reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 750 mg/kg/day	premating & during gestation
D-limonene	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL 591 mg/kg/day	during organogenesis
Methyl methacrylate	Inhalation	Not toxic to male reproduction	Mouse	NOAEL 36.9 mg/l	
Methyl methacrylate	Inhalation	Not toxic to development	Rat	NOAEL 8.3 mg/l	during organogenesis
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	Not toxic to female reproduction	Rat	NOAEL 500 mg/kg/day	90 days
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	Not toxic to male reproduction	Rat	NOAEL 500 mg/kg/day	90 days
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 125 mg/kg/day	during gestation

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	Professional judgement	NOAEL Not available	
Heavy aromatic solvent naphtha (Petroleum)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Professional judgement	NOAEL Not available	
Pine oil	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Not available	NOAEL Not available	
Pine oil	Ingestion	central nervous system depression	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Light aromatic solvent naphtha (Petroleum)	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
Light aromatic solvent naphtha (Petroleum)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Professional judgement	NOAEL Not available	
Light aromatic solvent naphtha (Petroleum)	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	
Cyclohexanone	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Guinea pig	LOAEL 16.1 mg/l	6 hours
Cyclohexanone	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
2,6-Dimethyl-4-heptanone	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Rat	NOAEL Not available	
2,6-Dimethyl-4-heptanone	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	
2,6-Dimethyl-4-heptanone	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Rat	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	
Toluene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Toluene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Toluene	Inhalation	immune system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 0.004 mg/l	3 hours
Toluene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
Naphthalene	Ingestion	blood	Causes damage to organs	Human	NOAEL Not available	poisoning and/or abuse
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	
N-Butyl methacrylate	Inhalation	respiratory irritation	May cause respiratory irritation		NOAEL Not	

					available	
Oils, orange	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Glycolic acid, butyl ester	Inhalation	respiratory irritation	May cause respiratory irritation	Rat	NOAEL 0.4 mg/l	4 hours
D-limonene	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Methyl methacrylate	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	occupational exposure

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
1-Methoxy-2-propyl acetate	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 16.2 mg/l	9 days
1-Methoxy-2-propyl acetate	Inhalation	olfactory system	Some positive data exist, but the data are not sufficient for classification	Mouse	LOAEL 1.62 mg/l	9 days
1-Methoxy-2-propyl acetate	Inhalation	blood	All data are negative	Multiple animal species	NOAEL 16.2 mg/l	9 days
1-Methoxy-2-propyl acetate	Ingestion	endocrine system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,000 mg/kg/day	44 days
Cyclohexanone	Inhalation	liver | kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rabbit	NOAEL 0.76 mg/l	50 days
Cyclohexanone	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 4,800 mg/kg/day	90 days
2,6-Dimethyl-4-heptanone	Inhalation	liver | kidney and/or bladder | respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 5.4 mg/l	6 weeks
2,6-Dimethyl-4-heptanone	Inhalation	blood	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 5.3 mg/l	9 days
2,6-Dimethyl-4-heptanone	Inhalation	endocrine system | hematopoietic system	All data are negative	Rat	NOAEL 9.6 mg/l	6 weeks
2,6-Dimethyl-4-heptanone	Ingestion	heart | endocrine system | liver | nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 2,000 mg/kg/day	90 days
2,6-Dimethyl-4-heptanone	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 2,000 mg/kg	90 days
2,6-Dimethyl-4-heptanone	Ingestion	blood	All data are negative	Rat	NOAEL 4,000 mg/kg/day	3 weeks
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 | kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-Trimethylbenzene	Inhalation	heart | endocrine system | immune system	All data are negative	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-Trimethylbenzene	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for	Rat	NOAEL 600 mg/kg/day	14 days

