SAFETY DATA SHEET

Light Link™ UV Crosslinked Kynar® PVDF

EFFECTIVE DATE: 05/23/2022
REVISION NUMBER: V1.1

1. PRODUCT AND SUPPLIER INFORMATION

Product Identification:
Product Name: Light Link™ UV Crosslinked Kynar® PVDF
Product Code: KPR-002

Recommended use of the chemical and restriction on use

Main use category: Commercial use.
Use of the substance/mixture:
Manufacturing of 3D-printed objects.
Use of the substance/mixture:
Commercial additive manufacturing.

Relevant identified uses:
For use in DLP/SLA printers.

Uses advised against:
Not determined or not applicable.
Reasons why uses advised against:
Not determined or not applicable.

Supplier Information:
Supplier: United States
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Byron Center, MI 49315
+1 6168340996
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Emergency phone number
United States
+1 6168340996

2. HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

Skin irritation	Category 2 - (H315)
Skin sensitisation	Category 1 - (H317)
Eye irritation	Category 2A - (H319)
Inhalation: Acute toxicity	Category 4 - (H332)
Chronic aquatic toxicity	Category 2 - (H411)

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

Adverse physicochemical, human health and environmental effects

No additional information available.
GHS label elements

Warning

- Causes skin irritation
- May cause an allergic skin reaction
- Causes serious eye irritation
- May cause respiratory irritation
- Toxic to aquatic life with long lasting effects
- Wash skin thoroughly after handling.
- Wear protective gloves/ protective clothing/eye protection/face protection.
- Avoid breathing dust/fume/ gas/mist/ vapours/spray.
- Contaminated work clothing should not be allowed out of the workplace.
- Use only outdoors or in a well-ventilated area.
- IF ON SKIN: Wash with plenty of soap and water.
- If skin irritation occurs: Get medical advice/attention.
- Take offcontaminated clothing and wash before reuse.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- IF eye irritation persists: Get medical advice/ attention.
- If skin irritation or rash occurs: Get medical advice/ attention.
- Wash contaminated clothing before reuse.
- IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.
- Store in a well-ventilated place. Keep container tightly closed.
- Store locked up.
- Dispose of contents/ container to proper waste disposal plant.
- Avoid release to the environment.

Other hazards which do not result in classification
No additional information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Description	CAS Number	EINECS Number	%	Note
Poly(1,1-difluoroethylene)	24937-79-9		10 - 50	Proprietary
Methacrylate Oligomer(s)			20 - 50	Proprietary
Methacrylate Monomer(s)			5 - 30	Proprietary
Photoinitiator(s)			0.1 - 1	Proprietary
UV Blocker			0.1 - 1	Proprietary

4. FIRST-AID MEASURES

Description of necessary first-aid measures
General notes: Show this Safety Data Sheet to the doctor in attendance.

Inhalation:
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

Skin contact: Remove/Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.

Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion: Get medical advice/attention if you feel unwell. Rinse mouth.

Most important symptoms/effects, acute and delayed

Inhalation: May cause irritation to the respiratory system. No specific health warnings notes.

Skin contact: May cause skin irritation or eczema.
Eye contact: May cause irritation, redness, and pain.

Ingestion: May cause irritation of the throat.

Indication of immediate medical attention and special treatment needed, if necessary

Specific treatment: Effects are dependent on exposure (dose, concentration, contact time).
Notes for the doctor: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Water spray, foam, dry powder or carbon dioxide.

Specific hazards arising from the chemical

When burned, the following hazardous products of combustion can occur:
- Carbon oxides
- Hazardous organic compounds
- Sulfur oxides
- Nitrogen oxides
- Amines
- Hydrogen cyanide
- Isocyanates
- Polymerization is exothermic and can degenerate into an uncontrolled reaction.

Special protective actions for fire-fighters

Use pressurized air mask if product is involved in fire. Water spray should be used to cool containers. 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).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
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.

Environmental precautions
Avoid discharge to the aquatic environment. Do not discharge into drains, water courses or onto the ground.

Methods and materials for containment and cleaning up
Absorb spillage with suitable absorbent material. Transfer to a container for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
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.

Conditions for safe storage, including any incompatibilities

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
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.

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

Appropriate engineering controls

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.

Individual protection measures

Provide adequate ventilation.

Respiratory equipment: Wear suitable respiratory protection.

Hand protection: Neoprene gloves are recommended.

Eye protection: Wear tight-fitting goggles or face shield.

