Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier
3M™ Piezo Inkjet Ink 8903UV v3, Blue

Product Identification Numbers
75-0002-1650-9
7100320164

1.2. Recommended use and restrictions on use

Recommended use
Ink

1.3. Supplier's details

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

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

SECTION 2: Hazard identification

2.1. Hazard classification
Acute Toxicity (oral): Category 4.
Acute Toxicity (inhalation): Category 4.
Skin Corrosion/Irritation: Category 2.
Serious Eye Damage/Irritation: Category 1.
Skin Sensitizer: Category 1.
Carcinogenicity: Category 1B.
Reproductive Toxicity: Category 1B.
Specific Target Organ Toxicity (repeated exposure): Category 2.
Specific Target Organ Toxicity (single exposure): Category 3.

2.2. Label elements
Signal word
Danger

Symbols
Corrosion |Exclamation mark |Health Hazard |

Pictograms

Hazard Statements

Harmful if swallowed or if inhaled.
Causes skin irritation.
Causes serious eye damage.
May cause an allergic skin reaction.
May cause cancer.
May damage fertility or the unborn child.
May cause respiratory irritation.

May cause damage to organs through prolonged or repeated exposure: gastrointestinal tract | immune system | kidney/urinary tract | skin.

Precautionary statements

Prevention:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe vapors.
Wash exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves, eye protection, face protection, and if needed, respiratory protection (see SDS Section 8).

Response:
IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Immediately call a POISON CENTER or doctor.
Get medical attention if you feel unwell.
Rinse mouth.
If skin irritation or rash occurs: Get medical attention.
Take off contaminated clothing and wash it before reuse.

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

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

2.3. Hazards not otherwise classified
May cause chemical gastrointestinal burns.

23% of the mixture consists of ingredients of unknown acute oral toxicity.
47% of the mixture consists of ingredients of unknown acute dermal toxicity.
98% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Isobornyl Acrylate	5888-33-5	< 37
ISOOCTYL ACRYLATE	29590-42-9	10 - 30 Trade Secret *
TETRAHYDROFURFURYL ACRYLATE	2399-48-6	10 - 30 Trade Secret *
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	67906-98-3	5 - 10 Trade Secret *
Pigment Blue 15	147-14-8	< 9
1,6-hexanediol diacrylate	13048-33-4	3 - 7 Trade Secret *
2-Propenoic acid, 2-hydroxyethyl ester, polymer with 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane, 2-oxepanone and 2,2'-oxybis[ethanol]	72162-39-1	1 - 7 Trade Secret *
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	1 - 5 Trade Secret *
BENZOPHENONE	119-61-9	1 - 5 Trade Secret *
Cresol	Trade Secret*	< 5
Polymer	Trade Secret*	< 5
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	129757-67-1	< 3
N,N'-BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)-1,6-HEXANEDIAMINE, POLYMERS W/MORPHOLINE-2,4,6-TRICHLORO-1,3,5-TRIAZINE RCTN PROD, METHYLATED	193098-40-7	< 2
CAMPHENE	79-92-5	< 0.3

*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. Do not induce vomiting. Get immediate medical attention.

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

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

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

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam 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
Carbon monoxide	During Combustion
Carbon dioxide	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. 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. Use personal protective equipment based on the results of an exposure assessment. Refer to Section 8 for PPE recommendations. If anticipated exposure resulting from an accidental release exceeds the protective capabilities of the PPE listed in Section 8, or are unknown, select PPE that offers an appropriate level of protection. Consider the physical and chemical hazards of the material when doing so. Examples of PPE ensembles for emergency response could include wearing bunker gear for a release of flammable material; wearing chemical protective clothing if the spilled material is a corrosive, a sensitizer, a significant dermal irritant, or can be absorbed through the skin; or donning a positive pressure supplied-air respirator for chemicals with inhalation hazards. For information regarding physical and health hazards, refer to sections 2 and 11 of the SDS.

