

N3D-TOUGH784

1. PRODUCT AND COMPANY IDENTIFICATION**Company**

Arkema Inc.
900 First Avenue
King of Prussia, Pennsylvania 19406

Sartomer

Customer Service Telephone Number: (800) SARTOMER
(Monday through Friday, 8:00 AM to 5:00 PM EST)

Emergency Information

Transportation: CHEMTREC: (800) 424-9300
(24 hrs., 7 days a week)

Medical: Rocky Mountain Poison Center: (866) 767-5089
(24 hrs., 7 days a week)

Product Information

Product name: N3D-TOUGH784
Synonyms: Oligomer/monomer blend
Molecular formula: Proprietary mixture
Chemical family: methacrylates
Product use: 3D printing

SECTION 2: HAZARDS IDENTIFICATION**Emergency Overview**

Color: black
Physical state: liquid
Odor: Acrylates (slight)

***Classification of the substance or mixture:**

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin irritation, Category 2, H315
Eye irritation, Category 2A, H319
Skin sensitisation, Category 1, H317
Reproductive toxicity, Category 2, H361
Chronic aquatic toxicity, Category 3, H412

*For the full text of the H-Statements mentioned in this Section, see Section 16.

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GHS-Labeling

Hazard pictograms:



Signal word:

Warning**Hazard statements:**

- H315 : Causes skin irritation.
- H317 : May cause an allergic skin reaction.
- H319 : Causes serious eye irritation.
- H361 : Suspected of damaging fertility or the unborn child.
- H412 : Harmful to aquatic life with long lasting effects.

Supplemental Hazard Statements:

Processing may release vapors and/or fumes which cause eye, skin and respiratory tract irritation.

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Precautionary statements:**Prevention:**

- P201 : Obtain special instructions before use.
- P202 : Do not handle until all safety precautions have been read and understood.
- P261 : Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
- P264 : Wash skin thoroughly after handling.
- P272 : Contaminated work clothing should not be allowed out of the workplace.
- P273 : Avoid release to the environment.
- P280 : Wear eye protection and face protection.
- P280 : Wear protective gloves.
- P281 : Use personal protective equipment as required.

Response:

- P302 + P352 : IF ON SKIN: Wash with plenty of soap and water.
- P305 + P351 + P338 : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308 + P313 : IF exposed or concerned: Get medical advice/ attention.
- P333 + P313 : If skin irritation or rash occurs: Get medical advice/ attention.
- P337 + P313 : If eye irritation persists: Get medical advice/ attention.
- P362 : Take off contaminated clothing and wash before reuse.

Storage:

- P405 : Store locked up.

Disposal:

- P501 : Dispose of contents or container to an approved waste disposal plant.

Supplemental information:**Potential Health Effects:**

If swallowed may cause irritation of the digestive tract. Possible cross sensitization with other acrylates and methacrylates. Effects due to processing releases or residual monomer: Irritating to eyes, respiratory system and skin. May cause allergic respiratory reaction.
Prolonged or repeated exposure may cause: headache, drowsiness, nausea, weakness, (severity of effects depends on extent of exposure).

Medical conditions aggravated by overexposure:

Respiratory disease or diminished respiratory capacity. Asthma (Data for residual monomer that may be released during processing)

Other:

This product may release fume and/or vapor of variable composition depending on processing time and temperature. Possible release of traces of residual monomer. Isocyanates may cause acute irritation and/or sensitisation of the respiratory system leading to tightness of the chest, wheeziness and an asthmatic condition.

