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

For Industrial or Professional use only

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.
Acute Toxicity (dermal): Category 4.
Skin Corrosion/Irritation: Category 2.
Serious Eye Damage/Irritation: Category 1.
Skin Sensitizer: Category 1.
Carcinogenicity: Category 2.
Reproductive Toxicity: Category 1B.
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 + H312	Harmful if swallowed or in contact with skin.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure: respiratory system.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention:

P201	Obtain special instructions before use.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P273	Avoid release to the environment.
P280I	Wear protective gloves, eye protection, face protection, and respiratory protection.
P281	Use personal protective equipment as required.

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.
P310	Immediately call a POISON CENTER or doctor.
P333 + P313	If skin irritation or rash occurs: Get medical attention.

Disposal:

P501	Dispose of contents and container in accordance with applicable local, regional, national, and 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
VINYLCAPROLACTAM	2235-00-9	30 - 60

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	15 - 40
CURING AGENT	Trade Secret	20 - < 25
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	67906-98-3	5 - < 10
2-Ethylhexyl acrylate	103-11-7	3 - 7
1,6-hexanediol diacrylate	13048-33-4	3 - 7
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	1 - 5
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	7328-17-8	1 - 5
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 - 5
TETRAHYDROFURFURYL ACRYLATE	2399-48-6	1 - 5
POLY(DIMETHYLSILOXANE)	63148-62-9	< 2
TRIAZINE DERIVATIVE	Trade Secret	< 2
UV ABSORBERS	Trade Secret	0.5 - 1.5
PHENOXY ETHYL ACRYLATE	48145-04-6	0.5 - 1.5
Caprolactam	105-60-2	0.1 - 1.5
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	2162-74-5	0.1 - < 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	0.1 - < 1

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:
Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:
Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

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

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

Allergic skin reaction (redness, swelling, blistering, and itching). Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of vision). 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
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. 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 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
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 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
Caprolactam	105-60-2	ACGIH	TWA(inhalable fraction and vapor):5 mg/m3	A5: Not suspected human carcin
Caprolactam	105-60-2	Malaysia OELs	TWA(as vapor)(8 hours):23 mg/m3(5 ppm);TWA(as particulate)(8 hours):1 mg/m3	
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

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
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
Color	Colorless
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	<=1 [*Ref Std:*BUOAC=1]
Flammability	Not Applicable
Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*
Vapor Pressure	<=1,333.2 Pa [@ 20 ºC]
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*
Kinematic Viscosity	2,307,692 mm2/sec
Volatile Organic Compounds	< 10 g/l
Percent volatile	*No Data Available*
VOC Less H2O & Exempt Solvents	< 10 g/l
Molecular weight	*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
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. May cause additional health effects (see below).

Skin Contact:
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 ATE >1,000 - =2,000 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 >300 - =2,000 mg/kg
VINYLCAPROLACTAM	Dermal	Rabbit	LD50 1,700 mg/kg
VINYLCAPROLACTAM	Ingestion	Rat	LD50 1,049 mg/kg
CURING AGENT	Dermal	Rat	LD50 > 5,000 mg/kg
CURING AGENT	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 1 mg/l
CURING AGENT	Ingestion	Rat	LD50 2,500 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
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
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
UV ABSORBERS	Dermal	Rat	LD50 > 2,000 mg/kg
UV ABSORBERS	Ingestion	Rat	LD50 > 2,000 mg/kg
POLY(DIMETHYLSILOXANE)	Dermal	Multiple animal species	LD50 > 2,000 mg/kg
POLY(DIMETHYLSILOXANE)	Ingestion	Rat	LD50 > 5,000 mg/kg

