Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the Canadian Hazardous Products Regulations.

SECTION 1: Identification

1.1. Product identifier
3M™ 8964UV Yellow Piezo InkJet Ink

Product Identification Numbers
75-0302-6690-4 75-0302-9784-2

1.2. Recommended use and restrictions on use

Intended Use
Ink

Specific Use
Ink, For use with Durst 163TS and 163TS-HS

Restrictions on use
Not applicable

1.3. Supplier's details

Company:	3M Canada Company
Division:	Commercial Branding and Transportation Division
Address:	1840 Oxford Street East, Post Office Box 5757, London, Ontario N6A 4T1
Telephone:	(800) 364-3577
Website:	www.3M.ca

1.4. Emergency telephone number
Medical Emergency Telephone:1-800-3M HELPS / 1800 364 3577

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Skin Corrosion/Irritation: Category 2.
Serious Eye Damage/Irritation: Category 1.
Skin Sensitizer: Category 1A.
Carcinogenicity: Category 1A.
Reproductive Toxicity: Category 1B.
Specific Target Organ Toxicity (repeated exposure): Category 1.

Specific Target Organ Toxicity (single exposure): Category 3.
Health Hazards Not Otherwise Classified - Category 1

2.2. Label elements
Signal word
Danger

Symbols
Corrosion |Exclamation mark |Health Hazard |

Pictograms

Hazard Statements

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 chemical gastrointestinal burns.

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

Precautionary statements

Prevention:
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapours. 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 respiratory protection.

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. Immediately call a POISON CENTER or doctor. Get medical attention if you feel unwell. 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. Other hazards
None known.

25% of the mixture consists of ingredients of unknown acute oral toxicity.
45% of the mixture consists of ingredients of unknown acute dermal toxicity.
90% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt	Common Name
Isobornyl acrylate	5888-33-5	10 - 30 Trade Secret *	2-Propenoic acid, 1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, exo-
Isooctyl acrylate	29590-42-9	10 - 30 Trade Secret *	2-Propenoic acid, isooctyl ester
Stabilizer	Trade Secret	10 - 30	Not Applicable
Tetrahydrofurfuryl acrylate	2399-48-6	10 - 30 Trade Secret *	2-Propenoic acid, (tetrahydro-2-furanyl)methyl ester
Polymer	Trade Secret	5 - 10	Not Applicable
1,6-Hexanediol diacrylate	13048-33-4	3 - 7 Trade Secret *	2-Propenoic acid, 1,6-hexanediyl ester
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	3 - 7 Trade Secret *	2,4,6-Trimethylbenzoyl diphenyl phosphine oxide; Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-
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	3 - 7 Trade Secret *	No Data Available
Benzophenone	119-61-9	3 - 7 Trade Secret *	Methanone, diphenyl-
Nickel, 5,5'-azobis-2,4,6(1h,3h,5h)-pyrimidinetrione complexes	68511-62-6	3 - 7 Trade Secret *	Nickel, 5,5'-azobis-2,4,6(1H,3H,5H)-pyrimidinetrione complexes
Melamine	108-78-1	1 - 5 Trade Secret *	1,3,5-Triazine-2,4,6-triamine
N,N'-Bis(2,2,6,6-tetramethyl-4-piperidinyl)-1,6-hexanediamine, polymers w/morpholine-2,4,6-trichloro-1,3,5-triazine reaction products, methylated	193098-40-7	1 - 5 Trade Secret *	1,6-Hexanediamine, N,N'-bis(2,2,6,6-tetramethyl-4-piperidinyl)-, polymers with morpholine-2,4,6-trichloro-1,3,5-triazine reaction products, methylated
Camphene	79-92-5	< 0.2	Bicyclo[2.2.1]heptane, 2,2-dimethyl-3-methylene-

Stabilizer is a non-hazardous material according to WHMIS criteria. Specific information has been withheld as a trade secret.
Polymer is a non-hazardous material according to WHMIS criteria. Specific information has been withheld as a trade secret.

