



Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier

3M™ Process Color 887I Brown

Product Identification Numbers

LE-N100-1037-2, 42-0019-9658-8, 75-0301-1091-2

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 Sensitizer: Category 1.

Reproductive Toxicity: Category 1B.

Carcinogenicity: Category 2.

2.2. Label elements

Signal word

Danger

Symbols

Flame | Exclamation mark | Health Hazard |

Pictograms



Hazard Statements

Flammable liquid and vapor.

Causes serious eye irritation.

May cause an allergic skin reaction.

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.

Wear protective gloves and eye/face protection.

Wash thoroughly after handling.

Contaminated work clothing must not be allowed out of the workplace.

Response:

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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 skin irritation or rash occurs: Get medical advice/attention.

Wash contaminated clothing before reuse.

IF exposed or concerned: Get medical advice/attention.

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

Storage:

Store in a well-ventilated place. Keep cool.

Store locked up.

Disposal:

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

2.3. Hazards not otherwise classified

None.

3% of the mixture consists of ingredients of unknown acute dermal toxicity.

3% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Dipropylene glycol methyl ether acetate	88917-22-0	30 - 60
Butyl methacrylate-methyl methacrylate polymer	25608-33-7	15 - 40 Trade Secret *
Cyclohexanone	108-94-1	7 - 13 Trade Secret *
1-Methoxy-2-propyl acetate	108-65-6	7 - 13
Vinyl polymer (New Jersey Trade Secret Registry # 04499600-5238P)	Trade Secret*	1 - 5
Organic pigment (NJ TSR # 04499600-5248P)	Trade Secret*	1 - 5
3-Dodecyl-1-(2,2,6,6-tetramethyl-4-piperidinyl) -2,5-pyrrolidinedione	79720-19-7	0.1 - 1.0
Titanium dioxide	13463-67-7	0.1 - 1.0 Trade Secret *
Toluene	108-88-3	< 0.3 Trade Secret *
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	2386-87-0	< 0.3 Trade Secret *
Ethylbenzene	100-41-4	< 0.3 Trade Secret *
N-Butyl methacrylate	97-88-1	< 0.2 Trade Secret *

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. 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

<u>Substance</u>	<u>Condition</u>
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. 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	
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)	
Titanium dioxide	13463-67-7	ACGIH	TWA:10 mg/m3	A4: Not class. as human carcin
Titanium dioxide	13463-67-7	CMRG	TWA(as respirable dust):5 mg/m3	
Titanium dioxide	13463-67-7	OSHA	TWA(as total dust):15 mg/m3	
Dipropylene glycol methyl ether acetate	88917-22-0	Manufacturer determined	TWA:100 ppm;STEL:150 ppm	Skin Notation
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.

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
Specific Physical Form:	Liquid
Odor, Color, Grade:	brown, sweet ether-like odor
Odor threshold	<i>No Data Available</i>
pH	<i>Not Applicable</i>
Melting point	<i>Not Applicable</i>
Boiling Point	>=284 °F
Flash Point	108 °F [<i>Test Method:</i> Tagliabue Closed Cup]
Evaporation rate	<=0.4 [<i>Ref Std:</i> BUOAC=1]
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	1.1 % volume
Flammable Limits(UEL)	8.6 % volume
Vapor Pressure	<=3.7 mmHg [<i>@ 20 °C</i>]
Vapor Density	<i>No Data Available</i>
Density	0.95 g/ml
Specific Gravity	0.95 [<i>Ref Std:</i> WATER=1]
Solubility In Water	<i>No Data Available</i>
Solubility- non-water	<i>No Data Available</i>
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Autoignition temperature	<i>No Data Available</i>
Decomposition temperature	<i>No Data Available</i>
Viscosity	1,000 - 1,200 centipoise [<i>Details:</i> DTM-300 (#3 @ 30 rpm)]
Volatile Organic Compounds	600 - 800 g/l [<i>Details:</i> As Packaged.]
Percent volatile	65.00 - 75.00 %
VOC Less H2O & Exempt Solvents	<i>No Data Available</i>

SECTION 10: Stability and reactivity

10.1. Reactivity

This material is considered to be non reactive under normal use conditions.

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 acids

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:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin Contact:

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.

Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Carcinogenicity:

Contains a chemical or chemicals which can cause cancer.

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>Class Description</u>	<u>Regulation</u>
Ethylbenzene	100-41-4	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Titanium dioxide	13463-67-7	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

Toxicological Data

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

the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE > 5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE > 50 mg/l
Overall product	Ingestion		No data available; calculated ATE > 5,000 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
Butyl methacrylate-methyl methacrylate polymer	Dermal	Rabbit	LD50 > 3,000 mg/kg
Butyl methacrylate-methyl methacrylate polymer	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 948 mg/kg
Cyclohexanone	Inhalation-Vapor (4 hours)	Rat	LC50 > 6.2 mg/l
Cyclohexanone	Ingestion	Rat	LD50 1,296 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
Organic pigment (NJ TSR # 04499600-5248P)	Ingestion	Rat	LD50 > 10,000 mg/kg
Titanium dioxide	Dermal	Rabbit	LD50 > 10,000 mg/kg
Titanium dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l
Titanium dioxide	Ingestion	Rat	LD50 > 10,000 mg/kg
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Dermal	Rabbit	LD50 > 23,400 mg/kg
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	Rat	LD50 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
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
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

