Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the Malaysia Occupational Safety and Health (Chemical Classification, Labelling and Safety Data Sheets) Regulations 2013.

SECTION 1: Identification

1.1. Product identifier
3M™ Screen Print UV Gloss Clear 9740i

Product Identification Numbers
75-0400-3343-5 75-3472-5444-5

1.2. Recommended use and restrictions on use

Recommended use
UV Clear Coat for Graphic Applications, Ink

1.3. Supplier's details
ADDRESS: 3M Malaysia Sdn. Bhd., Level 8, Block F, Oasis Square, No.2, Jalan PJU 1A/7A, Ara Damansara 47301 Petaling, Jaya, Selangor
Telephone: 03-7884 2888
E Mail: 3mmyehsr@mmm.com
Website: www.3M.com.my

1.4. Emergency telephone number
+60 03-7884 2888

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Acute Toxicity (oral): Category 4.
Serious Eye Damage/Irritation: Category 1.
Skin Corrosion/Irritation: Category 2.
Skin Sensitizer: Category 1.
Reproductive Toxicity: Category 1B.
Carcinogenicity: Category 2.
Specific Target Organ Toxicity (repeated exposure): Category 1.
Chronic Aquatic Toxicity: Category 2.

2.2. Label elements
Signal word
Danger

Symbols
Corrosion | Exclamation mark | Health Hazard | Environment |

Pictograms

Hazard Statements

H302	Harmful if swallowed.
H318	Causes serious eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H360	May damage fertility or the unborn child.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure: respiratory system |
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements
General:

P102	Keep out of reach of children.
P101	If medical advice is needed, have product container or label at hand.

Prevention:

P201	Obtain special instructions before use.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P280B	Wear protective gloves and eye/face protection.
P281	Use personal protective equipment as required.
P273	Avoid release to the environment.

Response:

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P310	Immediately call a POISON CENTER or doctor/physician.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

Storage:

P405	Store locked up.

Disposal:

P501	Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Other hazards
None known

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
Urethane acrylate oligomer	72162-39-1	30 - 40
VINYLCAPROLACTAM	2235-00-9	10 - 20
Amine modified acrylic oligomer	67906-98-3	5 - 15
1,6-HEXANEDIOL DIACRYLATE	13048-33-4	3 - 7
2-ETHYLHEXYL ACRYLATE	103-11-7	3 - 7
CURING AGENT (NJTSRN 04499600-6673)	Trade Secret	3 - 7
TETRAHYDROFURFURYL ACRYLATE	2399-48-6	1 - 5
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	7328-17-8	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	1 - 3
POLY(DIMETHYLSILOXANE)	63148-62-9	1 - 3
TRIAZINE DERIVATIVE	Trade Secret	1 - 3
UV ABSORBERS (NJTSRN 04499600-6672)	Trade Secret	1 - 3
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	< 1
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	2162-74-5	< 1
PHENOXY ETHYL ACRYLATE	48145-04-6	<= 1
Siloxanes and Silicones, 3-[3-(acetyloxy)-2-hydroxypropoxy]propyl Me, di-Me, 3-[2-hydroxy-3-[(1-oxo-2-propenyl)oxy]propoxy]propyl Me	125455-51-8	< 1
Acrylic Acid	79-10-7	< 0.2
Toluene	108-88-3	< 0.2

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
No critical symptoms or effects. See Section 11.1, information on toxicological effects.

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

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
In case of fire: Use a fire fighting agent suitable for 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
Formaldehyde	During Combustion
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. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

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

6.3. Methods and material for containment and cleaning up
Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. 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. 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. Keep cool. Protect from sunlight. Store away from heat. 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	Malaysia OELs	TWA(8 hours):188 mg/m3(50 ppm)	SKIN
VINYLCAPROLACTAM	2235-00-9	Manufacturer determined	TWA(8 hours):0.1 ppm(0.57 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
Acrylic Acid	79-10-7	ACGIH	TWA:2 ppm	A4: Not class. as human carcin, Danger of cutaneous absorption
Acrylic Acid	79-10-7	Malaysia OELs	TWA(8 hours):5.9 mg/m3(2 ppm)	SKIN