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

6.3. Methods and material for containment and cleaning up
Contain spill. 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. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
For industrial/occupational use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. 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 container tightly closed. 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
BENZOPHENONE	119-61-9	AIHA	TWA:0.5 mg/m3	
1,6-hexanediol diacrylate	13048-33-4	AIHA	TWA:1 mg/m3(0.11 ppm)	Dermal Sensitizer
Copper, dusts and mists, as Cu	147-14-8	ACGIH	TWA(as Cu, fume):0.2 mg/m3;TWA(as Cu dust or mist):1 mg/m3	
TETRAHYDROFURFURYL ACRYLATE	2399-48-6	Manufacturer determined	TWA:0.1 ppm(0.64 mg/m3);STEL:0.3 ppm(1.91 mg/m3)	Dermal Sensitizer
ISOOCTYL ACRYLATE	29590-42-9	AIHA	TWA:37.5 mg/m3(5 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 (e.g., spraying, high splash potential, etc.), then use of a protective apron may be necessary. See recommended glove material(s) for determining appropriate apron material(s). If a glove material is not available as an apron, polymer laminate is a suitable option.

Respiratory protection

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

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Specific Physical Form:	Liquid
Color	Blue
Odor	Slight Acrylate
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*Not Applicable*
Boiling point/Initial boiling point/Boiling range	> 93.3 ºC
Flash Point	> 93.3 ºC [*Test Method:*Closed Cup]
Evaporation rate	*No Data Available*
Flammability	Not Applicable
Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*
Vapor Pressure	< 10 mmHg [@ 20 ºC]
Relative Vapor Density	> 1 [*Ref Std:*AIR=1]
Density	1.04 g/ml
Relative Density	1.04 [*Ref Std:*WATER=1]
Water solubility	Negligible
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*No Data Available*
Kinematic Viscosity	*No Data Available*
Volatile Organic Compounds	*No Data Available*
Percent volatile	*No Data Available*
VOC Less H2O & Exempt Solvents	*No Data Available*

Particle Characteristics	*Not Applicable*

SECTION 10: Stability and reactivity

10.1. Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization may occur. (Upon depletion of inhibitor or exposure to heat)

10.4. Conditions to avoid
Light

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:
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:
Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching. May cause additional health effects (see below).

Eye Contact:
Corrosive (Eye Burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Ingestion:
Harmful if swallowed. Gastrointestinal Corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain; nausea; vomiting; and diarrhea; blood in the feces and/or vomitus may also be seen. May cause additional health effects (see below).

Additional Health Effects:

Prolonged or repeated exposure may cause target organ effects:
Immunological Effects: Signs/symptoms may include alterations in the number of circulating immune cells, allergic skin and /or respiratory reaction, and changes in immune function. Gastrointestinal Effects: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea. Kidney/Bladder Effects: Signs/symptoms may include changes in urine production, abdominal or lower back pain, increased protein in urine, increased blood urea nitrogen (BUN), blood in urine, and painful urination. Dermal Effects: Signs/symptoms may include redness, itching, acne, or bumps on the skin.

