



Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier

3M(TM) Screen Printing Ink 1998 Retarder Half-Tone Base

Product Identification Numbers

75-3469-4443-4
7000055983

1.2. Recommended use and restrictions on use

Recommended use

Ink

1.3. Supplier's details

MANUFACTURER: 3M
DIVISION: Commercial Solutions 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 4.
Serious Eye Damage/Irritation: Category 1.
Skin Sensitizer: Category 1A.
Reproductive Toxicity: Category 1B.
Carcinogenicity: Category 2.

2.2. Label elements

Signal word

Danger

Symbols

Corrosion | Exclamation mark | Health Hazard |

Pictograms

**Hazard Statements**

Combustible liquid.

Causes serious eye damage.

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.

Avoid breathing dust/fume/gas/mist/vapors/spray.

Wear protective gloves and eye/face protection.

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

Response:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF ON SKIN: Wash with plenty of soap and water.

Immediately call a POISON CENTER or doctor/physician.

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

Wash contaminated clothing 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:

Keep container tightly closed.

Keep cool.

Store locked up in a well-ventilated place.

Disposal:

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

15% of the mixture consists of ingredients of unknown acute oral toxicity.

15% of the mixture consists of ingredients of unknown acute dermal toxicity.

30% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
2-butoxyethyl acetate	112-07-2	45 - 55 Trade Secret *
GAMMA-BUTYROLACTONE	96-48-0	10 - 20 Trade Secret *
VINYL ACETATE-VINYL ALCOHOL-VINYL CHLORIDE POLYMER	25086-48-0	5 - 15 Trade Secret *
ACRYLIC POLYMER	None	5 - 10 Trade Secret *

Synthetic amorphous silica, fumed, crystalline-free	112945-52-5	3 - 7 Trade Secret *
Polymeric Plasticizer	Trade Secret*	3 - 7 Trade Secret *
EPOXIDIZED SOYBEAN OIL	8013-07-8	1 - 5 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	< 1 Trade Secret *
Polymeric Benzotriazole	104810-47-1	< 1 Trade Secret *
2-Butoxyethanol	111-76-2	< 0.5 Trade Secret *
Methyl Methacrylate	80-62-6	< 0.5 Trade Secret *
Bis(1,2,2,6,6-pentamethyl-4-piperidiny) sebacate	41556-26-7	< 0.25 Trade Secret *
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	64742-94-5	< 0.25 Trade Secret *
Toluene	108-88-3	< 0.25 Trade Secret *
ZINC 2-ETHYLHEXANOATE	136-53-8	< 0.25 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 for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

If Swallowed:

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

4.2. Most important symptoms and effects, both acute and delayed

Allergic skin reaction (redness, swelling, blistering, and itching). Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of vision).

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

Carbon monoxide
Carbon dioxide

Condition

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

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Contain spill. Cover spill area with a fire extinguishing foam that is resistant to polar solvents. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible using non-sparking tools. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with detergent and water. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. 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.) Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep cool. Keep container tightly closed. Protect from sunlight. Store away from heat. Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits**

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

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Toluene	108-88-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcin, Ototoxicant

Toluene	108-88-3	OSHA	TWA:200 ppm;CEIL:300 ppm	
2-Butoxyethanol	111-76-2	ACGIH	TWA:20 ppm	A3: Confirmed animal carcin.
2-Butoxyethanol	111-76-2	OSHA	TWA:240 mg/m3(50 ppm)	SKIN
2-butoxyethyl acetate	112-07-2	ACGIH	TWA:20 ppm	A3: Confirmed animal carcin.
SILICA, AMORPHOUS	112945-52-5	OSHA	TWA:20 millions of particles/cu. ft.;TWA concentration:0.8 mg/m3	
Methyl Methacrylate	80-62-6	ACGIH	TWA:50 ppm;STEL:100 ppm	A4: Not class. as human carcin, Dermal Sensitizer
Methyl Methacrylate	80-62-6	OSHA	TWA:410 mg/m3(100 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:

Full Face Shield

Indirect Vented Goggles

Skin/hand protection

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

Gloves made from the following material(s) are recommended: Polymer laminate

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

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic 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

Appearance

Physical state

Liquid

Color

Colorless

Specific Physical Form:

Liquid

Odor

Solvent

Odor threshold

No Data Available

pH

Not Applicable

Melting point

Not Applicable

Boiling Point

>=367 °F

Flash Point

160 °F [Test Method:Closed Cup]

Evaporation rate

No Data Available

Flammability (solid, gas)

Not Applicable

Flammable Limits(LEL)

0.5 %

Flammable Limits(UEL)

6.9 %

Vapor Pressure

<=0.26 mmHg [@ 20 °C]

Vapor Density

> 1 [Ref Std: AIR=1]

Density

1.1 g/ml

Specific Gravity

1.1 [Ref Std: WATER=1]

Solubility in Water

Moderate

Solubility- non-water

No Data Available

Partition coefficient: n-octanol/ water

No Data Available

Autoignition temperature

> 640 °F

Decomposition temperature

No Data Available

Viscosity

11,000 - 13,000 centipoise [Test Method:Tested per ASTM protocol]

Volatile Organic Compounds

712 g/l [Details:As formulated]

Volatile Organic Compounds

748 g/l [Details:After manufacturing thinning]

Percent volatile

60.0 - 70.0 %

VOC Less H2O & Exempt Solvents

712 g/l [Details:As formulated]

VOC Less H2O & Exempt Solvents

748 g/l [Details:After manufacturing thinning]

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

Heat

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.

May cause additional health effects (see below).

Skin Contact:

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.

May cause additional health effects (see below).

Additional Health Effects:

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.

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 >20 - =50 mg/l
Overall product	Ingestion		No data available; calculated ATE >2,000 - =5,000 mg/kg
2-butoxyethyl acetate	Dermal	Rabbit	LD50 > 4,766 mg/kg
2-butoxyethyl acetate	Inhalation-Vapor (4 hours)	Rat	LC50 > 2.66 mg/l

2-butoxyethyl acetate	Ingestion	Rat	LD50 1,880 mg/kg
GAMMA-BUTYROLACTONE	Dermal	Rabbit	LD50 > 5,000 mg/kg
GAMMA-BUTYROLACTONE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.1 mg/l
GAMMA-BUTYROLACTONE	Ingestion	Rat	LD50 1,920 mg/kg
VINYL ACETATE-VINYL ALCOHOL-VINYL CHLORIDE POLYMER	Dermal	Rabbit	LD50 > 8,000 mg/kg
VINYL ACETATE-VINYL ALCOHOL-VINYL CHLORIDE POLYMER	Ingestion	Rat	LD50 > 8,000 mg/kg
Synthetic amorphous silica, fumed, crystalline-free	Dermal	Rabbit	LD50 > 5,000 mg/kg
Synthetic amorphous silica, fumed, crystalline-free	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Synthetic amorphous silica, fumed, crystalline-free	Ingestion	Rat	LD50 > 5,110 mg/kg
EPOXIDIZED SOYBEAN OIL	Dermal	Rabbit	LD50 > 20,000 mg/kg
EPOXIDIZED SOYBEAN OIL	Ingestion	Rat	LD50 > 5,000 mg/kg
Poly(oxy-1,2-ethanediyl), .alpha.-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-.omega.-hydroxy-	Dermal	Rat	LD50 > 2,000 mg/kg
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-Butoxyethanol	Dermal	Guinea pig	LD50 > 2,000 mg/kg
2-Butoxyethanol	Inhalation-Vapor (4 hours)	Guinea pig	LC50 > 2.6 mg/l
2-Butoxyethanol	Ingestion	Guinea pig	LD50 1,200 mg/kg
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation-Vapor		LC50 estimated to be 20 - 50 mg/l
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Dermal	Rabbit	LD50 > 2,000 mg/kg
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Ingestion	Rat	LD50 > 5,000 mg/kg
Bis(1,2,2,6,6-pentamethyl-4-piperidiny)l) sebacate	Dermal	Professional judgement	LD50 estimated to be 2,000 - 5,000 mg/kg
Bis(1,2,2,6,6-pentamethyl-4-piperidiny)l) sebacate	Ingestion	Rat	LD50 3,125 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
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
ZINC 2-ETHYLHEXANOATE	Dermal		LD50 estimated to be > 5,000 mg/kg
ZINC 2-ETHYLHEXANOATE	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
2-butoxyethyl acetate	Rabbit	Minimal irritation