ACGIH : American Conference of Governmental Industrial Hygienists
CMRG : Chemical Manufacturer's Recommended Guidelines
Malaysia OELs : Malaysia. Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations
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, 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
Color	Colorless
Odor	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	<=1 [*Ref Std:*BUOAC=1]
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*
Vapor Pressure	<=1,333.2 Pa [@ 20 ºC]
Vapor Density and/or Relative Vapor Density	>=1 [*Ref Std:*AIR=1]
Density	1.3 g/ml
Relative Density	1.3 [*Test Method:*Tested per ASTM protocol] [*Ref Std:*WATER=1]
Water solubility	Moderate
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*No Data Available*
Viscosity/Kinematic Viscosity	1,000 - 5,000 Pa-s [*Test Method:*Tested per ASTM protocol]
Volatile Organic Compounds	< 10 g/l
Percent volatile	
VOC Less H2O & Exempt Solvents	< 10 g/l

Nanoparticles
This material contains nanoparticles.

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
Heat

10.5. Incompatible materials
Strong oxidizing agents

10.6. Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
May be harmful if inhaled. Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

Skin Contact:
May be harmful in contact with skin.
Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

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

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.

Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish colored skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.

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.

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 ATE2,000 - 5,000 mg/kg
Overall product	Inhalation-Dust/Mist(4 hr)		No data available; calculated ATE5 - 12.5 mg/l
Overall product	Ingestion		No data available; calculated ATE300 - 2,000 mg/kg
VINYLCAPROLACTAM	Dermal	Rabbit	LD50 1,700 mg/kg
VINYLCAPROLACTAM	Ingestion	Rat	LD50 1,049 mg/kg
2-ETHYLHEXYL ACRYLATE	Dermal	Rabbit	LD50 > 10,000 mg/kg
2-ETHYLHEXYL ACRYLATE	Ingestion	Rat	LD50 4,430 mg/kg
1,6-HEXANEDIOL DIACRYLATE	Dermal	Rabbit	LD50 3,636 mg/kg
1,6-HEXANEDIOL DIACRYLATE	Ingestion	Rat	LD50 > 5,000 mg/kg
CURING AGENT (NJTSRN 04499600-6673)	Dermal	Rat	LD50 > 5,000 mg/kg
CURING AGENT (NJTSRN 04499600-6673)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 1 mg/l
CURING AGENT (NJTSRN 04499600-6673)	Ingestion	Rat	LD50 2,500 mg/kg
TETRAHYDROFURFURYL ACRYLATE	Ingestion	Rat	LD50 882 mg/kg
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	Dermal		LD50 estimated to be 1,000 - 2,000 mg/kg
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	Ingestion	Rat	LD50 1,860 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
TRIAZINE DERIVATIVE	Dermal	Rat	LD50 > 2,000 mg/kg
TRIAZINE DERIVATIVE	Ingestion	Rat	LD50 > 2,000 mg/kg
POLY(DIMETHYLSILOXANE)	Dermal	Rabbit	LD50 > 19,400 mg/kg
POLY(DIMETHYLSILOXANE)	Ingestion	Rat	LD50 > 17,000 mg/kg
PHENOXY ETHYL ACRYLATE	Dermal	Rat	LD50 > 2,000 mg/kg
PHENOXY ETHYL ACRYLATE	Ingestion	Rat	LD50 > 5,000 mg/kg
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	Dermal	Rat	LD50 > 2,000 mg/kg
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	Ingestion	Rat	LD50 >300, <2000 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
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
Acrylic Acid	Dermal	Rabbit	LD50 > 2,000 mg/kg
Acrylic Acid	Inhalation-Dust/Mist (4 hours)	Rat	LC50 3.8 mg/l
Acrylic Acid	Ingestion	Rat	LD50 1,250 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Urethane acrylate oligomer	similar compounds	Irritant
VINYLCAPROLACTAM	Rabbit	Minimal irritation
Amine modified acrylic oligomer	similar compounds	Irritant
2-ETHYLHEXYL ACRYLATE	Rabbit	Irritant
1,6-HEXANEDIOL DIACRYLATE	Rabbit	Irritant
CURING AGENT (NJTSRN 04499600-6673)	Rabbit	No significant irritation
TETRAHYDROFURFURYL ACRYLATE	Rabbit	Corrosive
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	Rabbit	Irritant
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
TRIAZINE DERIVATIVE	Rabbit	No significant irritation
POLY(DIMETHYLSILOXANE)	Rabbit	No significant irritation
PHENOXY ETHYL ACRYLATE	Rabbit	No significant irritation
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	Rat	Minimal irritation
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Rabbit	No significant irritation
Toluene	Rabbit	Irritant
Acrylic Acid	Rabbit	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Urethane acrylate oligomer	similar compounds	Severe irritant
VINYLCAPROLACTAM	Rabbit	Severe irritant
Amine modified acrylic oligomer	similar compounds	Severe irritant
2-ETHYLHEXYL ACRYLATE	Rabbit	No significant irritation
1,6-HEXANEDIOL DIACRYLATE	Rabbit	Moderate irritant
CURING AGENT (NJTSRN 04499600-6673)	Rabbit	Mild irritant
TETRAHYDROFURFURYL ACRYLATE	Rabbit	Corrosive
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	Rabbit	Severe irritant
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
TRIAZINE DERIVATIVE	Rabbit	No significant irritation
POLY(DIMETHYLSILOXANE)	Rabbit	No significant irritation
PHENOXY ETHYL ACRYLATE	Rabbit	No significant irritation
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	Rabbit	Mild irritant
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Rabbit	No significant irritation
Toluene	Rabbit	Moderate irritant
Acrylic Acid	Rabbit	Corrosive