			classification			
1,2,4-Trimethylbenzene	Ingestion	liver | immune system | kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,000 mg/kg/day	28 days
Toluene	Inhalation	auditory system | nervous system | eyes | olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 2.3 mg/l	15 months
Toluene	Inhalation	heart | liver | kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 11.3 mg/l	15 weeks
Toluene	Inhalation	endocrine system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.1 mg/l	4 weeks
Toluene	Inhalation	immune system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL Not available	20 days
Toluene	Inhalation	bone, teeth, nails, and/or hair	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 1.1 mg/l	8 weeks
Toluene	Inhalation	hematopoietic system | vascular system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Toluene	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 625 mg/kg/day	13 weeks
Toluene	Ingestion	heart	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	liver | kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 600 mg/kg/day	14 days
Toluene	Ingestion	endocrine system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 105 mg/kg/day	28 days
Toluene	Ingestion	immune system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 105 mg/kg/day	4 weeks
Naphthalene	Dermal	blood	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Naphthalene	Dermal	eyes	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Naphthalene	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL .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	Some positive data exist, but the data are not sufficient for classification	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
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	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 3.4 mg/l	28 days
Ethylbenzene	Inhalation	auditory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 2.4 mg/l	5 days
Ethylbenzene	Inhalation	endocrine system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 3.3 mg/l	103 weeks
Ethylbenzene	Inhalation	bone, teeth, nails, and/or hair | muscles	All data are negative	Multiple animal species	NOAEL 4.2 mg/l	90 days
Ethylbenzene	Inhalation	heart | immune system | respiratory system	All data are negative	Multiple animal species	NOAEL 3.3 mg/l	2 years
Ethylbenzene	Ingestion	liver | kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 680 mg/kg/day	6 months
N-Butyl methacrylate	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 11 mg/l	28 days
N-Butyl methacrylate	Inhalation	olfactory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.8 mg/l	28 days
N-Butyl methacrylate	Inhalation	heart | endocrine system | hematopoietic system | liver | nervous system | respiratory system	All data are negative	Rat	NOAEL 11 mg/l	28 days
N-Butyl methacrylate	Ingestion	olfactory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 60 mg/kg/day	90 days
N-Butyl methacrylate	Ingestion	endocrine system | hematopoietic system | liver | nervous system | kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 360 mg/kg/day	90 days
N-Butyl methacrylate	Ingestion	heart | immune system	All data are negative	Rat	NOAEL 360 mg/kg/day	90 days
Oils, orange	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 75 mg/kg/day	103 weeks
Oils, orange	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Oils, orange	Ingestion	heart | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | immune system | muscles | nervous system | respiratory system	All data are negative	Rat	NOAEL 600 mg/kg/day	103 weeks
Glycolic acid, butyl ester	Ingestion	blood | kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 100 mg/kg/day	90 days
D-limonene	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 75 mg/kg/day	103 weeks
D-limonene	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
D-limonene	Ingestion	heart | endocrine	All data are negative	Rat	NOAEL 600	103 weeks

		system | bone, teeth, nails, and/or hair | hematopoietic system | immune system | muscles | nervous system | respiratory system			mg/kg/day	
Methyl methacrylate	Dermal	peripheral nervous system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Methyl methacrylate	Inhalation	olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Methyl methacrylate	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL Not available	14 weeks
Methyl methacrylate	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 12.3 mg/l	14 weeks
Methyl methacrylate	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	olfactory system	May cause damage to organs though prolonged or repeated exposure	Rat	NOAEL 5 mg/kg/day	90 days
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	liver | kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 500 mg/kg/day	90 days
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	hematopoietic system	All data are negative	Rat	NOAEL 500 mg/kg/day	90 days
(3',4'-Epoxycyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	endocrine system | respiratory system	All data are negative	Rat	NOAEL 1,113 mg/kg/day	14 days

Aspiration Hazard

Name	Value
Heavy aromatic solvent naphtha (Petroleum)	Aspiration hazard
Light aromatic solvent naphtha (Petroleum)	Aspiration hazard
2,6-Dimethyl-4-heptanone	Some positive data exist, but the data are not sufficient for classification
1,2,4-Trimethylbenzene	Aspiration hazard
Toluene	Aspiration hazard
Ethylbenzene	Aspiration hazard
Oils, orange	Aspiration hazard
D-limonene	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.

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

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.

311/312 Hazard Categories:

Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

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
1,2,4-Trimethylbenzene	95-63-6	1 - 2
Naphthalene	91-20-3	< 0.3
Ethylbenzene	100-41-4	< 0.3

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.

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: 2 **Flammability:** 2 **Instability:** 1 **Special Hazards:** None

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

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