GAMMA-BUTYROLACTONE	Rabbit	No significant irritation
VINYL ACETATE-VINYL ALCOHOL-VINYL CHLORIDE POLYMER	Professional judgement	No significant irritation
Synthetic amorphous silica, fumed, crystalline-free	Rabbit	No significant irritation
EPOXIDIZED SOYBEAN OIL	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-Butoxyethanol	Rabbit	Irritant
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Rabbit	Minimal irritation
Bis(1,2,2,6,6-pentamethyl-4-piperidiny)l) sebacate	Rabbit	Minimal irritation
Toluene	Rabbit	Irritant
Methyl Methacrylate	Human and animal	Mild irritant
ZINC 2-ETHYLHEXANOATE	Rabbit	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
2-butoxyethyl acetate	Rabbit	Mild irritant
GAMMA-BUTYROLACTONE	Rabbit	Corrosive
VINYL ACETATE-VINYL ALCOHOL-VINYL CHLORIDE POLYMER	Professional judgement	No significant irritation
Synthetic amorphous silica, fumed, crystalline-free	Rabbit	No significant irritation
EPOXIDIZED SOYBEAN OIL	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-Butoxyethanol	Rabbit	Severe irritant
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Rabbit	Mild irritant
Bis(1,2,2,6,6-pentamethyl-4-piperidiny)l) sebacate	Rabbit	Mild irritant
Toluene	Rabbit	Moderate irritant
Methyl Methacrylate	Rabbit	Moderate irritant
ZINC 2-ETHYLHEXANOATE	Rabbit	Severe irritant

Skin Sensitization

Name	Species	Value
2-butoxyethyl acetate	Guinea pig	Not classified
Synthetic amorphous silica, fumed, crystalline-free	Human and animal	Not classified
EPOXIDIZED SOYBEAN OIL	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-Butoxyethanol	Guinea pig	Not classified
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Guinea pig	Not classified
Bis(1,2,2,6,6-pentamethyl-4-piperidiny)l) sebacate	Guinea pig	Sensitizing
Toluene	Guinea pig	Not classified
Methyl Methacrylate	Human and animal	Sensitizing

Respiratory Sensitization

Name	Species	Value
Methyl Methacrylate	Human	Not classified

Germ Cell Mutagenicity

Name	Route	Value
Synthetic amorphous silica, fumed, crystalline-free	In Vitro	Not mutagenic
EPOXIDIZED SOYBEAN OIL	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-Butoxyethanol	In Vitro	Some positive data exist, but the data are not sufficient for classification
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	In Vitro	Not mutagenic
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	In vivo	Not mutagenic
Bis(1,2,2,6,6-pentamethyl-4-piperidiny)l) sebacate	In vivo	Not mutagenic
Bis(1,2,2,6,6-pentamethyl-4-piperidiny)l) sebacate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Toluene	In Vitro	Not mutagenic
Toluene	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

Carcinogenicity

Name	Route	Species	Value
Synthetic amorphous silica, fumed, crystalline-free	Not Specified	Mouse	Some positive data exist, but the data are not sufficient for classification
EPOXIDIZED SOYBEAN OIL	Ingestion	Rat	Not carcinogenic
2-Butoxyethanol	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Not Specified	Not applicable	Carcinogenic
Toluene	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Toluene	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification
Methyl Methacrylate	Ingestion	Rat	Not carcinogenic
Methyl Methacrylate	Inhalation	Human and animal	Not carcinogenic