Caprolactam	Dermal	Rat	LD50 > 2,000 mg/kg
Caprolactam	Inhalation-Dust/Mist (4 hours)	Rat	LC50 8.2 mg/l
Caprolactam	Ingestion	Rat	LD50 1,475 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
Siloxanes and Silicones, 3-[3-(acetyloxy)-2-hydroxypropoxy]propyl Me, di-Me, 3-[2-hydroxy-3-[(1-oxo-2-propenyl)oxy]propoxy]propyl Me	Dermal	similar compounds	LD50 > 5,000 mg/kg
Siloxanes and Silicones, 3-[3-(acetyloxy)-2-hydroxypropoxy]propyl Me, di-Me, 3-[2-hydroxy-3-[(1-oxo-2-propenyl)oxy]propoxy]propyl Me	Ingestion	similar compounds	LD50 > 2,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
VINYLCAPROLACTAM	Rabbit	Minimal 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
CURING AGENT	Rabbit	No significant irritation
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	similar compounds	Irritant
2-Ethylhexyl acrylate	Rabbit	Irritant
1,6-hexanediol diacrylate	Rabbit	Irritant
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	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
UV ABSORBERS	Rabbit	No significant irritation
POLY(DIMETHYLSILOXANE)	Human and animal	No significant irritation
Caprolactam	official classification	Irritant
PHENOXY ETHYL ACRYLATE	Rabbit	No significant irritation
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	Rat	Minimal irritation
Siloxanes and Silicones, 3-[3-(acetyloxy)-2-hydroxypropoxy]propyl Me, di-Me, 3-[2-hydroxy-3-[(1-oxo-2-propenyl)oxy]propoxy]propyl Me	similar compounds	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
VINYLCAPROLACTAM	Rabbit	Severe 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
CURING AGENT	Rabbit	Mild irritant
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	similar compounds	Severe irritant
2-Ethylhexyl acrylate	Rabbit	No significant irritation
1,6-hexanediol diacrylate	Rabbit	Moderate irritant
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Rabbit	No significant irritation
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
UV ABSORBERS	Rabbit	No significant irritation
POLY(DIMETHYLSILOXANE)	Rabbit	No significant irritation
Caprolactam	official classification	Severe irritant
PHENOXY ETHYL ACRYLATE	Rabbit	No significant irritation
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	Rabbit	Mild irritant
Siloxanes and Silicones, 3-[3-(acetyloxy)-2-hydroxypropoxy]propyl Me, di-Me, 3-[2-hydroxy-3-[(1-oxo-2-propenyl)oxy]propoxy]propyl Me	similar compounds	No significant irritation

Sensitization:

Skin Sensitization

Name	Species	Value
VINYLCAPROLACTAM	Mouse	Sensitizing
CURING AGENT	Guinea pig	Not classified
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	similar compounds	Sensitizing
2-Ethylhexyl acrylate	Human and animal	Sensitizing
1,6-hexanediol diacrylate	Guinea pig	Sensitizing
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Mouse	Sensitizing
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
UV ABSORBERS	Guinea pig	Not classified
POLY(DIMETHYLSILOXANE)	Human and animal	Not classified
Caprolactam	Guinea pig	Not classified
PHENOXY ETHYL ACRYLATE	Guinea pig	Sensitizing
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	Guinea pig	Not classified
Siloxanes and Silicones, 3-[3-(acetyloxy)-2-hydroxypropoxy]propyl Me, di-Me, 3-[2-hydroxy-3-[(1-oxo-2-propenyl)oxy]propoxy]propyl Me	similar compounds	Sensitizing

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

CURING AGENT	In Vitro	Not mutagenic
CURING AGENT	In vivo	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
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	In Vitro	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
UV ABSORBERS	In Vitro	Not mutagenic
POLY(DIMETHYLSILOXANE)	In Vitro	Not mutagenic
POLY(DIMETHYLSILOXANE)	In vivo	Not mutagenic
Caprolactam	In Vitro	Not mutagenic
Caprolactam	In vivo	Not mutagenic
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
2-Ethylhexyl acrylate	Dermal	Mouse	Carcinogenic
1,6-hexanediol diacrylate	Dermal	Mouse	Not carcinogenic
POLY(DIMETHYLSILOXANE)	Dermal	Mouse	Not carcinogenic
POLY(DIMETHYLSILOXANE)	Ingestion	Mouse	Not carcinogenic
Caprolactam	Ingestion	Multiple animal species	Not carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
CURING AGENT	Ingestion	Not classified for development	Rat	NOAEL 900 mg/kg/day	during gestation
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
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
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
POLY(DIMETHYLSILOXANE)	Ingestion	Not classified for development	Rat	NOAEL 3,800 mg/kg/day	during organogenesis
POLY(DIMETHYLSILOXANE)	Dermal	Not classified for development	Rabbit	NOAEL 1,000 mg/kg/day	during organogenesis
Caprolactam	Ingestion	Not classified for female reproduction	Rat	NOAEL 833 mg/kg/day	3 generation