Sensitization:

Skin Sensitization

Name	Species	Value
VINYLCAPROLACTAM	Mouse	Sensitizing
Amine modified acrylic oligomer	similar compounds	Sensitizing
2-ETHYLHEXYL ACRYLATE	Human and animal	Sensitizing
1,6-HEXANEDIOL DIACRYLATE	Guinea pig	Sensitizing
CURING AGENT (NJTSRN 04499600-6673)	Guinea pig	Not classified
TETRAHYDROFURFURYL ACRYLATE	Professional judgement	Sensitizing
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	Guinea pig	Sensitizing
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
TRIAZINE DERIVATIVE	Mouse	Not classified
PHENOXY ETHYL ACRYLATE	Guinea pig	Sensitizing
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	Guinea pig	Not classified
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Mouse	Sensitizing
Toluene	Guinea pig	Not classified
Acrylic Acid	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
VINYLCAPROLACTAM	In Vitro	Not mutagenic
2-ETHYLHEXYL ACRYLATE	In vivo	Not mutagenic
2-ETHYLHEXYL 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
CURING AGENT (NJTSRN 04499600-6673)	In Vitro	Not mutagenic
CURING AGENT (NJTSRN 04499600-6673)	In vivo	Not mutagenic
TETRAHYDROFURFURYL ACRYLATE	In Vitro	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
TRIAZINE DERIVATIVE	In Vitro	Not mutagenic
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	In Vitro	Not mutagenic
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	In Vitro	Not mutagenic
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic
Acrylic Acid	In vivo	Not mutagenic
Acrylic Acid	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
2-ETHYLHEXYL ACRYLATE	Dermal	Mouse	Carcinogenic
1,6-HEXANEDIOL DIACRYLATE	Dermal	Mouse	Not 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
Acrylic Acid	Ingestion	Rat	Not carcinogenic
Acrylic Acid	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
2-ETHYLHEXYL ACRYLATE	Inhalation	Not classified for development	Rat	NOAEL 0.75 mg/l	during gestation
1,6-HEXANEDIOL DIACRYLATE	Not Specified	Not classified for development	Rat	NOAEL 750 mg/kg/day	during organogenesis
CURING AGENT (NJTSRN 04499600-6673)	Ingestion	Not classified for development	Rat	NOAEL 900 mg/kg/day	during gestation
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
PHENOXY ETHYL ACRYLATE	Ingestion	Not classified for male reproduction	Rat	NOAEL 800 mg/kg/day	43 days
PHENOXY ETHYL ACRYLATE	Ingestion	Toxic to female reproduction	Rat	NOAEL 300 mg/kg/day	premating into lactation
PHENOXY ETHYL ACRYLATE	Ingestion	Toxic to development	Rat	NOAEL 300 mg/kg/day	premating into lactation
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	Ingestion	Not classified for development	Rat	NOAEL 3 mg/kg/day	premating into lactation
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	Ingestion	Not classified for male reproduction	Rat	NOAEL 3 mg/kg/day	28 days
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	Ingestion	Toxic to female reproduction	Rat	NOAEL 1 mg/kg/day	premating into lactation
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Ingestion	Not classified for 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
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
Acrylic Acid	Ingestion	Not classified for female reproduction	Rat	NOAEL 460 mg/kg/day	2 generation