*The concentration (exact or range) of this component 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. Unsuitable extinguishing media
None Determined

5.3. 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

5.4. Special protection 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
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. Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapours, in accordance with good industrial hygiene practice.

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 or professional 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/vapours/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. Store locked up.

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
Melamine	108-78-1	AIHA	TWA(inhalable particulates):3 mg/m3	
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
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
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/vapours/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

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
Colour	Yellow
Odour	Moderate Acrylate
Odour threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*Not Applicable*
Boiling point	> 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*
Vapour Pressure	< 1,333.2 Pa [@ 20 ºC]
Relative Vapour 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:
May be harmful if inhaled. Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. May cause additional health effects (see below).

Skin Contact:
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:
May be 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
Nickel Compounds (except alloys)	68511-62-6	Known To Be Human Carcinogen.	National Toxicology Program Carcinogens
Nickel compounds	68511-62-6	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
Benzophenone	119-61-9	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Melamine	108-78-1	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 >5 - =12.5 mg/l
Overall product	Ingestion		No data available; calculated ATE >2,000 - =5,000 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
Isobornyl acrylate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Isobornyl acrylate	Ingestion	Rat	LD50 4,350 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
Nickel, 5,5'-azobis-2,4,6(1h,3h,5h)-pyrimidinetrione complexes	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
Nickel, 5,5'-azobis-2,4,6(1h,3h,5h)-pyrimidinetrione complexes	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.222 mg/l
Nickel, 5,5'-azobis-2,4,6(1h,3h,5h)-pyrimidinetrione complexes	Ingestion	Rat	LD50 > 5,000 mg/kg
Melamine	Dermal	Rabbit	LD50 > 1,000 mg/kg
Melamine	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.19 mg/l
Melamine	Ingestion	Rat	LD50 3,161 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 reaction products, methylated	Dermal	Rat	LD50 > 2,000 mg/kg
N,N'-Bis(2,2,6,6-tetramethyl-4-piperidinyl)-1,6-hexanediamine,	Ingestion	Rat	LD50 >500, <2,000 mg/kg

polymers w/morpholine-2,4,6-trichloro-1,3,5-triazine reaction products, methylated			
N,N'-Bis(2,2,6,6-tetramethyl-4-piperidinyl)-1,6-hexanediamine, polymers w/morpholine-2,4,6-trichloro-1,3,5-triazine reaction products, 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
Overall product	Professional judgement	Irritant
Tetrahydrofurfuryl acrylate	Rabbit	Corrosive
Isooctyl acrylate	In vitro data	No significant irritation
Isobornyl acrylate	Rabbit	Minimal irritation
1,6-Hexanediol diacrylate	Rabbit	Irritant
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Rabbit	No significant irritation
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
Benzophenone	Rabbit	No significant irritation
Nickel, 5,5'-azobis-2,4,6(1h,3h,5h)-pyrimidinetrione complexes	Rabbit	No significant irritation
Melamine	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 reaction products, methylated	Rabbit	No significant irritation
Camphene	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Tetrahydrofurfuryl acrylate	Rabbit	Corrosive
Isooctyl acrylate	similar health hazards	Mild irritant
Isobornyl acrylate	Rabbit	Mild irritant
1,6-Hexanediol diacrylate	Rabbit	Moderate irritant
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Rabbit	No significant irritation
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
Benzophenone	Rabbit	Mild irritant
Nickel, 5,5'-azobis-2,4,6(1h,3h,5h)-pyrimidinetrione complexes	Rabbit	No significant irritation
Melamine	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 reaction products, methylated	Rabbit	Severe irritant
Camphene	Rabbit	Moderate irritant

Skin Sensitization

Name	Species	Value
Tetrahydrofurfuryl acrylate	Professional judgement	Sensitizing
Isooctyl acrylate	Mouse	Sensitizing
Isobornyl acrylate	Human and animal	Sensitizing
1,6-Hexanediol diacrylate	Guinea pig	Sensitizing