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
Benzophenone	119-61-9	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-Dust/Mist(4 hr)		No data available; calculated ATE >1 - =5 mg/l
Overall product	Ingestion		No data available; calculated ATE >300 - =2,000 mg/kg
Isobornyl Acrylate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Isobornyl Acrylate	Ingestion	Rat	LD50 4,350 mg/kg
TETRAHYDROFURFURYL ACRYLATE	Ingestion	Rat	LD50 882 mg/kg
ISOOCTYL ACRYLATE	Dermal	Rabbit	LD50 > 2,000 mg/kg
ISOOCTYL ACRYLATE	Ingestion	Rat	LD50 > 5,000 mg/kg
1,6-hexanediol diacrylate	Dermal	Rabbit	LD50 3,636 mg/kg
1,6-hexanediol diacrylate	Ingestion	Rat	LD50 > 5,000 mg/kg
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Ingestion	Rat	LD50 > 5,000 mg/kg
BENZOPHENONE	Dermal	Rabbit	LD50 3,535 mg/kg
BENZOPHENONE	Ingestion	Rat	LD50 1,900 mg/kg
Pigment Blue 15	Dermal		LD50 estimated to be > 5,000 mg/kg
Pigment Blue 15	Ingestion	Rat	LD50 10,000 mg/kg
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	Dermal	Rat	LD50 > 2,000 mg/kg
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	Ingestion	Rat	LD50 > 2,000 mg/kg
N,N'-BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)-1,6-HEXANEDIAMINE, POLYMERS W/MORPHOLINE-2,4,6-TRICHLORO-1,3,5-TRIAZINE RCTN PROD, METHYLATED	Dermal	Rat	LD50 > 2,000 mg/kg
N,N'-BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)-1,6-HEXANEDIAMINE, POLYMERS W/MORPHOLINE-2,4,6-TRICHLORO-1,3,5-TRIAZINE RCTN PROD, METHYLATED	Ingestion	Rat	LD50 >500, <2,000 mg/kg
N,N'-BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)-1,6-HEXANEDIAMINE, POLYMERS W/MORPHOLINE-2,4,6-TRICHLORO-1,3,5-TRIAZINE RCTN PROD, METHYLATED	Inhalation-Dust/Mist (4 hours)	similar compounds	LC50 2.8 mg/l
CAMPHENE	Dermal	Rabbit	LD50 > 2,500 mg/kg
CAMPHENE	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Isobornyl Acrylate	Rabbit	Minimal irritation
TETRAHYDROFURFURYL ACRYLATE	Rabbit	Corrosive
ISOOCTYL ACRYLATE	In vitro data	No significant irritation
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	similar compounds	Irritant
1,6-hexanediol diacrylate	Rabbit	Irritant
2-Propenoic acid, 2-hydroxyethyl ester, polymer with 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane, 2-oxepanone and 2,2'-oxybis[ethanol]	similar compounds	Irritant
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Rabbit	No significant irritation
BENZOPHENONE	Rabbit	No significant irritation
Pigment Blue 15	Rabbit	No significant irritation
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	Rabbit	No significant irritation
N,N'-BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)-1,6-HEXANEDIAMINE, POLYMERS W/MORPHOLINE-2,4,6-TRICHLORO-1,3,5-TRIAZINE RCTN PROD, METHYLATED	Rabbit	No significant irritation
CAMPHENE	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Isobornyl Acrylate	Rabbit	Mild irritant
TETRAHYDROFURFURYL ACRYLATE	Rabbit	Corrosive
ISOOCTYL ACRYLATE	similar health hazards	Mild irritant
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	similar compounds	Severe irritant
1,6-hexanediol diacrylate	Rabbit	Moderate irritant
2-Propenoic acid, 2-hydroxyethyl ester, polymer with 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane, 2-oxepanone and 2,2'-oxybis[ethanol]	similar compounds	Severe irritant
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Rabbit	No significant irritation
BENZOPHENONE	Rabbit	Mild irritant
Pigment Blue 15	Rabbit	No significant irritation
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	Rabbit	No significant irritation
N,N'-BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)-1,6-HEXANEDIAMINE, POLYMERS W/MORPHOLINE-2,4,6-TRICHLORO-1,3,5-TRIAZINE RCTN PROD, METHYLATED	Rabbit	Severe irritant
CAMPHENE	Rabbit	Moderate irritant

Skin Sensitization

Name	Species	Value
Isobornyl Acrylate	Human and animal	Sensitizing
TETRAHYDROFURFURYL ACRYLATE	Professional judgement	Sensitizing
ISOOCTYL ACRYLATE	Mouse	Sensitizing
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	similar	Sensitizing

	compoun ds	
1,6-hexanediol diacrylate	Guinea pig	Sensitizing
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Mouse	Sensitizing
BENZOPHENONE	Guinea pig	Not classified
Pigment Blue 15	Human	Not classified
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	Guinea pig	Not classified
N,N'-BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)-1,6-HEXANEDIAMINE, POLYMERS W/MORPHOLINE-2,4,6-TRICHLORO-1,3,5-TRIAZINE RCTN PROD, METHYLATED	Guinea pig	Not classified