Acrylic Acid	Ingestion	Not classified for male reproduction	Rat	NOAEL 460 mg/kg/day	2 generation
Acrylic Acid	Inhalation	Not classified for development	Rat	NOAEL 1.1 mg/l	during organogenesis
Acrylic Acid	Ingestion	Not classified for development	Rat	NOAEL 53 mg/kg/day	2 generation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Urethane acrylate oligomer	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
VINYLCAPROLACTAM	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	
Amine modified acrylic oligomer	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
2-ETHYLHEXYL ACRYLATE	Inhalation	respiratory irritation	May cause respiratory irritation	Rat	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	
TETRAHYDROFURFURYL ACRYLATE	Inhalation	respiratory irritation	May cause respiratory irritation	Human and animal	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	
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
Acrylic Acid	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
VINYLCAPROLACTAM	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 0.001 mg/l	28 days
VINYLCAPROLACTAM	Inhalation	blood | liver | kidney and/or bladder | eyes	Not classified	Rat	NOAEL 0.18 mg/l	90 days
VINYLCAPROLACTAM	Ingestion	liver	Not classified	Rat	NOAEL 260 mg/kg/day	3 months
2-ETHYLHEXYL ACRYLATE	Inhalation	endocrine system | liver	Not classified	Rat	NOAEL 0.75 mg/l	90 days
2-ETHYLHEXYL ACRYLATE	Inhalation	olfactory system	Not classified	Rat	NOAEL 0.08 mg/l	90 days
2-ETHYLHEXYL	Inhalation	respiratory system	Not classified	Rat	NOAEL 0.75	90 days

ACRYLATE					mg/l	
1,6-HEXANEDIOL DIACRYLATE	Dermal	skin	May cause damage to organs though prolonged or repeated exposure	Mouse	LOAEL 70 mg/kg/day	80 weeks
CURING AGENT (NJTSRN 04499600-6673)	Ingestion	endocrine system | liver | kidney and/or bladder | heart | blood | immune system | nervous system	Not classified	Rat	NOAEL 1,000 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 RCTN PROD, METHYLATED	Ingestion	gastrointestinal tract | immune system	May cause damage to organs though prolonged or repeated exposure	Rat	NOAEL 15 mg/kg/day	28 days
N,N'-BIS(2,6-DIISOPROPYLPHENYL) CARBODIIMIDE	Ingestion	heart | endocrine system | immune system | kidney and/or bladder	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 4 mg/kg/day	28 days
N,N'-BIS(2,6-DIISOPROPYLPHENYL) CARBODIIMIDE	Ingestion	bone, teeth, nails, and/or hair | hematopoietic system | liver | nervous system	Not classified	Rat	NOAEL 16 mg/kg/day	28 days
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
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

Aspiration Hazard

Name	Value
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

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labeling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

12.1. Toxicity

Acute aquatic hazard:
GHS Acute 2: Toxic to aquatic life.

Chronic aquatic hazard:
GHS Chronic 2: Toxic to aquatic life with long lasting effects

No product test data available

Material	Cas #	Organism	Type	Exposure	Test Endpoint	Test Result
Urethane acrylate oligomer	72162-39-1		Data not available or insufficient for classification			N/A
VINYLCAPROLACTAM	2235-00-9	Bacteria	Experimental	17 hours	Effect Concentration 50%	622 mg/l
VINYLCAPROLACTAM	2235-00-9	Green algae	Experimental	72 hours	Effect Concentration 50%	>100 mg/l
VINYLCAPROLACTAM	2235-00-9	Water flea	Experimental	48 hours	Effect Concentration 50%	>100 mg/l
VINYLCAPROLACTAM	2235-00-9	Zebra Fish	Experimental	96 hours	Lethal Concentration 50%	307 mg/l
VINYLCAPROLACTAM	2235-00-9	Green algae	Experimental	72 hours	No obs Effect Conc	25 mg/l
Amine modified acrylic oligomer	67906-98-3		Data not available or insufficient for classification			N/A
1,6-HEXANEDIOL DIACRYLAT	13048-33-4	Activated sludge	Experimental	30 minutes	Effect Concentration 50%	270 mg/l