Caprolactam	Ingestion	Not classified for male reproduction	Rat	NOAEL 833 mg/kg/day	3 generation
Caprolactam	Ingestion	Not classified for development	Rabbit	NOAEL 50 mg/kg/day	during organogenesis
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

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
VINYLCAPROLACTAM	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rat	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	
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	
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	
Caprolactam	Inhalation	respiratory irritation	May cause respiratory irritation	Human	LOAEL 0.056 mg/l	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 |	Not classified	Rat	NOAEL 0.18 mg/l	90 days

		eyes				
VINYLCAPROLACTAM	Ingestion	liver	Not classified	Rat	NOAEL 260 mg/kg/day	3 months
CURING AGENT	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
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 acrylate	Inhalation	respiratory system	Not classified	Rat	NOAEL 0.75 mg/l	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 | blood | liver | kidney and/or bladder | 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
UV ABSORBERS	Ingestion	hematopoietic system | nervous system | kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
POLY(DIMETHYLSILOXANE)	Ingestion	eyes	Not classified	Rat	NOAEL 10% in the diet	90 days
POLY(DIMETHYLSILOXANE)	Ingestion	respiratory system	Not classified	Rat	NOAEL 1% in the diet	90 days
POLY(DIMETHYLSILOXANE)	Ingestion	gastrointestinal tract	Not classified	Multiple animal species	NOAEL 10% in the diet	90 days
POLY(DIMETHYLSILOXANE)	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 10% in the diet	90 days
POLY(DIMETHYLSILOXANE)	Ingestion	heart | liver | kidney and/or bladder | vascular system	Not classified	Rat	NOAEL 1% in the diet	90 days
Caprolactam	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 0.07 mg/l	13 weeks
Caprolactam	Inhalation	nervous system | eyes	Not classified	Rat	NOAEL 0.243 mg/l	13 weeks
Caprolactam	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 33 mg/kg/day	90 days
Caprolactam	Ingestion	endocrine system | liver | nervous system	Not classified	Rat	NOAEL 1,333 mg/kg/day	90 days
Caprolactam	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 667 mg/kg/day	90 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

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

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
VINYLCAPROLACTAM	2235-00-9	Bacteria	Experimental	17 hours	EC50	622 mg/l
VINYLCAPROLACTAM	2235-00-9	Green algae	Experimental	72 hours	ErC50	>100 mg/l
VINYLCAPROLACTAM	2235-00-9	Water flea	Experimental	48 hours	EC50	>100 mg/l
VINYLCAPROLACTAM	2235-00-9	Zebra Fish	Experimental	96 hours	LC50	307 mg/l
VINYLCAPROLACTAM	2235-00-9	Green algae	Experimental	72 hours	NOEC	25 mg/l
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	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
CURING AGENT	Trade Secret	Activated sludge	Experimental	3 hours	EC10	>100 mg/l
CURING AGENT	Trade Secret	Green algae	Experimental	72 hours	ErC50	14.4 mg/l
CURING AGENT	Trade Secret	Water flea	Experimental	48 hours	EC50	53.9 mg/l
CURING AGENT	Trade Secret	Zebra Fish	Experimental	96 hours	LC50	24 mg/l
CURING AGENT	Trade Secret	Green algae	Experimental	72 hours	EC10	2.51 mg/l
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	67906-98-3	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
1,6-hexanediol diacrylate	13048-33-4	Green algae	Experimental	72 hours	EC50	2.33 mg/l
1,6-hexanediol diacrylate	13048-33-4	Medaka	Experimental	96 hours	LC50	0.38 mg/l
1,6-hexanediol diacrylate	13048-33-4	Water flea	Experimental	48 hours	EC50	2.7 mg/l