Reproductive Toxicity**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
Synthetic amorphous silica, fumed, crystalline-free	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Synthetic amorphous silica, fumed, crystalline-free	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Synthetic amorphous silica, fumed, crystalline-free	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
EPOXIDIZED SOYBEAN OIL	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000	1 generation

				mg/kg/day	
EPOXIDIZED SOYBEAN OIL	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
EPOXIDIZED SOYBEAN OIL	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	1 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 mg/kg/day	115 days
Polymeric Benzotriazole	Ingestion	Not classified for development	Rat	NOAEL 2 mg/kg/day	premating into lactation
2-Butoxyethanol	Dermal	Not classified for development	Rat	NOAEL 1,760 mg/kg/day	during gestation
2-Butoxyethanol	Ingestion	Not classified for development	Rat	NOAEL 100 mg/kg/day	during organogenesis
2-Butoxyethanol	Inhalation	Not classified for development	Multiple animal species	NOAEL 0.48 mg/l	during organogenesis
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Not Specified	Not classified for female reproduction	Rat	NOAEL Not available	2 generation
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Not Specified	Not classified for male reproduction	Rat	NOAEL Not available	2 generation
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Not Specified	Not classified for development	Rat	NOAEL Not available	2 generation
Bis(1,2,2,6,6-pentamethyl-4-piperidiny) sebacate	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,493 mg/kg/day	29 days
Bis(1,2,2,6,6-pentamethyl-4-piperidiny) sebacate	Ingestion	Not classified for development	Rat	NOAEL 209 mg/kg/day	premating into lactation
Bis(1,2,2,6,6-pentamethyl-4-piperidiny) sebacate	Ingestion	Toxic to female reproduction	Rat	NOAEL 804 mg/kg/day	premating into lactation
Toluene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	Not classified for male reproduction	Rat	NOAEL 2.3 mg/l	1 generation
Toluene	Ingestion	Toxic to development	Rat	LOAEL 520 mg/kg/day	during gestation
Toluene	Inhalation	Toxic to development	Human	NOAEL Not available	poisoning and/or abuse
Methyl Methacrylate	Inhalation	Not classified for male reproduction	Mouse	NOAEL 36.9 mg/l	
Methyl Methacrylate	Inhalation	Not classified for development	Rat	NOAEL 8.3 mg/l	during organogenesis
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

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
2-butoxyethyl acetate	Dermal	blood	Not classified	similar compounds	NOAEL Not available	
2-butoxyethyl acetate	Inhalation	central nervous system depression	Some positive data exist, but the data are not sufficient for classification	similar compounds	NOAEL Not available	
2-butoxyethyl acetate	Inhalation	blood	Not classified	similar compounds	NOAEL Not available	
2-butoxyethyl acetate	Ingestion	blood	Not classified	similar compounds	NOAEL Not available	
GAMMA-BUTYROLACTONE	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Rat	NOAEL Not available	4 hours
GAMMA-BUTYROLACTONE	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
2-Butoxyethanol	Dermal	endocrine system	Not classified	Rabbit	NOAEL 902 mg/kg	6 hours
2-Butoxyethanol	Dermal	liver	Not classified	Rabbit	LOAEL 72 mg/kg	not available
2-Butoxyethanol	Dermal	kidney and/or bladder	Not classified	Rabbit	LOAEL 451 mg/kg	6 hours
2-Butoxyethanol	Dermal	blood	Not classified	Multiple animal species	NOAEL Not available	
2-Butoxyethanol	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
2-Butoxyethanol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
2-Butoxyethanol	Inhalation	blood	Not classified	Multiple animal species	NOAEL Not available	
2-Butoxyethanol	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
2-Butoxyethanol	Ingestion	blood	Not classified	Multiple animal species	NOAEL Not available	
2-Butoxyethanol	Ingestion	kidney and/or bladder	Not classified	Human	NOAEL Not available	poisoning and/or abuse
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Toluene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Toluene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL 0.004 mg/l	3 hours
Toluene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
Methyl Methacrylate	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	occupational exposure
ZINC 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
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						Duration
2-butoxyethyl acetate	Dermal	blood	Not classified	similar compounds	NOAEL Not available	not available
2-butoxyethyl acetate	Inhalation	blood	Not classified	similar compounds	NOAEL Not available	6 months
2-butoxyethyl acetate	Ingestion	blood	Not classified	similar compounds	NOAEL Not available	13 weeks
Synthetic amorphous silica, fumed, crystalline-free	Inhalation	respiratory system silicosis	Not classified	Human	NOAEL Not available	occupational exposure
EPOXIDIZED SOYBEAN OIL	Ingestion	liver kidney and/or bladder	Not classified	Rat	NOAEL 1,250 mg/kg/day	2 years
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 not available	28 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	liver	Not classified	Rat	NOAEL 10 mg/kg/day	28 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
Polymeric Benzotriazole	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL not available	28 days
Polymeric Benzotriazole	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 50 mg/kg/day	90 days
Polymeric Benzotriazole	Ingestion	liver	Not classified	Rat	NOAEL 10 mg/kg/day	28 days
Polymeric Benzotriazole	Ingestion	eyes	Not classified	Rat	NOAEL 50 mg/kg/day	90 days
2-Butoxyethanol	Dermal	blood	Not classified	Multiple animal species	NOAEL Not available	not available
2-Butoxyethanol	Dermal	endocrine system	Not classified	Rabbit	NOAEL 150 mg/kg/day	90 days
2-Butoxyethanol	Inhalation	liver	Not classified	Rat	NOAEL 2.4 mg/l	14 weeks
2-Butoxyethanol	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 0.15 mg/l	14 weeks
2-Butoxyethanol	Inhalation	blood	Not classified	Rat	LOAEL 0.15 mg/l	6 months
2-Butoxyethanol	Inhalation	endocrine system	Not classified	Dog	LOAEL 1.9 mg/l	8 days
2-Butoxyethanol	Ingestion	blood	Not classified	Rat	LOAEL 69 mg/kg/day	13 weeks
2-Butoxyethanol	Ingestion	kidney and/or	Not classified	Multiple	NOAEL Not	not available