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
Isobornyl Acrylate	In Vitro	Not mutagenic
TETRAHYDROFURFURYL ACRYLATE	In Vitro	Not mutagenic
ISOOCTYL ACRYLATE	In Vitro	Some positive data exist, but the data are not sufficient for classification
1,6-hexanediol diacrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	In Vitro	Not mutagenic
BENZOPHENONE	In Vitro	Not mutagenic
BENZOPHENONE	In vivo	Not mutagenic
Pigment Blue 15	In Vitro	Not mutagenic
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	In Vitro	Not mutagenic
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	In vivo	Not mutagenic
N,N'-BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)-1,6-HEXANEDIAMINE, POLYMERS W/MORPHOLINE-2,4,6-TRICHLORO-1,3,5-TRIAZINE RCTN PROD, METHYLATED	In Vitro	Not mutagenic
CAMPHENE	In Vitro	Not mutagenic
CAMPHENE	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
ISOOCTYL ACRYLATE	Dermal	Mouse	Not carcinogenic
1,6-hexanediol diacrylate	Dermal	Mouse	Not carcinogenic
BENZOPHENONE	Dermal	Multiple animal species	Not carcinogenic
BENZOPHENONE	Ingestion	Multiple animal species	Carcinogenic
Pigment Blue 15	Ingestion	Mouse	Not carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Isobornyl Acrylate	Ingestion	Not classified for male reproduction	Rat	NOAEL 500 mg/kg/day	31 days
Isobornyl Acrylate	Ingestion	Not classified for female reproduction	Rat	NOAEL 100	premating

				mg/kg/day	into lactation
Isobornyl Acrylate	Ingestion	Not classified for development	Rat	NOAEL 100 mg/kg/day	premating into lactation
TETRAHYDROFURFURYL ACRYLATE	Ingestion	Toxic to female reproduction	Rat	NOAEL 50 mg/kg/day	premating into lactation
TETRAHYDROFURFURYL ACRYLATE	Dermal	Toxic to male reproduction	Rat	NOAEL 100 mg/kg/day	90 days
TETRAHYDROFURFURYL ACRYLATE	Ingestion	Toxic to male reproduction	Rat	NOAEL 35 mg/kg/day	90 days
TETRAHYDROFURFURYL ACRYLATE	Inhalation	Toxic to male reproduction	Rat	NOAEL 0.6 mg/l	90 days
TETRAHYDROFURFURYL ACRYLATE	Ingestion	Toxic to development	Rat	NOAEL 50 mg/kg/day	premating into lactation
ISOOCTYL ACRYLATE	Dermal	Not classified for female reproduction	Rat	NOAEL 57 mg/kg/day	premating & during gestation
ISOOCTYL ACRYLATE	Dermal	Not classified for male reproduction	Rat	NOAEL 57 mg/kg/day	premating & during gestation
ISOOCTYL ACRYLATE	Dermal	Not classified for development	Rat	NOAEL 57 mg/kg/day	premating & during gestation
ISOOCTYL ACRYLATE	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during organogenesis
1,6-hexanediol diacrylate	Not Specified	Not classified for development	Rat	NOAEL 750 mg/kg/day	during organogenesis
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Ingestion	Toxic to development	Rat	NOAEL 150 mg/kg/day	during gestation
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Ingestion	Toxic to female reproduction	Rat	NOAEL 200 mg/kg/day	premating into lactation
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Ingestion	Toxic to male reproduction	Rat	NOAEL 60 mg/kg/day	85 days
BENZOPHENONE	Ingestion	Not classified for female reproduction	Rat	NOAEL 100 mg/kg/day	2 generation
BENZOPHENONE	Ingestion	Not classified for male reproduction	Rat	NOAEL 80 mg/kg/day	2 generation
BENZOPHENONE	Ingestion	Not classified for development	Rabbit	NOAEL 25 mg/kg/day	during gestation
Pigment Blue 15	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
Pigment Blue 15	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	42 days
Pigment Blue 15	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during gestation
CAMPHENE	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
TETRAHYDROFURFURYL ACRYLATE	Inhalation	respiratory irritation	May cause respiratory irritation	Human and animal	NOAEL Not available	
ISOOCTYL ACRYLATE	Inhalation	respiratory irritation	Not classified	Human	NOAEL Not available	occupational exposure
ISOOCTYL ACRYLATE	Ingestion	central nervous	Not classified	Rat	NOAEL	