E						
1,6-HEXANEDIOL DIACRYLATE	13048-33-4	Golden Orfe	Experimental	96 hours	Lethal Concentration 50%	4.6 mg/l
1,6-HEXANEDIOL DIACRYLATE	13048-33-4	Green algae	Experimental	72 hours	Effect Concentration 50%	1.5 mg/l
1,6-HEXANEDIOL DIACRYLATE	13048-33-4	Water flea	Experimental	48 hours	Effect Concentration 50%	2.6 mg/l
1,6-HEXANEDIOL DIACRYLATE	13048-33-4	Green algae	Experimental	72 hours	Effect Concentration 10%	0.585 mg/l
2-ETHYLHEXYL ACRYLATE	103-11-7	Activated sludge	Experimental	30 minutes	Effect Concentration 20%	>1,000 mg/l
2-ETHYLHEXYL ACRYLATE	103-11-7	Green algae	Experimental	72 hours	Effect Concentration 50%	1.71 mg/l
2-ETHYLHEXYL ACRYLATE	103-11-7	Rainbow Trout	Experimental	96 hours	Lethal Concentration 50%	1.81 mg/l
2-ETHYLHEXYL ACRYLATE	103-11-7	Water flea	Experimental	48 hours	Effect Concentration 50%	1.3 mg/l
2-ETHYLHEXYL ACRYLATE	103-11-7	Water flea	Estimated	21 days	No obs Effect Conc	0.136 mg/l
2-ETHYLHEXYL ACRYLATE	103-11-7	Green algae	Experimental	72 hours	No obs Effect Conc	0.45 mg/l
CURING AGENT (NJTSRN 04499600-6673)	Trade Secret	Activated sludge	Experimental	3 hours	Effect Concentration 10%	>100 mg/l
CURING AGENT (NJTSRN 04499600-6673)	Trade Secret	Green algae	Experimental	72 hours	Effect Concentration 50%	14.4 mg/l
CURING AGENT (NJTSRN 04499600-6673)	Trade Secret	Water flea	Experimental	48 hours	Effect Concentration 50%	53.9 mg/l
CURING	Trade Secret	Zebra Fish	Experimental	96 hours	Lethal	24 mg/l

AGENT (NJTSRN 04499600-6673)					Concentration 50%	
CURING AGENT (NJTSRN 04499600-6673)	Trade Secret	Green algae	Experimental	72 hours	Effect Concentration 10%	2.51 mg/l
TETRAHYDROFURFURYL ACRYLATE	2399-48-6	Activated sludge	Experimental	3 hours	Effect Concentration 50%	263.7 mg/l
TETRAHYDROFURFURYL ACRYLATE	2399-48-6	Green algae	Experimental	72 hours	Effect Concentration 50%	3.92 mg/l
TETRAHYDROFURFURYL ACRYLATE	2399-48-6	Water flea	Experimental	48 hours	Effect Concentration 50%	37.7 mg/l
TETRAHYDROFURFURYL ACRYLATE	2399-48-6	Zebra Fish	Experimental	96 hours	Lethal Concentration 50%	7.32 mg/l
TETRAHYDROFURFURYL ACRYLATE	2399-48-6	Green algae	Experimental	72 hours	Effect Concentration 10%	2.48 mg/l
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	7328-17-8	Activated sludge	Experimental	3 hours	Effect Concentration 50%	770 mg/l
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	7328-17-8	Golden Orfe	Experimental	96 hours	Lethal Concentration 50%	10 mg/l
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	7328-17-8	Green Algae	Experimental	72 hours	Effect Concentration 50%	3.2 mg/l
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	7328-17-8	Water flea	Experimental	48 hours	Effect Concentration 50%	10.56 mg/l
N,N'-BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)-1,6-HEXANEDIAMINE, POLYMERS W/MORPHOLINE-2,4,6-	193098-40-7	Activated sludge	Experimental	3 hours	Effect Concentration 50%	>100 mg/l