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS-No.	Wt/Wt	GHS Classification**
Methacrylate ester	Proprietary*	>= 30 - < 60 %	H317, H320
Urethane methacrylate	Proprietary*	>= 30 - < 60 %	H319, H315
Aliphatic urethane methacrylate	Proprietary*	>= 10 - < 30 %	H317, H411
Methacrylic ester	Proprietary*	>= 1 - < 5 %	H315, H319, H335, H412
Photoinitiator	Proprietary*	>= 1 - < 5 %	H317, H361, H411
Proprietary additive	Proprietary*	>= 1 - < 5 %	H412
UV stabilizer	Proprietary*	>= 0.1 - < 1 %	H317, H361, H400, H410
Light stabilizer	Proprietary*	>= 0.1 - < 1 %	H317, H361, H400, H410
Proprietary Stabilizer	Proprietary*	> 0.1 - < 1 %	H411, H400, H317

*The specific chemical identity is withheld because it is trade secret information of Arkema Inc.

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**For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES**4.1. Description of necessary first-aid measures:****Inhalation:**

If inhaled, remove victim to fresh air.

Skin:

In case of contact, immediately flush skin with soap and plenty of water. Get medical attention. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Ingestion:

If swallowed, DO NOT induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms/effects, acute and delayed:

For most important symptoms and effects (acute and delayed), see Section 2 (Hazard Statements and Supplemental Information if applicable) and Section 11 (Toxicology Information) of this SDS.

4.3. Indication of any immediate medical attention and special treatment needed:

Unless otherwise noted in Notes to Physician, no specific treatment noted; treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES**Extinguishing media (suitable):**

Water spray, Carbon dioxide (CO₂), Foam, Dry chemical

Protective equipment:

Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

Further firefighting advice:

Fight fire from a protected location.

Cool closed containers exposed to fire with water spray.

Closed containers of this material may explode when subjected to heat from surrounding fire.

Do not allow run-off from fire fighting to enter drains or water courses.

Fire fighting equipment should be thoroughly decontaminated after use.

Fire and explosion hazards:

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When burned, the following hazardous products of combustion can occur:

Carbon oxides

Nitrogen oxides

hydrogen cyanide

Isocyanates

Amines

phosphorous oxides

Hazardous organic compounds

Polymerization is exothermic and can degenerate into an uncontrolled reaction.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, Emergency procedures, Methods and materials for containment/clean-up:**

Prevent further leakage or spillage if you can do so without risk. Ventilate the area. Avoid generation of vapors. Contain and collect spillage with non-combustible absorbent material such as clean sand, earth, diatomaceous earth or non-acidic clay and place into suitable properly labeled containers for prompt disposal. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

Protective equipment:

Appropriate personal protective equipment is set forth in Section 8.

SECTION 7: HANDLING AND STORAGE**Handling****General information on handling:**

Do not taste or swallow.

Avoid contact with skin, eyes and clothing.

Avoid breathing vapor or mist.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

Emptied container retains vapor and product residue.

Observe all labeled safeguards until container is cleaned, reconditioned or destroyed.

Storage**General information on storage conditions:**

Keep in a dry, cool place. Store in closed containers, in a secure area to prevent container damage and subsequent spillage. Store out of direct sunlight in a cool well-ventilated place. Keep stabilizer levels constant to avoid explosive polymerization. An air space is required above the liquid in all containers; avoid storage under an oxygen-free atmosphere.

Storage stability – Remarks:

Inhibitor levels should be maintained. The typical shelf-life for this product is 6 months.

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Storage incompatibility – General:

Store separate from:
Strong oxidizing agents
Strong reducing agents
Free radical generators
Inert gas
Oxygen scavenger.
Peroxides
Strong acids
Strong alkalis

Temperature tolerance – Do not store below:

32 °F (0 °C)

Temperature tolerance – Do not store above:

100 °F (38 °C)

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**Airborne Exposure Guidelines:****Engineering controls:**

Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

Respiratory protection:

Avoid breathing vapor or mist. Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

Skin protection:

Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove material for given application. Avoid natural rubber gloves. Wear chemical goggles, a face shield, and chemical resistant clothing such as a rubber apron when splashing may occur. Rinse immediately if skin is contaminated. Remove contaminated clothing immediately and wash before reuse. Clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash thoroughly after handling.