		system depression			5,000 mg/kg	
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
1,6-hexanediol diacrylate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
2-Propenoic acid, 2-hydroxyethyl ester, polymer with 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane, 2-oxepanone and 2,2'-oxybis[ethanol]	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
N,N'-BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)-1,6-HEXANEDIAMINE, POLYMERS W/MORPHOLINE-2,4,6-TRICHLORO-1,3,5-TRIAZINE RCTN PROD, METHYLATED	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
CAMPHENE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Isobornyl Acrylate	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 500 mg/kg/day	31 days
Isobornyl Acrylate	Ingestion	immune system	Not classified	Rat	NOAEL 500 mg/kg/day	31 days
Isobornyl Acrylate	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 500 mg/kg/day	31 days
Isobornyl Acrylate	Ingestion	heart	Not classified	Rat	NOAEL 500 mg/kg/day	31 days
Isobornyl Acrylate	Ingestion	endocrine system	Not classified	Rat	NOAEL 500 mg/kg/day	31 days
Isobornyl Acrylate	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 500 mg/kg/day	31 days
Isobornyl Acrylate	Ingestion	liver	Not classified	Rat	NOAEL 500 mg/kg/day	31 days
Isobornyl Acrylate	Ingestion	nervous system	Not classified	Rat	NOAEL 500 mg/kg/day	31 days
Isobornyl Acrylate	Ingestion	respiratory system	Not classified	Rat	NOAEL 500 mg/kg/day	31 days
ISOOCTYL ACRYLATE	Dermal	heart	Not classified	Rat	NOAEL 57 mg/kg/day	premating & during gestation
ISOOCTYL ACRYLATE	Dermal	endocrine system	Not classified	Rat	NOAEL 57 mg/kg/day	premating & during gestation
ISOOCTYL ACRYLATE	Dermal	hematopoietic system	Not classified	Rat	NOAEL 57 mg/kg/day	premating & during gestation
ISOOCTYL ACRYLATE	Dermal	liver	Not classified	Rat	NOAEL 57 mg/kg/day	premating & during gestation
ISOOCTYL ACRYLATE	Dermal	immune system	Not classified	Rat	NOAEL 57 mg/kg/day	premating & during gestation
ISOOCTYL ACRYLATE	Dermal	nervous system	Not classified	Rat	NOAEL 57 mg/kg/day	premating & during gestation