TRICHLORO-1,3,5-TRIAZINE RCTN PROD, 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 RCTN PROD, METHYLATED	193098-40-7	Green Algae	Experimental	72 hours	Effect Concentration 50%	>0.15 mg/l
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	Rainbow Trout	Experimental	96 hours	Lethal Concentration 50%	>1.5 mg/l
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, METHYLATE	193098-40-7	Water flea	Experimental	48 hours	Effect Concentration 50%	0.64 mg/l

D						
POLY(DIMETHYLSILOXANE)	63148-62-9		Data not available or insufficient for classification			N/A
TRIAZINE DERIVATIVE	Trade Secret	Activated sludge	Experimental	3 hours	Effect Concentration 50%	>100 mg/l
TRIAZINE DERIVATIVE	Trade Secret	Green Algae	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
TRIAZINE DERIVATIVE	Trade Secret	Rainbow Trout	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
TRIAZINE DERIVATIVE	Trade Secret	Water flea	Experimental	48 hours	No tox obs at lmt of water sol	>100 mg/l
TRIAZINE DERIVATIVE	Trade Secret	Green Algae	Experimental	96 hours	No tox obs at lmt of water sol	100 mg/l
UV ABSORBERS (NJTSRN 04499600-6672)	Trade Secret	Green algae	Experimental	72 hours	Effect Concentration 50%	>100 mg/l
UV ABSORBERS (NJTSRN 04499600-6672)	Trade Secret	Water flea	Experimental	96 hours	Effect Concentration 50%	>100 mg/l
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	Activated sludge	Experimental	3 hours	Effect Concentration 20%	>1,000 mg/l
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	Common Carp	Experimental	96 hours	Lethal Concentration 50%	1.4 mg/l
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	Green Algae	Experimental	72 hours	Effect Concentration 50%	>2.01 mg/l
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	Water flea	Experimental	48 hours	Effect Concentration 50%	3.53 mg/l
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	Green algae	Experimental	72 hours	Effect Concentration 10%	1.56 mg/l
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	2162-74-5	Activated sludge	Experimental	3 hours	Effect Concentration 50%	>1,000 mg/l
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	2162-74-5	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
N,N'-BIS(2,6-	2162-74-5	Rainbow Trout	Experimental	96 hours	No tox obs at	>100 mg/l

DIISOPROPYLPHENYL)CARBODIIMIDE					lmt of water sol	
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	2162-74-5	Water flea	Experimental	48 hours	No tox obs at lmt of water sol	>100 mg/l
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	2162-74-5	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
PHENOXY ETHYL ACRYLATE	48145-04-6	Activated sludge	Experimental	3 hours	Effect Concentration 50%	177 mg/l
PHENOXY ETHYL ACRYLATE	48145-04-6	Golden Orfe	Experimental	96 hours	Lethal Concentration 50%	10 mg/l
PHENOXY ETHYL ACRYLATE	48145-04-6	Green algae	Experimental	72 hours	Effect Concentration 50%	4.4 mg/l
PHENOXY ETHYL ACRYLATE	48145-04-6	Water flea	Experimental	48 hours	Effect Concentration 50%	1.21 mg/l
PHENOXY ETHYL ACRYLATE	48145-04-6	Green algae	Experimental	72 hours	Effect Concentration 10%	0.71 mg/l
Siloxanes and Silicones, 3-[3-(acetyloxy)-2-hydroxypropoxy]propyl Me, di-Me, 3-[2-hydroxy-3-[(1-oxo-2-propenyl)oxy]propoxy]propyl Me	125455-51-8	Water flea	Experimental	48 hours	Effect Concentration 50%	>100 mg/l
Acrylic Acid	79-10-7	Activated sludge	Experimental	30 minutes	No obs Effect Conc	100 mg/l
Acrylic Acid	79-10-7	Green algae	Experimental	72 hours	Effect Concentration 50%	0.13 mg/l
Acrylic Acid	79-10-7	Rainbow Trout	Experimental	96 hours	Lethal Concentration 50%	27 mg/l
Acrylic Acid	79-10-7	Water flea	Experimental	48 hours	Effect Concentration 50%	95 mg/l
Acrylic Acid	79-10-7	Green algae	Experimental	72 hours	Effect Concentration 10%	0.03 mg/l
Acrylic Acid	79-10-7	Water flea	Experimental	21 days	No obs Effect Conc	3.8 mg/l
Toluene	108-88-3	Activated sludge	Experimental	12 hours	Inhibitory Concentration	292 mg/l