1,6-hexanediol diacrylate	13048-33-4	Green algae	Experimental	72 hours	NOEC	0.9 mg/l
1,6-hexanediol diacrylate	13048-33-4	Medaka	Experimental	39 days	NOEC	0.072 mg/l
1,6-hexanediol diacrylate	13048-33-4	Water flea	Experimental	21 days	NOEC	0.14 mg/l
1,6-hexanediol diacrylate	13048-33-4	Activated sludge	Experimental	30 minutes	EC50	270 mg/l
2-Ethylhexyl acrylate	103-11-7	Green algae	Experimental	72 hours	ErC50	1.71 mg/l
2-Ethylhexyl acrylate	103-11-7	Rainbow Trout	Experimental	96 hours	LC50	1.81 mg/l
2-Ethylhexyl acrylate	103-11-7	Water flea	Experimental	48 hours	EC50	1.3 mg/l
2-Ethylhexyl acrylate	103-11-7	Green algae	Experimental	72 hours	ErC10	0.8 mg/l
2-Ethylhexyl acrylate	103-11-7	Water flea	Experimental	21 days	EC10	0.85 mg/l
2-Ethylhexyl acrylate	103-11-7	Activated sludge	Experimental	30 minutes	EC20	>1,000 mg/l
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	Activated sludge	Experimental	3 hours	EC20	>1,000 mg/l
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	Common Carp	Experimental	96 hours	LC50	1.4 mg/l
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	Green algae	Experimental	72 hours	EC50	>2.01 mg/l
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	Water flea	Experimental	48 hours	EC50	3.53 mg/l
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	Green algae	Experimental	72 hours	EC10	1.56 mg/l
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	7328-17-8	Golden Orfe	Experimental	96 hours	LC50	10 mg/l
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	7328-17-8	Green algae	Experimental	72 hours	ErC50	3.2 mg/l
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	7328-17-8	Water flea	Experimental	48 hours	EC50	10.56 mg/l
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	7328-17-8	Green algae	Experimental	72 hours	NOEC	<1 mg/l
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	7328-17-8	Activated sludge	Experimental	3 hours	EC50	770 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	EC50	>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	EC50	>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	LC50	>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, METHYLATED	193098-40-7	Water flea	Experimental	48 hours	EC50	0.64 mg/l
TETRAHYDROFURFURYL ACRYLATE	2399-48-6	Activated sludge	Experimental	3 hours	EC50	263.7 mg/l
TETRAHYDROFURFURYL ACRYLATE	2399-48-6	Green algae	Experimental	72 hours	EC50	3.92 mg/l
TETRAHYDROFURFURYL ACRYLATE	2399-48-6	Water flea	Experimental	48 hours	EC50	37.7 mg/l
TETRAHYDROFURFURYL ACRYLATE	2399-48-6	Zebra Fish	Experimental	96 hours	LC50	7.32 mg/l
TETRAHYDROFURFURYL ACRYLATE	2399-48-6	Green algae	Experimental	72 hours	EC10	2.48 mg/l
POLY(DIMETHYLSILOXANE)	63148-62-9	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
TRIAZINE DERIVATIVE	Trade Secret	Activated sludge	Experimental	3 hours	EC50	>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
Caprolactam	105-60-2	Bacteria	Experimental	17 hours	EC50	4,200 mg/l