2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Mouse	Sensitizing
Benzophenone	Guinea pig	Not classified
Nickel, 5,5'-azobis-2,4,6(1h,3h,5h)-pyrimidinetrione complexes	similar compounds	Sensitizing
Melamine	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 reaction products, 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
Tetrahydrofurfuryl acrylate	In Vitro	Not mutagenic
Isooctyl acrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Isobornyl acrylate	In Vitro	Not mutagenic
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
Nickel, 5,5'-azobis-2,4,6(1h,3h,5h)-pyrimidinetrione complexes	In Vitro	Not mutagenic
Melamine	In Vitro	Not mutagenic
Melamine	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 reaction products, 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
Nickel, 5,5'-azobis-2,4,6(1h,3h,5h)-pyrimidinetrione complexes	Not Specified	similar compounds	Carcinogenic
Melamine	Ingestion	Multiple animal species	Carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
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
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 mg/kg/day	premating into lactation
Isobornyl acrylate	Ingestion	Not classified for development	Rat	NOAEL 100 mg/kg/day	premating into lactation
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
Nickel, 5,5'-azobis-2,4,6(1h,3h,5h)-pyrimidinetrione complexes	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during gestation
Melamine	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,227 mg/kg/day	2 generation
Melamine	Ingestion	Not classified for development	Rat	NOAEL 1,060 mg/kg/day	during organogenesis
Melamine	Ingestion	Toxic to male reproduction	Rat	NOAEL 89 mg/kg/day	2 generation
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 system depression	Not classified	Rat	NOAEL 5,000 mg/kg	
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)-	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	

1,3,3-trimethylcyclohexane, 2-oxepanone and 2,2'-oxybis[ethanol]						
N,N'-Bis(2,2,6,6-tetramethyl-4-piperidinyl)-1,6-hexanediamine, polymers w/morpholine-2,4,6-trichloro-1,3,5-triazine reaction products, 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
Isooctyl acrylate	Dermal	heart | endocrine system | hematopoietic system | liver | immune system | nervous system | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 57 mg/kg/day	premating & during gestation
Isooctyl acrylate	Ingestion	endocrine system | liver | kidney and/or bladder | heart | bone, teeth, nails, and/or hair | hematopoietic system | immune system | muscles | nervous system | eyes | respiratory system | vascular system	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
Isobornyl acrylate	Ingestion	gastrointestinal tract | immune system | kidney and/or bladder | heart | endocrine system | hematopoietic system | liver | nervous system | respiratory system	Not classified	Rat	NOAEL 500 mg/kg/day	31 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 | blood | liver | kidney and/or bladder | 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 | hematopoietic system | liver | immune system | endocrine system | bone, teeth, nails, and/or hair | nervous system | eyes | respiratory system	Not classified	Rat	NOAEL 850 mg/kg/day	14 weeks
Nickel, 5,5'-azobis-	Ingestion	hematopoietic	Not classified	Rat	NOAEL	28 days

2,4,6(1h,3h,5h)-pyrimidinetrione complexes		system			1,000 mg/kg/day	
Melamine	Ingestion	kidney and/or bladder	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 44.6 mg/kg/day	90 days
Melamine	Ingestion	heart | skin | endocrine system | gastrointestinal tract | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | muscles | nervous system | respiratory system	Not classified	Rat	NOAEL 1,400 mg/kg/day	90 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 reaction products, methylated	Ingestion	gastrointestinal tract | immune system	May cause damage to organs though prolonged or repeated exposure	Rat	NOAEL 15 mg/kg/day	28 days
Camphene	Ingestion	liver | kidney and/or bladder | 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

No data available.

SECTION 13: Disposal considerations

13.1. Disposal methods

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

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. 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.

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. Safety, health and environmental regulations/legislation specific for the substance or mixture

Global inventory status

Contact 3M for more information. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory. 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.

SECTION 16: Other information

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.
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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3M Canada SDSs are available at www.3M.ca