					50%	
Toluene	108-88-3	Bacteria	Experimental	3 hours	Effect Concentration 50%	193 mg/l
Toluene	108-88-3	Coho Salmon	Experimental	96 hours	Lethal Concentration 50%	5.5 mg/l
Toluene	108-88-3	Fish other	Experimental	96 hours	Lethal Concentration 50%	6.41 mg/l
Toluene	108-88-3	Green Algae	Experimental	72 hours	Effect Concentration 50%	12.5 mg/l
Toluene	108-88-3	Water flea	Experimental	48 hours	Effect Concentration 50%	3.78 mg/l
Toluene	108-88-3	Coho salmon	Experimental	40 days	No obs Effect Conc	3.2 mg/l
Toluene	108-88-3	Water flea	Experimental	7 days	No obs Effect Conc	0.74 mg/l

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Urethane acrylate oligomer	72162-39-1	Data not availbl-insufficient			N/A	
VINYLCAPROLACTAM	2235-00-9	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	30-40 % weight	OECD 301A - DOC Die Away Test
Amine modified acrylic oligomer	67906-98-3	Data not availbl-insufficient			N/A	
1,6-HEXANEDIOL DIACRYLATE	13048-33-4	Experimental Biodegradation	28 days	Carbon dioxide evolution	60-70 % weight	OECD 310 CO2 Headspace
2-ETHYLHEXYL ACRYLATE	103-11-7	Experimental Biodegradation	28 days	Biological Oxygen Demand	70-80 % BOD/ThBOD	Non-standard method
CURING AGENT (NJTSRN 04499600-6673)	Trade Secret	Experimental Biodegradation	28 days	Carbon dioxide evolution	≥73 % weight	Non-standard method
TETRAHYDROFURFURYL ACRYLATE	2399-48-6	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	0.81	Non-standard method
TETRAHYDROFURFURYL ACRYLATE	2399-48-6	Experimental Biodegradation	28 days	Biological Oxygen Demand	77.7 % BOD/ThBOD	OECD 301F - Manometric Respiro
DIETHYLENE GLYCOL	7328-17-8	Experimental Biodegradation	28 days	Carbon dioxide evolution	98 %CO2 evolution/THC	OECD 301B - Mod. Sturm or CO2

ETHYL ETHER ACRYLATE					O2 evolution	
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	Experimental Biodegradation	29 days	Carbon dioxide evolution	0 %CO2 evolution/THCO2 evolution	OECD 301B - Mod. Sturm or CO2
POLY(DIMETHYLSILOXANE)	63148-62-9	Data not availbl-insufficient			N/A	
TRIAZINE DERIVATIVE	Trade Secret	Experimental Biodegradation	28 days	Carbon dioxide evolution	4 %CO2 evolution/THCO2 evolution	OECD 301B - Mod. Sturm or CO2
UV ABSORBERS (NJTSRN 04499600-6672)	Trade Secret	Estimated Biodegradation	28 days	Biological Oxygen Demand	6 % weight	OECD 301C - MITI (I)
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	Experimental Biodegradation	28 days	Biological Oxygen Demand	≤10 % BOD/ThBOD	OECD 301F - Manometric Respiro
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	2162-74-5	Experimental Hydrolysis		Hydrolytic half-life	14.96 days (t 1/2)	Non-standard method
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	2162-74-5	Experimental Biodegradation	28 days	Biological Oxygen Demand	1 % BOD/ThBOD	Non-standard method
PHENOXY ETHYL ACRYLATE	48145-04-6	Estimated Photolysis		Photolytic half-life (in air)	9.7 hours (t 1/2)	Non-standard method
PHENOXY ETHYL ACRYLATE	48145-04-6	Experimental Biodegradation	28 days	Biological Oxygen Demand	22.3 % BOD/ThBOD	OECD 301D - Closed Bottle Test
Siloxanes and Silicones, 3-[3-(acetyloxy)-2-hydroxypropoxy]propyl Me, di-Me, 3-[2-	125455-51-8	Data not availbl-insufficient			N/A	

hydroxy-3-[(1-oxo-2-propenyl)oxy]propoxy]propyl Me						
Acrylic Acid	79-10-7	Estimated Photolysis		Photolytic half-life (in air)	3.2 days (t 1/2)	Non-standard method
Acrylic Acid	79-10-7	Experimental Biodegradation	28 days	Biological Oxygen Demand	81 % BOD/ThBOD	OECD 301D - Closed Bottle Test
Toluene	108-88-3	Experimental Photolysis		Photolytic half-life (in air)	5.2 days (t 1/2)	Non-standard method
Toluene	108-88-3	Experimental Biodegradation	20 days	Biological Oxygen Demand	80 % BOD/ThBOD	