Caprolactam	105-60-2	Green algae	Experimental	72 hours	ErC50	4,550 mg/l
Caprolactam	105-60-2	Rainbow Trout	Experimental	96 hours	LC50	>500 mg/l
Caprolactam	105-60-2	Water flea	Experimental	48 hours	EC50	2,430 mg/l
Caprolactam	105-60-2	Green algae	Experimental	72 hours	NOEC	1,000 mg/l
Caprolactam	105-60-2	Water flea	Experimental	21 days	NOEC	>100 mg/l
PHENOXY ETHYL ACRYLATE	48145-04-6	Activated sludge	Experimental	3 hours	EC50	177 mg/l
PHENOXY ETHYL ACRYLATE	48145-04-6	Golden Orfe	Experimental	96 hours	LC50	10 mg/l
PHENOXY ETHYL ACRYLATE	48145-04-6	Green algae	Experimental	72 hours	EC50	4.4 mg/l
PHENOXY ETHYL ACRYLATE	48145-04-6	Water flea	Experimental	48 hours	EC50	1.21 mg/l
PHENOXY ETHYL ACRYLATE	48145-04-6	Green algae	Experimental	72 hours	EC10	0.71 mg/l
UV ABSORBERS	Trade Secret	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
UV ABSORBERS	Trade Secret	Water flea	Experimental	48 hours	No tox obs at lmt of water sol	>100 mg/l
UV ABSORBERS	Trade Secret	Zebra Fish	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
UV ABSORBERS	Trade Secret	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
UV ABSORBERS	Trade Secret	Rainbow Trout	Experimental	96 days	No tox obs at lmt of water sol	>100 mg/l
UV ABSORBERS	Trade Secret	Water flea	Experimental	21 days	No tox obs at lmt of water sol	>100 mg/l
UV ABSORBERS	Trade Secret	Activated sludge	Experimental	3 hours	IC50	>1,000 mg/l
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	2162-74-5	Activated sludge	Experimental	3 hours	EC50	>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-DIISOPROPYLPHENYL)CARBODIIMIDE	2162-74-5	Rainbow Trout	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
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
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	EC50	>100 mg/l

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
VINYLCAPROLACTAM	2235-00-9	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	30-40 %removal of DOC	OECD 301A - DOC Die Away Test
VINYLCAPROLACTAM	2235-00-9	Experimental Biodegradation		Dissolv. Organic Carbon Deplet	98 %removal of DOC	OECD 302B Zahn-Wellens/EVPA
VINYLCAPROLACTAM	2235-00-9	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	>1 years (t 1/2)	OECD 111 Hydrolysis func of pH
VINYLCAPROLACTAM	2235-00-9	Experimental Hydrolysis		Hydrolytic half-life acidic pH	6.5 hours (t 1/2)	OECD 111 Hydrolysis func of pH
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	Data not availbl-insufficient	N/A	N/A	N/A	N/A
CURING AGENT	Trade Secret	Experimental Biodegradation	28 days	Carbon dioxide evolution	≥73 %CO2 evolution/THCO2 evolution	similar to EC C.4.C Biodeg
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	67906-98-3	Data not availbl-insufficient	N/A	N/A	N/A	N/A
1,6-hexanediol diacrylate	13048-33-4	Experimental Biodegradation	28 days	Carbon dioxide evolution	60-70 %CO2 evolution/THCO2 evolution	ISO 14593 Inorg C Headspace
1,6-hexanediol diacrylate	13048-33-4	Estimated Photolysis		Photolytic half-life (in air)	1 days (t 1/2)	Episuite™
2-Ethylhexyl acrylate	103-11-7	Experimental Biodegradation	15 days	Biological Oxygen Demand	70-80 %BOD/ThOD	EC C.4.D. Manometric Respirom
2-Ethylhexyl acrylate	103-11-7	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	210 hours (t 1/2)	40CFR 796.3500-Hydrolysis
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	Experimental Biodegradation	28 days	Biological Oxygen Demand	≤10 %BOD/ThOD	OECD 301F - Manometric Respiro
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	7328-17-8	Experimental Biodegradation	28 days	Carbon dioxide evolution	98 %CO2 evolution/THCO2 evolution	OECD 301B - Mod. Sturm or CO2
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	7328-17-8	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	313 days (t 1/2)	OECD 111 Hydrolysis func of pH
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	7328-17-8	Experimental Hydrolysis		Hydrolytic half-life basic pH	4.65 days (t 1/2)	OECD 111 Hydrolysis func of pH
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
TETRAHYDROF	2399-48-6	Experimental	28 days	Biological Oxygen	77.7 %BOD/ThOD	OECD 301F - Manometric