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Eye protection:

Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment immediately available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Color:	black
Physical state:	liquid
Odor:	Acrylates (slight)
Odor threshold:	No data available.
Flash point	No data available
Auto-ignition temperature:	No data available.
Lower flammable limit (LFL):	No data available.
Upper flammable limit (UFL):	No data available.
pH:	No data available.
Density:	No data available.
Specific Gravity (Relative density):	No data available
Vapor pressure:	No data available.
Vapor density:	No data available.
Boiling point/boiling range:	No data available.
Melting point/range:	No data available.
Freezing point:	No data available.
Evaporation rate:	No data available.
Solubility in water:	No data available.
Viscosity, dynamic:	900 CPS 77 °F (25 °C)
Oil/water partition coefficient:	No data available.

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Thermal decomposition: No data available.

Flammability: See GHS Classification in Section 2 if applicable

SECTION 10: STABILITY AND REACTIVITY**Stability:**

This material is chemically stable under normal and anticipated storage, handling and processing conditions. However, this material can undergo hazardous polymerization.

Hazardous reactions:

Hazardous polymerisation may occur.
Polymerization is exothermic and can degenerate into an uncontrolled reaction.

Materials to avoid:

Strong reducing agents
Free radical generators
Inert gas
Oxygen scavenger.
Peroxides
Strong oxidizing agents
Strong acids
Strong alkalies

Conditions / hazards to avoid:

This material polymerizes exothermically in the presence of heat, contamination, oxygen free atmosphere, free radicals, peroxides and inhibitor depletion liberating heat. Avoid direct sunlight. Do NOT expose to ultraviolet light.

Hazardous decomposition products:

Thermal decomposition giving flammable and toxic products :
Carbon oxides
Acrylates
Methacrylates
Amines
Nitrogen oxides (NOx)
Isocyanates
hydrogen cyanide
phosphorous oxides
Hazardous organic compounds

SECTION 11: TOXICOLOGICAL INFORMATION

Data on this material and/or its components are summarized below.

Data for N3D-TOUGH784**Acute toxicity**

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Oral:

Practically nontoxic. Acute toxicity estimate > 5,000 mg/kg.

Data for Methacrylate ester (Proprietary)**Acute toxicity****Oral:**

Practically nontoxic. (rat) LD50 = 5,564 mg/kg.

Dermal:

Practically nontoxic. (rabbit) LD50 > 5,000 mg/kg. (data for a similar material)

Skin Irritation:

Practically non-irritating. (rabbit) (24 h) (occluded exposure)

Eye Irritation:

Causes eye irritation. (rabbit)

Skin Sensitization:

May cause allergic skin reaction. Guinea pig maximization test. Skin allergy was observed.

Not a sensitizer. Buehler Test. (guinea pig) No skin allergy was observed.

Repeated dose toxicity

Repeated oral administration to rat / affected organ(s): liver, kidney / signs: changes in organ weights, changes in organ structure or function, clinical chemistry changes, changes in food or water consumption, reduced body weight

Repeated inhalation administration to rat / No adverse systemic effects reported.

Carcinogenicity

Chronic inhalation administration to rat and mouse / affected organ(s): upper respiratory tract, nasal cavity / signs: Irritation, nasal lesions affecting the sense of smell, hyperplasia / No increase in tumor incidence was reported. (data for a similar material)

Chronic drinking water administration to rat / No increase in tumor incidence was reported. (data for a similar material)

Genotoxicity**Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria

Both positive and negative responses for genetic changes were observed in laboratory tests using: animal cells, human cells

Genotoxicity**Assessment in Vivo:**

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No genetic changes were observed in laboratory tests using: rats, fruit flies

Developmental toxicity

Reproductive/Developmental Effects Screening Assay. Oral (rat) / No birth defects were observed.

Reproductive effects

Reproductive/Developmental Effects Screening Assay. Oral (rat) / No toxicity to reproduction.

Other information

Possible cross sensitization with other acrylates and methacrylates.