ISOOCTYL ACRYLATE	Dermal	kidney and/or bladder	Not classified	Rat	NOAEL 57 mg/kg/day	premating & during gestation
ISOOCTYL ACRYLATE	Dermal	respiratory system	Not classified	Rat	NOAEL 57 mg/kg/day	premating & during gestation
ISOOCTYL ACRYLATE	Ingestion	endocrine system	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
ISOOCTYL ACRYLATE	Ingestion	liver	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
ISOOCTYL ACRYLATE	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
ISOOCTYL ACRYLATE	Ingestion	heart	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
ISOOCTYL ACRYLATE	Ingestion	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
ISOOCTYL ACRYLATE	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
ISOOCTYL ACRYLATE	Ingestion	immune system	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
ISOOCTYL ACRYLATE	Ingestion	muscles	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
ISOOCTYL ACRYLATE	Ingestion	nervous system	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
ISOOCTYL ACRYLATE	Ingestion	eyes	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
ISOOCTYL ACRYLATE	Ingestion	respiratory system	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
ISOOCTYL ACRYLATE	Ingestion	vascular system	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
1,6-hexanediol diacrylate	Dermal	skin	May cause damage to organs though prolonged or repeated exposure	Mouse	LOAEL 70 mg/kg/day	80 weeks
2,4,6-Trimethylbenzoyldiphenyl phosphine oxide	Ingestion	skin	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
2,4,6-Trimethylbenzoyldiphenyl phosphine oxide	Ingestion	blood	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
2,4,6-Trimethylbenzoyldiphenyl phosphine oxide	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
2,4,6-Trimethylbenzoyldiphenyl phosphine oxide	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
2,4,6-Trimethylbenzoyldiphenyl phosphine oxide	Ingestion	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
BENZOPHENONE	Ingestion	kidney and/or bladder	May cause damage to organs though prolonged or repeated exposure	Rat	LOAEL 75 mg/kg/day	14 weeks
BENZOPHENONE	Ingestion	heart	Not classified	Rat	NOAEL 850 mg/kg/day	14 weeks
BENZOPHENONE	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 850 mg/kg/day	14 weeks
BENZOPHENONE	Ingestion	liver	Not classified	Rat	NOAEL 850 mg/kg/day	14 weeks
BENZOPHENONE	Ingestion	immune system	Not classified	Rat	NOAEL 850 mg/kg/day	14 weeks
BENZOPHENONE	Ingestion	endocrine system	Not classified	Rat	NOAEL 850 mg/kg/day	14 weeks
BENZOPHENONE	Ingestion	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 850 mg/kg/day	14 weeks
BENZOPHENONE	Ingestion	nervous system	Not classified	Rat	NOAEL 850 mg/kg/day	14 weeks
BENZOPHENONE	Ingestion	eyes	Not classified	Rat	NOAEL 850 mg/kg/day	14 weeks

BENZOPHENONE	Ingestion	respiratory system	Not classified	Rat	NOAEL 850 mg/kg/day	14 weeks
Pigment Blue 15	Ingestion	endocrine system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Pigment Blue 15	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Pigment Blue 15	Ingestion	respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Pigment Blue 15	Ingestion	kidney and/or bladder	Not classified	Multiple animal species	NOAEL Not available	not available
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	Ingestion	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	Ingestion	respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	Ingestion	heart	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	Ingestion	endocrine system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU	Ingestion	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks

HYDROPEROXIDE AND OCTANE						
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	Ingestion	immune system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	Ingestion	eyes	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
DECANEDIOIC ACID, BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)ESTER, REACTION PRODUCTS WITH TERT-BU HYDROPEROXIDE AND OCTANE	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
N,N'-BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)-1,6-HEXANEDIAMINE, POLYMERS W/MORPHOLINE-2,4,6-TRICHLORO-1,3,5-TRIAZINE RCTN PROD, METHYLATED	Ingestion	gastrointestinal tract	May cause damage to organs though prolonged or repeated exposure	Rat	NOAEL 15 mg/kg/day	28 days
N,N'-BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)-1,6-HEXANEDIAMINE, POLYMERS W/MORPHOLINE-2,4,6-TRICHLORO-1,3,5-TRIAZINE RCTN PROD, METHYLATED	Ingestion	immune system	May cause damage to organs though prolonged or repeated exposure	Rat	NOAEL 15 mg/kg/day	28 days
CAMPHENE	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
CAMPHENE	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
CAMPHENE	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days

Aspiration Hazard
For the component/components, either no data are currently available or the data are not sufficient for classification.

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.

Proper destruction may require the use of additional fuel during incineration processes. 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): D018 (Benzene)

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
Not Applicable.

Health Hazards
Acute toxicity
Carcinogenicity
Hazard Not Otherwise Classified (HNOC)
Reproductive toxicity
Respiratory or Skin Sensitization
Serious eye damage or eye irritation
Skin Corrosion or Irritation
Specific target organ toxicity (single or repeated exposure)

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information.

The components of this material are in compliance with the provisions of the Korean Toxic Chemical Control Law. Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

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:** 1 **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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