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Urethane acrylate oligomer	72162-39-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
VINYLCAPROLACTAM	2235-00-9	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.2	Non-standard method
Amine modified acrylic oligomer	67906-98-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
1,6-HEXANEDIOL DIACRYLATE	13048-33-4	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.81	Non-standard method
2-ETHYLHEXYL ACRYLATE	103-11-7	Estimated Bioconcentration		Bioaccumulation Factor	270	Est: Bioconcentration factor
CURING AGENT (NJTSRN 04499600-6673)	Trade Secret	Experimental BCF-Carp	56 days	Bioaccumulation Factor	4-12	OECD 305E-Bioaccum Fl-thru fis
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	7328-17-8	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.105	Non-standard method
N,N'-BIS(2,2,6,6-TETRAMETHYL-4-PIPERIDINYL)-1,6-HEXANEDIA	193098-40-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

MINE, POLYMERS W/MORPHOLINE-2,4,6-TRICHLORO-1,3,5-TRIAZINE RCTN PROD, METHYLATED						
POLY(DIMETHYLSILOXANE)	63148-62-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
TRIAZINE DERIVATIVE	Trade Secret	Experimental BCF-Carp	28 days	Bioaccumulation Factor	29	OECD 305E-Bioaccum Fl-thru fis
UV ABSORBERS (NJTSRN 04499600-6672)	Trade Secret	Experimental BCF - Other		Bioaccumulation Factor	<4	Non-standard method
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	Experimental BCF-Carp	56 days	Bioaccumulation Factor	≤40	
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	2162-74-5	Estimated Bioconcentration		Bioaccumulation Factor	13	Est: Bioconcentration factor
PHENOXY ETHYL ACRYLATE	48145-04-6	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.58	Non-standard method
Siloxanes and Silicones, 3-[3-(acetyloxy)-2-hydroxypropoxy]propyl Me, di-Me, 3-[2-hydroxy-3-[(1-oxo-2-propenyl)oxy]propoxy]propyl Me	125455-51-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Acrylic Acid	79-10-7	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	0.46	Non-standard method
Toluene	108-88-3	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.73	Non-standard method

12.4. Mobility in soil
Please contact manufacturer for more details

12.5 Other adverse effects
No information available

SECTION 13: Disposal considerations

13.1. Disposal methods

According to the Environmental Quality (Scheduled Wastes) Regulations 2005, scheduled waste has to be sent to a prescribed premise for recycling, treatment or disposal. Please approach Kualiti Alam for proper schedule waste classification and disposal.

SECTION 14: Transport Information

Marine Transport (IMDG)

UN Number: None assigned.
Proper Shipping Name: None assigned.
Technical Name: None assigned.
Hazard Class/Division: None assigned.
Subsidiary Risk: None assigned.
Packing Group: None assigned.
Limited Quantity: None assigned.
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
Not restricted, as per IMDG code 2.10.2.7, marine pollutant exception.

Air Transport (IATA)

UN Number: None assigned.
Proper Shipping Name: None assigned.
Technical Name: None assigned.
Hazard Class/Division: None assigned.
Subsidiary Risk: None assigned.
Packing Group: None assigned.
Limited Quantity: None assigned.
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
Not restricted, as per Special Provision A197, environmentally hazardous substance exception.

Transportation classifications are provided as a customer service. As for shipping, YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M's transportation classifications are based on product formulation, packaging, 3M policies and 3M's understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and not the packaging, labeling or marking requirements. The above information is only for reference. If you are shipping by air or ocean, YOU are advised to check & meet applicable regulatory requirements.

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. The components of this material are in compliance with the provisions of the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Japan Chemical Substance 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.

SECTION 16: Other information

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications.

3M Malaysia SDSs are available at www.3M.com.my