		bladder		animal species	available	
Bis(1,2,2,6,6-pentamethyl-4-piperidinyl) sebacate	Ingestion	eyes	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 300 mg/kg/day	28 days
Bis(1,2,2,6,6-pentamethyl-4-piperidinyl) sebacate	Ingestion	gastrointestinal tract liver immune system heart endocrine system hematopoietic system nervous system kidney and/or bladder	Not classified	Rat	NOAEL 1,493 mg/kg/day	29 days
Toluene	Inhalation	auditory system eyes olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	nervous system	May cause damage to organs though prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 2.3 mg/l	15 months
Toluene	Inhalation	heart liver kidney and/or bladder	Not classified	Rat	NOAEL 11.3 mg/l	15 weeks
Toluene	Inhalation	endocrine system	Not classified	Rat	NOAEL 1.1 mg/l	4 weeks
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL Not available	20 days
Toluene	Inhalation	bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 1.1 mg/l	8 weeks
Toluene	Inhalation	hematopoietic system vascular system	Not classified	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	gastrointestinal tract	Not classified	Multiple animal species	NOAEL 11.3 mg/l	15 weeks
Toluene	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 625 mg/kg/day	13 weeks
Toluene	Ingestion	heart	Not classified	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	liver kidney and/or bladder	Not classified	Multiple animal species	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	hematopoietic system	Not classified	Mouse	NOAEL 600 mg/kg/day	14 days
Toluene	Ingestion	endocrine system	Not classified	Mouse	NOAEL 105 mg/kg/day	28 days
Toluene	Ingestion	immune system	Not classified	Mouse	NOAEL 105 mg/kg/day	4 weeks
Methyl Methacrylate	Dermal	peripheral nervous system	Not classified	Human	NOAEL Not available	occupational exposure
Methyl Methacrylate	Inhalation	olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Methyl Methacrylate	Inhalation	kidney and/or bladder	Not classified	Multiple animal species	NOAEL Not available	14 weeks
Methyl Methacrylate	Inhalation	liver	Not classified	Mouse	NOAEL 12.3 mg/l	14 weeks
Methyl Methacrylate	Inhalation	respiratory system	Not classified	Human	NOAEL Not available	occupational exposure

Aspiration Hazard

Name	Value
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Aspiration hazard
Toluene	Aspiration hazard

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

SECTION 12: Ecological information

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. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. 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): 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

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

2-butoxyethyl acetate (GLYCOL ETHERS)
2-Butoxyethanol (GLYCOL ETHERS)

112-07-2
111-76-2

Trade Secret 45 - 55
Trade Secret < 0.5

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. All required components of this product are listed on the active portion of the TSCA Inventory.

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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Reason for Reissue

Conversion to GHS format SDS.
Product or material is now obsolete

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