URFURYL ACRYLATE		Biodegradation		Demand		Respiro
TETRAHYDROFURFURYL ACRYLATE	2399-48-6	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	0.81	OECD 107 log Kow shke flsk mtd
POLY(DIMETHYLSILOXANE)	63148-62-9	Data not availbl-insufficient	N/A	N/A	N/A	N/A
TRIAZINE DERIVATIVE	Trade Secret	Experimental Biodegradation	28 days	Carbon dioxide evolution	4 %CO2 evolution/THCO2 evolution	OECD 301B - Mod. Sturm or CO2
Caprolactam	105-60-2	Experimental Biodegradation	14 days	Biological Oxygen Demand	82 %BOD/ThOD	OECD 301C - MITI (I)
PHENOXY ETHYL ACRYLATE	48145-04-6	Experimental Biodegradation	28 days	Biological Oxygen Demand	22.3 %BOD/ThOD	OECD 301D - Closed Bottle Test
PHENOXY ETHYL ACRYLATE	48145-04-6	Estimated Photolysis		Photolytic half-life (in air)	9.7 hours (t 1/2)	
UV ABSORBERS	Trade Secret	Experimental Biodegradation	28 days	Carbon dioxide evolution	2 %CO2 evolution/THCO2 evolution	OECD 301B - Mod. Sturm or CO2
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	2162-74-5	Experimental Biodegradation	28 days	Biological Oxygen Demand	1 %BOD/ThOD	
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	2162-74-5	Experimental Hydrolysis		Hydrolytic half-life	14.96 days (t 1/2)	
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 availbl-insufficient	N/A	N/A	N/A	N/A

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
VINYLCAPROLACTAM	2235-00-9	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.2	similar to OECD 107
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	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
CURING AGENT	Trade Secret	Experimental BCF - Fish	56 days	Bioaccumulation Factor	4-12	OECD305-Bioconcentration
CURING AGENT	Trade Secret	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.81	OECD 107 log Kow shke flsk mtd
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	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	

2-Ethylhexyl acrylate	103-11-7	Experimental BCF - Fish	28 days	Bioaccumulation Factor	347	OECD305-Bioconcentration
2-Ethylhexyl acrylate	103-11-7	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	4.64	similar to OECD 107
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	Experimental BCF - Fish	56 days	Bioaccumulation Factor	≤40	
DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	7328-17-8	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.105	OECD 117 log Kow HPLC method
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	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
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 - Fish	28 days	Bioaccumulation Factor	29	OECD305-Bioconcentration
TRIAZINE DERIVATIVE	Trade Secret	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	>6	OECD 107 log Kow shke flsk mtd
Caprolactam	105-60-2	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	0.12	
PHENOXY ETHYL ACRYLATE	48145-04-6	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.58	
UV ABSORBERS	Trade Secret	Experimental BCF - Fish	28 days	Bioaccumulation Factor	<4	OECD305-Bioconcentration
UV ABSORBERS	Trade Secret	Estimated Bioconcentration		Log of Octanol/H2O part. coeff	7.6	Episuite™
N,N'-BIS(2,6-DIISOPROPYLPHENYL)CARBODIIMIDE	2162-74-5	Estimated Bioconcentration		Bioaccumulation Factor	13	
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

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:UN3082
Proper Shipping Name:ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name: None assigned.
Hazard Class/Division:9
Subsidiary Risk: None assigned.
Packing Group:III
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:UN3082
Proper Shipping Name:ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name: None assigned.
Hazard Class/Division:9
Subsidiary Risk: None assigned.
Packing Group:III
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 in this Safety Data Sheet (SDS) 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 SDS or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own evaluation to satisfy themselves as to the suitability of the product for their own intended applications. In addition, this SDS is being provided to convey health and safety information. If you are the importer of record of this product into Malaysia, you are responsible for all applicable regulatory requirements, including, but not limited to, product registrations/notifications, substance volume tracking, and potential substance registration/notification.

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