Human experience**Skin contact:**

Skin: contact dermatitis, redness, rash. Skin allergy was observed. (based on reports of occupational exposure to workers)

Data for Urethane methacrylate (Proprietary)**Acute toxicity****Skin Irritation:**

Causes skin irritation. (estimate based on composition)

Eye Irritation:

Causes serious eye irritation. (estimate based on composition)

Other information

The information presented is from representative materials in this chemical class. The results may vary depending on the test substance.

Effects due to processing releases or residual monomer:

Possible cross sensitization with other acrylates and methacrylates.

Data for Aliphatic urethane methacrylate (Proprietary)**Acute toxicity****Oral:**

Practically nontoxic. (rat) LD50 > 5,000 mg/kg.

Dermal:

No deaths occurred. (rabbit) LD0 > 2,000 mg/kg.

Skin Irritation:

Not irritating. (rabbit) (4 h) (occluded exposure)

Eye Irritation:

Not irritating. (rabbit)

Skin Sensitization:

May cause allergic skin reaction. LLNA: Local Lymph Node Assay. (mouse) Skin allergy was observed.

Repeated dose toxicity

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Subchronic oral administration to rat / affected organ(s): Liver / signs: changes in organ weights

Genotoxicity**Assessment in Vitro:**

No genetic changes were observed in a laboratory test using: bacteria, animal cells

Reproductive effects

Reproductive/Developmental Effects Screening Assay. Oral (rat) / No toxicity to reproduction.

Data for Methacrylic ester (Proprietary)**Acute toxicity****Oral:**

May be harmful if swallowed. (rat) LD50 = 4,900 mg/kg.

Dermal:

May be harmful in contact with skin. (rabbit) LD50 > 3,000 mg/kg.

Specific target organ toxicity - single exposure:

May cause respiratory irritation.

Skin Irritation:

Causes mild skin irritation. (rabbit)

Eye Irritation:

Not irritating. (rabbit) (data for a similar material)

Skin Sensitization:

Not a sensitizer. Guinea pig maximization test. No skin allergy was observed.

Repeated dose toxicity

Subchronic dietary administration to rat / affected organ(s): liver, kidney, bone marrow / signs: changes in organ weights, changes in organ structure or function

Repeated oral administration to rat / affected organ(s): liver, kidney / signs: changes in organ weights, changes in organ structure or function, hyaline droplet nephropathy

Subchronic dietary administration to dog / affected organ(s): kidney / signs: changes in organ structure or function

Genotoxicity**Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria, animal cells, human cells

Reproductive effects

Reproductive/Developmental Effects Screening Assay. Oral (rat) / No toxicity to reproduction.

Human experience

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Skin contact:

Possible cross sensitization with other acrylates and methacrylates.

Data for Photoinitiator (Proprietary)**Acute toxicity****Oral:**

Practically nontoxic. (rat) LD50 > 5,000 mg/kg.

Dermal:

No deaths occurred. (rat) LD0 > 2,000 mg/kg.

Skin Irritation:

Practically non-irritating. (rabbit) (24 h) (occluded exposure)

Eye Irritation:

Causes mild eye irritation. (rabbit)

Skin Sensitization:

May cause allergic skin reaction. LLNA: Local Lymph Node Assay. (mouse) Skin allergy was observed.

Repeated dose toxicity

Repeated oral administration to rat / affected organ(s): kidney, liver, testes / signs: decreased growth rate, changes in organ structure or function, changes in organ weights

Subchronic oral administration to rat / affected organ(s): testes / signs: atrophy, blood chemistry changes

Genotoxicity**Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria, animal cells

Developmental toxicity

Embryo-foetal development. Oral (rabbit, rat) / Absence of toxic effects for foetal development at non toxic maternal doses

Reproductive effects

Reproductive/Developmental Effects Screening Assay. Oral (rat) / Testicular toxicity

Data for Proprietary additive (Proprietary)**Acute toxicity****Oral:**

May be harmful if swallowed. (rat) LD50 > 2,500 mg/kg.

