

N3D-HT511

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-HT511

Synonyms: Mixture

Molecular formula: Proprietary Material

Chemical family: acrylic-like

Product use: 3D printing resins

SECTION 2: HAZARDS IDENTIFICATION**Emergency Overview**

Color: black

Physical state: liquid

Odor: acrylic-like

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

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

- Serious eye damage, Category 1, H318
- Skin sensitisation, Category 1, H317
- Chronic aquatic toxicity, Category 2, H411

*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:

Danger**Hazard statements:**

- H317 : May cause an allergic skin reaction.
- H318 : Causes serious eye damage.
- H411 : Toxic 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.

Precautionary statements:**Prevention:**

- P261 : Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
- 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.

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.
- P310 : Immediately call a POISON CENTER or doctor.
- P333 + P313 : If skin irritation or rash occurs: Get medical advice/ attention.
- P363 : Wash contaminated clothing before reuse.
- P391 : Collect spillage.

Disposal:

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

Supplemental information:**Potential Health Effects:**

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If swallowed, may cause severe irritation and injury to the mouth, throat and 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.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS-No.	Wt/Wt	GHS Classification**
Crosslinking acrylate monomer	Proprietary*	>= 30 - < 60 %	H317, H411
Trifunctional acrylate monomer	Proprietary*	>= 10 - < 30 %	H318, H317, H411
Polyether urethane diacrylate	Proprietary*	>= 10 - < 30 %	Not classified
Acrylic ester	Proprietary*	>= 5 - < 10 %	H311, H315, H319, H317

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

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

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

If inhaled, remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin:

In case of contact, immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. 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 immediately.

Ingestion:

If swallowed, DO NOT induce vomiting. Get medical attention immediately. If victim is fully conscious, give a cupful of water. 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

Hazardous organic compounds

Amines

Isocyanates

hydrogen cyanide

Nitrogen oxides (NO_x)

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. Evacuate area of all unnecessary personnel. 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.

Do not get in eyes, on skin, or on clothing.

Do not breathe vapor or mist.

Keep container tightly 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

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:

Do not breathe 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.

Eye protection:

Where there is potential for eye contact, wear a face shield, chemical goggles, and have eye flushing

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equipment immediately available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Color:	black
Physical state:	liquid
Odor:	acrylic-like
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:	600 CPS 77 °F (25 °C)
Oil/water partition coefficient:	No data available.
Thermal decomposition:	No data available.

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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

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
Amines
Nitrogen oxides (NOx)
Isocyanates
Hazardous organic compounds
Hydrogen cyanide

SECTION 11: TOXICOLOGICAL INFORMATION

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

Data for N3D-HT511**Acute toxicity****Dermal:**

May be harmful in contact with skin. Acute toxicity estimate = 3,859 mg/kg.

Data for Crosslinking acrylate monomer (Proprietary)**Acute toxicity**

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Oral:

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

Dermal:

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

Skin Irritation:

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

Eye Irritation:

Not irritating. (In vitro) Bovine corneal opacity and permeability assay (BCOP)

Skin Sensitization:

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

Repeated dose toxicity

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

Genotoxicity**Assessment in Vitro:**

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

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.

Data for Trifunctional acrylate monomer (Proprietary)**Acute toxicity****Oral:**

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

Skin Irritation:

Not irritating. (rabbit) (4 h)

Eye Irritation:

Causes serious eye damage. (rabbit)

Skin Sensitization:

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

Repeated dose toxicity

Repeated oral administration to rat / affected organ(s): forestomach / signs: Local irritation / No adverse systemic effects reported.

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Genotoxicity**Assessment in Vitro:**

Genetic changes were observed in laboratory tests using: bacteria

Developmental toxicity

Reproductive/Developmental Effects Screening Assay. Oral (rat) / No birth defects were observed. (reduced body weight, at doses that produce effects in mothers)

Reproductive effects

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

Other information

Effects due to processing releases or residual monomer:
Possible cross sensitization with other acrylates and methacrylates.

Data for Polyether urethane diacrylate (Proprietary)**Acute toxicity****Oral:**

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

Genotoxicity**Assessment in Vitro:**

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

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 Acrylic ester (Proprietary)**Acute toxicity****Oral:**

Practically nontoxic. (rat) LD₅₀ = 5,350 mg/kg.

Dermal:

Toxic in contact with skin. (rabbit) LD₅₀ = 291 mg/kg.

Skin Irritation:

Causes skin irritation. (rabbit)

Eye Irritation:

Causes serious eye irritation. (rabbit)

Skin Sensitization:

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

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Carcinogenicity

Chronic dermal administration to mice / Increased incidence of tumors was reported. (According to limited available data, concentrated solutions)

Genotoxicity**Assessment in Vitro:**

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

Data for 2-Propenoic acid, reaction products with 3-hydroxy-2,2-dimethylpropyl 3-hydroxy-2,2-dimethylpropanoate (2136366-99-7)**Acute toxicity****Oral:**

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

Dermal:

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

Skin Irritation:

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

Eye Irritation:

Not irritating. (In vitro) Bovine corneal opacity and permeability assay (BCOP)

Skin Sensitization:

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

Repeated dose toxicity

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

Genotoxicity**Assessment in Vitro:**

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

Reproductive effects

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

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

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

Data for Crosslinking acrylate monomer (Proprietary)

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Biodegradation:

Not readily biodegradable. (28 d) biodegradation 43.5 %

Octanol Water Partition Coefficient:

log Pow: = 3.58

Data for Trifunctional acrylate monomer (Proprietary)**Biodegradation:**

Not readily biodegradable. (28 d) biodegradation 14.5 - 19.7 %

Octanol Water Partition Coefficient:

log Pow: = 1.09 - 2.61, at 77 °F (25 °C) pH = 6.8

Data for 2-Propenoic acid, reaction products with 3-hydroxy-2,2-dimethylpropyl 3-hydroxy-2,2-dimethylpropanoate (2136366-99-7)**Biodegradation:**

Not readily biodegradable. (28 d) biodegradation 43.5 %

Octanol Water Partition Coefficient:

log Pow: = 3.58, at 77 °F (25 °C) pH > 7.2 - 7.8

Ecotoxicology

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

Data for Crosslinking acrylate monomer (Proprietary)**Aquatic toxicity data:**

Toxic. Danio rerio (zebra fish) 96 h LC50 = 1.8 mg/l

Aquatic invertebrates:

Harmful. Daphnia magna (Water flea) 48 h EC50 = 26.37 mg/l

Algae:

Toxic. Pseudokirchneriella subcapitata (green algae) 72 h ErC50 = 4.88 mg/l

Microorganisms:

Respiration inhibition / Activated sludge 3 h EC10 = 195.2 mg/l

Data for Trifunctional acrylate monomer (Proprietary)**Aquatic toxicity data:**

Toxic. Danio rerio (zebra fish) 96 h LC50 = 9.43 mg/l

Aquatic invertebrates:

Practically nontoxic. Daphnia magna (Water flea) 48 h EC50 = 158.3 mg/l

Algae:

Harmful. Pseudokirchneriella subcapitata (green algae) 72 h ErC50 = 25.7 mg/l

Microorganisms:

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Respiration inhibition / Activated sludge 14 h NOEC \geq 100 mg/l

Data for 2-Propenoic acid, reaction products with 3-hydroxy-2,2-dimethylpropyl 3-hydroxy-2,2-dimethylpropanoate (2136366-99-7)

Aquatic toxicity data:

Toxic. Danio rerio (zebra fish) 96 h LC50 = 1.8 mg/l

Aquatic invertebrates:

Harmful. Daphnia magna (Water flea) 48 h EC50 = 26.37 mg/l

Algae:

Toxic. Pseudokirchneriella subcapitata (green algae) 72 h ErC50 = 4.88 mg/l

Microorganisms:

Respiration inhibition / Activated sludge 3 h NOEC = 125 mg/l

Chronic toxicity to aquatic plants:

Practically nontoxic. Pseudokirchneriella subcapitata (green algae) 72 h ErC10 = 4.29 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)

UN Number : 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
Technical name : (Crosslinking acrylate monomer)
Class : 9
Packaging group : III
Marine pollutant : yes

International Maritime Dangerous Goods Code (IMDG)

UN Number : 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name : (CROSSLINKING ACRYLATE MONOMER)
Class : 9
Packaging group : III

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Marine pollutant : yes

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 listed in the Canadian NDSL list. All other components are on the DSL list.
China. Inventory of Existing Chemical Substances in China (IECSC)	IECSC (CN)	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)	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:

Reactivity Hazard, Acute Health 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.

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

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.

Chemical name
Carbon black

CAS-No.
1333-86-4

California Prop. 65

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

Chemical name
Benzene, methyl-

CAS-No.
108-88-3

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

H311 Toxic in contact with skin.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

Latest Revision(s):

Reference number: 200023192
Date of Revision: 07/18/2023
Date Printed: 07/19/2023

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such products are used in combination with other materials or in any process. The performance of the product, its shelf life, and application characteristics depends on many variables, and changes in these variables can impact product performance. You are responsible to test the suitability of any product in advance for any intended use or application and before commercialization. Nothing herein shall be construed as a license for the use of any product in a manner that might infringe any patent and it should not be construed as an inducement to infringe any patent. Please carefully review the Safety Data Sheet for the product.

The Company adheres to a strict policy that applies to the use of any of its products in medical device applications. This policy can be found at <https://www.arkema.com/global/en/social-responsibility/innovation-and-sustainable-solutions/responsible-product-management/medical-device-policy/> which is incorporated herein by reference and made a part hereof. Except as expressly authorized, the Company (i) has designated specific medical grade compositions for products used in medical device applications and Company products not so designated are not authorized for use in medical device applications and (ii) strictly prohibits the use of any of its products in medical device applications that are implanted in the body or in contact with bodily fluids or tissues for greater than 30 days. The Company does not design, manufacture and/or directly sell any medical devices. The Company does not co-design, or offer assistance to any purchaser of its products, in their design, manufacture and/or sale of products for medical devices. It is the sole responsibility of the manufacturer of medical devices to determine the suitability of all raw material, products and components, including any medical grade products, in order to ensure that the medical device is safe for end-use and complies with all applicable legal and regulatory requirements and to conduct all necessary tests and inspections.