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Dipropylene glycol methyl ether acetate	Rabbit	No significant irritation
Butyl methacrylate-methyl methacrylate polymer	Rabbit	Minimal irritation
1-Methoxy-2-propyl acetate	Rabbit	No significant irritation
Cyclohexanone	Rabbit	Mild irritant
Vinyl polymer (New Jersey Trade Secret Registry # 04499600-5238P)		No significant irritation
Titanium dioxide	Rabbit	No significant irritation
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Rabbit	Minimal irritation
Ethylbenzene	Rabbit	Mild irritant
Toluene	Rabbit	Irritant
N-Butyl methacrylate	Rabbit	Irritant

Serious Eye Damage/Irritation

Name	Species	Value
Dipropylene glycol methyl ether acetate	Rabbit	No significant irritation
Butyl methacrylate-methyl methacrylate polymer	Rabbit	Moderate irritant
1-Methoxy-2-propyl acetate	Rabbit	Mild irritant
Cyclohexanone	Rabbit	Severe irritant
Vinyl polymer (New Jersey Trade Secret Registry # 04499600-5238P)		No significant irritation
Titanium dioxide	Rabbit	No significant irritation
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Rabbit	Mild irritant
Ethylbenzene	Rabbit	Moderate irritant
Toluene	Rabbit	Moderate irritant
N-Butyl methacrylate	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
Dipropylene glycol methyl ether acetate	Guinea pig	Not sensitizing
1-Methoxy-2-propyl acetate	Guinea pig	Not sensitizing
Cyclohexanone	Guinea pig	Not sensitizing
Titanium dioxide	Human and animal	Not sensitizing
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Guinea pig	Sensitizing
Ethylbenzene	Human	Not sensitizing
Toluene	Guinea pig	Not sensitizing
N-Butyl methacrylate	Guinea pig	Sensitizing

Respiratory Sensitization

Name	Species	Value
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Germ Cell Mutagenicity

Name	Route	Value
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
Cyclohexanone	In vivo	Not mutagenic
Cyclohexanone	In Vitro	Some positive data exist, but the data are not sufficient for classification
Titanium dioxide	In Vitro	Not mutagenic
Titanium dioxide	In vivo	Not mutagenic
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	In vivo	Not mutagenic
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Ethylbenzene	In vivo	Not mutagenic
Ethylbenzene	In Vitro	Some positive data exist, but the data are not sufficient for classification
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic
N-Butyl methacrylate	In Vitro	Not mutagenic
N-Butyl methacrylate	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
Titanium dioxide	Ingestion	Multiple animal species	Not carcinogenic

Titanium dioxide	Inhalation	Rat	Carcinogenic
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Dermal	Mouse	Not carcinogenic
Ethylbenzene	Inhalation	Multiple animal species	Carcinogenic
Toluene	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Toluene	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Dipropylene glycol methyl ether acetate	Ingestion	Not toxic to male reproduction	Rat	NOAEL 1,000 mg/kg/day	4 weeks
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
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	Not toxic to female reproduction	Rat	NOAEL 500 mg/kg/day	90 days
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	Not toxic to male reproduction	Rat	NOAEL 500 mg/kg/day	90 days
(3',4'-Epoxy cyclohexylmethyl) 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
Ethylbenzene	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 4.3 mg/l	premating & 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
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	44 days

				mg/kg/day	
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

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
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	
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	
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
N-Butyl methacrylate	Inhalation	respiratory irritation	May cause respiratory irritation		NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Dipropylene glycol methyl ether acetate	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,000 mg/kg/day	4 weeks
Dipropylene glycol methyl ether acetate	Ingestion	heart endocrine system hematopoietic system kidney and/or bladder	All data are negative	Rat	NOAEL 1,000 mg/kg/day	4 weeks
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	Rat	NOAEL 1,000	44 days

			classification		mg/kg/day	
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
Titanium dioxide	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.010 mg/l	2 years
Titanium dioxide	Inhalation	pulmonary fibrosis	All data are negative	Human	NOAEL Not available	occupational exposure
(3',4'-Epoxy)cyclohexylmethyl 3,4-epoxycyclohexanecarboxylate	Ingestion	olfactory system	May cause damage to organs through prolonged or repeated exposure	Rat	NOAEL 5 mg/kg/day	90 days
(3',4'-Epoxy)cyclohexylmethyl 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'-Epoxy)cyclohexylmethyl 3,4-epoxycyclohexanecarboxylate	Ingestion	hematopoietic system	All data are negative	Rat	NOAEL 500 mg/kg/day	90 days
(3',4'-Epoxy)cyclohexylmethyl 3,4-epoxycyclohexanecarboxylate	Ingestion	endocrine system respiratory system	All data are negative	Rat	NOAEL 1,113 mg/kg/day	14 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
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	Rat	NOAEL 1.1 mg/l	4 weeks

			classification			
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
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

Aspiration Hazard

Name	Value
Ethylbenzene	Aspiration hazard
Toluene	Aspiration hazard

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

SECTION 12: Ecological information**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. As a disposal alternative, utilize an acceptable permitted waste disposal facility. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

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):

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
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:** 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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