Dermal:

Practically nontoxic. (rat) LD50 > 5,000 mg/kg.

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Inhalation:

No deaths occurred. (rat) 4 h LC0 > 1 mg/l. (dust/mist)

Skin Irritation:

Practically non-irritating. (rabbit) (4 h) (occluded exposure)

Eye Irritation:

Causes mild eye irritation. (rabbit)

Skin Sensitization:

Not a sensitizer. Guinea pig maximization test. No skin allergy was observed.

Repeated dose toxicity

Subchronic oral administration to rat / affected organ(s): Thyroid, kidney, liver, forestomach / signs: changes in organ structure or function

Genotoxicity**Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria, animal cells

Genotoxicity**Assessment in Vivo:**

No genetic changes were observed in a laboratory test using: hamster

Developmental toxicity

Exposure during pregnancy. Oral (rat) / No birth defects were observed.

Reproductive effects

Extended One-Generation Reproductive Toxicity Study. Oral (rat) / No toxicity to reproduction.

Data for Proprietary Stabilizer (Proprietary)**Acute toxicity****Oral:**

May be harmful if swallowed. (rat) LD50 = 3,230 mg/kg.

Dermal:

May be harmful in contact with skin. (rat) LD0 > 3,170 mg/kg.

Skin Irritation:

Causes mild skin irritation. (rabbit) (24 h)

Eye Irritation:

Not irritating. (rabbit)

Skin Sensitization:

May cause an allergic skin reaction. (guinea pig) (Strong sensitizer)

Repeated dose toxicity

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Repeated dietary administration to rat / signs: changes in body weight, clinical chemistry changes, changes in organ weights

Subchronic dietary administration to rat / signs: changes in body weight, changes in organ weights

Genotoxicity**Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria, animal cells, human cells

Genotoxicity**Assessment in Vivo:**

No genetic changes were observed in a laboratory test using: mice

Developmental toxicity

Exposure during pregnancy. Oral (rat) / No birth defects were observed.

Reproductive effects

Reproductive/Developmental Effects Screening Assay. Dietary (rat) / No effects on fertility / (Other effects also occurred in the parental animals at these doses.)

Two-generation study. Dietary (rat)(At high dose :, impaired pup growth and development, Other effects also occurred in the parental animals at these doses.)

Data for UV stabilizer (Proprietary)**Acute toxicity****Oral:**

May be harmful if swallowed. (rat) LD50 = 3,230 mg/kg.

Dermal:

No deaths occurred. (rat) LD0 > 3,170 mg/kg.

Skin Irritation:

Practically non-irritating. (rabbit) (24 h) (occluded exposure)

Eye Irritation:

Not irritating. (rabbit)

Skin Sensitization:

May cause an allergic skin reaction. Guinea pig maximization test. Skin allergy was observed. (Strong sensitizer, tested in a mixture with similar substance(s))

Repeated dose toxicity

Repeated oral administration to rat / affected organ(s): eye / signs: altered reflexes / (at high doses, tested in a mixture with similar substance(s))

Genotoxicity**Assessment in Vitro:**

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No genetic changes were observed in laboratory tests using: bacteria

Genetic changes were observed in a laboratory test using: animal cells

Genotoxicity**Assessment in Vivo:**

No genetic changes were observed in a laboratory test using: mice

Other information

The information presented is from representative materials in this chemical class. The results may vary depending on the test substance.

Data for Light stabilizer (Proprietary)**Acute toxicity****Oral:**

May be harmful if swallowed. (rat) LD50 = 3,230 mg/kg.

Dermal:

No deaths occurred. (rat) LD0 > 3,170 mg/kg.

Skin Irritation:

Practically non-irritating. (rabbit) (24 h) (occluded exposure)

Eye Irritation:

Not irritating. (rabbit)

Skin Sensitization:

May cause an allergic skin reaction. Guinea pig maximization test. Skin allergy was observed. (Strong sensitizer, tested in a mixture with similar substance(s))

Repeated dose toxicity

Repeated oral administration to rat / affected organ(s): eye / signs: altered reflexes / (at high doses, tested in a mixture with similar substance(s))

Genotoxicity**Assessment in Vitro:**

No genetic changes were observed in a laboratory test using: bacteria

Genetic changes were observed in a laboratory test using: animal cells

Genotoxicity**Assessment in Vivo:**

No genetic changes were observed in a laboratory test using: mice

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Other information

The information presented is from representative materials in this chemical class. The results may vary depending on the test substance.

SECTION 12: ECOLOGICAL INFORMATION**Chemical Fate and Pathway**

Data on this material and/or its components are summarized below.

Data for Methacrylate ester (Proprietary)**Biodegradation:**

Readily biodegradable. (14 d) biodegradation 92 - 100 %

Octanol Water Partition Coefficient:

log Pow: = 0.42, at 77 °F (25 °C)

Data for Aliphatic urethane methacrylate (Proprietary)**Biodegradation:**

Not readily biodegradable. (28 d) biodegradation 22 %

Octanol Water Partition Coefficient:

log Pow: = 3.39, at 68 °F (20 °C)

Data for Methacrylic ester (Proprietary)**Biodegradation:**

Readily biodegradable. (28 d) biodegradation 70 %

Octanol Water Partition Coefficient:

log Pow: = 5.09

Data for Photoinitiator (Proprietary)**Biodegradation:**

Not readily biodegradable. (28 d) biodegradation 0 - 10 %

Bioaccumulation:

56 d BCF = 72 (Cyprinus carpio (Carp))

Octanol Water Partition Coefficient:

log Pow: = 3.1, at 73 °F (23 °C) pH = 6.4

Data for Proprietary additive (Proprietary)**Biodegradation:**

Readily biodegradable. (28 d) biodegradation 73 %

Bioaccumulation:

56 d 3.5 - 12 (Cyprinus carpio (Carp))

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Octanol Water Partition Coefficient:

log Pow: = 2.81, at 77 °F (25 °C) pH = 5.8

Data for Proprietary Stabilizer (Proprietary)**Biodegradation:**

Not readily biodegradable. (28 d) biodegradation 38 %

Bioaccumulation:

Does not bioaccumulate. < 31.4 (Cyprinus carpio (Carp))

Octanol Water Partition Coefficient:

log Pow: = 2.37 - 2.77

Data for UV stabilizer (Proprietary)**Biodegradation:**

Not readily biodegradable. (28 d) biodegradation 38 %

Octanol Water Partition Coefficient:

log Pow: = 0.37

Additional Information:

The information presented is from representative materials in this chemical class. The results may vary depending on the test substance.

Data for Light stabilizer (Proprietary)**Biodegradation:**

Not readily biodegradable. (28 d) biodegradation 38 %

Octanol Water Partition Coefficient:

log Pow: = 2.77

Additional Information:

The information presented is from representative materials in this chemical class. The results may vary depending on the test substance.

Ecotoxicology

Data on this material and/or its components are summarized below.

Data for Methacrylate ester (Proprietary)**Aquatic toxicity data:**

Practically nontoxic. Oryzias latipes (Orange-red killifish) 96 h LC50 > 100 mg/l

Aquatic invertebrates:

Practically nontoxic. Daphnia magna (Water flea) 48 h LC50 = 380 mg/l

Algae:

Practically nontoxic. Pseudokirchneriella subcapitata (green algae) 72 h ErC50 = 836 mg/l

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Microorganisms:

Respiration inhibition / Pseudomonas fluorescens 16 h EC0 > 3,000 mg/l

Chronic toxicity to aquatic invertebrates:

Practically nontoxic. Reproduction Test / Daphnia magna (Water flea) 21 d NOEC = 24.1 mg/l

Chronic toxicity to aquatic plants:

Practically nontoxic. Pseudokirchneriella subcapitata (green algae) 72 h NOEC r = 400 mg/l

Data for Aliphatic urethane methacrylate (Proprietary)**Aquatic toxicity data:**

Harmful. Danio rerio (zebra fish) 96 h LC50 = 10.1 mg/l

Aquatic invertebrates:

No effect up to the limit of solubility. Daphnia magna (Water flea) 48 h EC50 > 1.2 mg/l

Algae:

No effect up to the limit of solubility. Desmodesmus subspicatus (green algae) 72 h EC50 > 0.68 mg/l

Chronic toxicity to aquatic plants:

Toxic. Desmodesmus subspicatus (green algae) 72 h NOEC r = 0.21 mg/l

Data for Methacrylic ester (Proprietary)**Aquatic toxicity data:**

Toxic. Danio rerio (zebra fish) 96 h LC50 = 1.79 mg/l

Aquatic invertebrates:

No effect up to the limit of solubility. Daphnia magna (Water flea) 48 h EC50 > 2.57 mg/l

Algae:

Toxic. Pseudokirchneriella subcapitata (green algae) 96 h ErC50 = 2.28 mg/l

Chronic toxicity to aquatic invertebrates:

Harmful. Reproduction Test / Daphnia magna (Water flea) 21 d NOEC = 0.233 mg/l

Chronic toxicity to aquatic plants:

Harmful. Pseudokirchneriella subcapitata (green algae) 72 h ErC10 = 0.751 mg/l

Data for Photoinitiator (Proprietary)**Aquatic toxicity data:**

Toxic. Cyprinus carpio (Carp) 96 h LC50 = 1.4 mg/l

Aquatic invertebrates:

Toxic. Daphnia magna (Water flea) 48 h EC50 = 3.5 mg/l

Algae:

Toxic. Pseudokirchneriella subcapitata (green algae) 72 h ErC50 > 2.01 mg/l

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Microorganisms:

Respiration inhibition / Activated sludge 3 h EC50 > 1,000 mg/l

Data for Proprietary additive (Proprietary)**Aquatic toxicity data:**

Harmful. Danio rerio (zebra fish) 96 h LC50 = 24 mg/l (Nominal concentration)

Aquatic invertebrates:

Harmful. Daphnia magna (Water flea) 48 h EC50 = 53.9 mg/l

Algae:

Harmful. Desmodesmus subspicatus (green algae) 72 h ErC50 = 14.4 mg/l

Microorganisms:

Respiration inhibition / Activated sludge 3 h EC50 > 100 mg/l

Chronic toxicity to fish:

Practically nontoxic. Early-life Stage / Pimephales promelas (fathead minnow) 32 d NOEC = 4.6 mg/l

Chronic toxicity to aquatic invertebrates:

Harmful. Reproduction Test / Daphnia magna (Water flea) 21 d NOEC = 0.3 mg/l

Chronic toxicity to aquatic plants:

Practically nontoxic. Desmodesmus subspicatus (green algae) 72 h ErC10 = 2.51 mg/l

Data for Proprietary Stabilizer (Proprietary)**Aquatic toxicity data:**

Very toxic. Danio rerio (zebra fish) 96 h LC50 = 0.9 mg/l

Algae:

Toxic. Desmodesmus subspicatus (green algae) 72 h ErC50 1.68 mg/l

Microorganisms:

Respiration inhibition / Activated sludge 3 h EC20 >= 100 mg/l

Chronic toxicity to aquatic plants:

Toxic. Desmodesmus subspicatus (green algae) 72 h NOEC r = 0.22 mg/l

Data for UV stabilizer (Proprietary)

The information presented is from representative materials in this chemical class. The results may vary depending on the test substance.

Aquatic toxicity data:

Very toxic. Danio rerio (zebra fish) 96 h LC50 = 0.9 mg/l (tested in a mixture with similar substance(s))

Aquatic invertebrates:

Harmful. Daphnia magna (Water flea) 24 h EC50 = 20 mg/l

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Algae:

Toxic. *Desmodesmus subspicatus* (green algae) 72 h ErC50 = 1.68 mg/l

Microorganisms:

Respiration inhibition / Activated sludge 3 h IC50 > 100 mg/l

Chronic toxicity to aquatic invertebrates:

Toxic. *Daphnia magna* (Water flea) 21 d NOEC = 1 mg/l

Chronic toxicity to aquatic plants:

Toxic. *Desmodesmus subspicatus* (green algae) 72 h NOEC r = 0.22 mg/l

Data for Light stabilizer (Proprietary)

The information presented is from representative materials in this chemical class. The results may vary depending on the test substance.

Aquatic toxicity data:

Very toxic. *Danio rerio* (zebra fish) 96 h LC50 = 0.9 mg/l (tested in a mixture with similar substance(s))

Algae:

Toxic. *Desmodesmus subspicatus* (green algae) 72 h ErC50 = 1.68 mg/l

Microorganisms:

Respiration inhibition / Activated sludge 3 h IC50 > 100 mg/l

Chronic toxicity to aquatic invertebrates:

Toxic. *Daphnia magna* (Water flea) 21 d NOEC = 1 mg/l

Chronic toxicity to aquatic plants:

Toxic. *Desmodesmus subspicatus* (green algae) 72 h NOEC r = 0.22 mg/l

SECTION 13: DISPOSAL CONSIDERATIONS**Waste disposal:**

Disposal via incineration is recommended. Dispose of in accordance with federal, state and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

Take appropriate measures to prevent release to the environment.

SECTION 14: TRANSPORT INFORMATION

US Department of Transportation (DOT): not regulated

International Maritime Dangerous Goods Code (IMDG): not regulated

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SECTION 15: REGULATORY INFORMATION**Chemical Inventory Status**

US. Toxic Substances Control Act	TSCA	The components of this product are all on the Active TSCA Inventory.
Canadian Domestic Substances List (DSL)	DSL	This product contains one or several components that are not on the Canadian DSL nor NDSL lists.
China. Inventory of Existing Chemical Substances in China (IECSC)	IECSC (CN)	Not all components of this product are listed or exempted
Japan. ENCS - Existing and New Chemical Substances Inventory	ENCS (JP)	Not all components of this product are listed or exempted
Japan. ISHL - Inventory of Chemical Substances	ISHL (JP)	Not all components of this product are listed or exempted
Korea. Korean Existing Chemicals Inventory (KECI)	KECI (KR)	Not all components of this product are listed or exempted
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	PICCS (PH)	Not all components of this product are listed or exempted
Australian Inventory of Industrial Chemicals	AU AIICL	Not all components of this product are listed or exempted
Taiwan Chemical Substance Inventory (TCSI)	TCSI	Not all components of this product are listed or exempted

United States – Federal Regulations**SARA Title III – Section 302 Extremely Hazardous Chemicals:**

The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

SARA Title III - Section 311/312 Hazard Categories:

Acute Health Hazard, Chronic Health Hazard, Reactivity Hazard

SARA Title III – Section 313 Toxic Chemicals:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):

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The components in this product are either not CERCLA regulated, regulated but present in negligible concentrations, or regulated with no assigned reportable quantity.

United States – State Regulations**California Prop. 65**

WARNING! This product contains a chemical known to the State of California to cause cancer.

<u>Chemical name</u>	<u>CAS-No.</u>
Carbon black	1333-86-4
1,2-Benzenediol	120-80-9

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

<u>Chemical name</u>	<u>CAS-No.</u>
Benzene, methyl-	108-88-3
Methanol	67-56-1

SECTION 16: OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3.**

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H320	Causes eye irritation.
H335	May cause respiratory irritation.
H361	Suspected of damaging fertility or the unborn child.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Latest Revision(s):

Reference number:	200020440
Date of Revision:	07/11/2023
Date Printed:	07/12/2023

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