Other protection: Provide eyewash station and safety shower. Wear appropriate clothing to prevent any possibility of skin contact. Wear airsupplied mask in confined areas.

Hygiene measures: Wash hands after contact. Wash hands after handling. Wash promptly with soap & water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination. Provide shower facilities near the work place. Shower after work. Eating, smoking and water fountains prohibited in immediate work area. DO NOT SMOKE IN WORK AREA!

Skin protection: Protection suit must be worn.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and chemical properties

Appearance/form (physical state, color, etc.)	Viscous liquid
Odor:	No data available
Odor threshold:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
pH	No data available
Flash point:	No data available
Evaporation rate	No data available
Flammability (solid, gas):	No data available
Upper/lower flammability limits:	No data available
Upper/lower explosive limits	No data available
Vapor pressure:	< 0.1 mbar
Vapor density:	Not applicable
Density	No data available
Relative density:	No data available
Solubility(ies):	[Water] Insoluble
Partition coefficient (n-octanol/water)	No data available
Auto-ignition temperature:	No data available
Decomposition temperature	No data available
Dynamic Viscosity	No data available
Kinematic Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

10. STABILITY AND REACTIVITY

Reactivity: Not reactive under recommended handling and storage conditions.

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions

Hazardous Polymerization:
May polymerize.

Conditions to avoid
Avoid radical forming substances (metal-ions, peroxides).
Avoid storage >38°C (100°F) and exposure to light/direct sunlight and heat.

Incompatible materials

Materials To Avoid:
- Strong reducing agents.
- Free radical generators.
- Inert gas.
- Oxygen scavenger.
- Peroxides.
- Strong oxidizing agents.

Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced. Hazardous decomposition products formed during fire conditions may include oxides of carbon, nitrogen and various hydrocarbon fragments. Hazardous polymerization may occur. Uncontrolled polymerization may cause rapid evolution of heat and increase in pressure that could result in violent rupture of sealed storage vessels or containers.

11. TOXICOLOGICAL INFORMATION

Toxicological (health) effects

Assessment: Based on available data, the classification criteria are not met.
Product data: No data available.
Substance data:

	Route	Result
Methacrylate Oligomer(s)	Oral	LD50 Rat: No data available
Methacrylalte Monomer(s)	Oral	LD50 Rat: No data available
Photoinitiator(s)	Oral	LD50 Rat: No data available
UV Blocker	Oral	LD50 Rat: No data available

Skin corrosion/irritation
Assessment: Causes skin irritation.
Product data: No data available.
Substance data:

Name	Result
Methacrylate Oligomer(s)	Causes skin irritation
Methacrylate Monomer(s)	Causes skin irritation
Photoinitiator(s)	May cause an allergic skin reaction

Serious eye damage/irritation
Assessment: Causes serious eye irritation.
Product data: No data available.
Substance data:

Name	Result
Methacrylate Oligomer(s)	Causes serious eye irritation.
Methacrylate Monomer(s)	Causes serious eye irritation.

Respiratory or skin sensitization

Assessment: May cause an allergic skin reaction.
Product data: No data available.
Substance data:

Name	Result
Methacrylate Oligomer(s)	May cause an allergic skin reaction.
Methacrylate Monomer(s)	May cause an allergic skin reaction.
Photoinitiator(s)	May cause an allergic skin reaction.

Carcinogenicity
Assessment: Based on available data, the classification criteria are not met.
Product data: No data available.
Substance data: No data available.
International Agency for Research on Cancer (IARC): None of the ingredients are listed.
National Toxicology Program (NTP): None of the ingredients are listed.
OSHA Carcinogens: Not applicable.

Germ cell mutagenicity
Assessment: Based on available data, the classification criteria are not met.
Product data: No data available.
Substance data: No data available.

Reproductive toxicity
Assessment: Based on available data, the classification criteria are not met.
Product data: No data available.
Substance data: No data available.

Specific target organ toxicity (single exposure)
Assessment: May cause respiratory irritation.
Product data: No data available.
Substance data:

Name	Result
Methacrylate Monomer(s)	May cause respiratory irritation.

Specific target organ toxicity (repeated exposure)
Assessment: Based on available data, the classification criteria are not met.
Product data: No data available.
Substance data: No data available.

Aspiration toxicity
Assessment: Based on available data, the classification criteria are not met.
Product data: No data available.
Substance data: No data available.

Information on the likely routes of exposure

Inhalation: May cause irritation to the respiratory system. No specific health warnings noted.
Eye contact: Irritating to eyes.
Route of entry: Inhalation. Skin absorption. Ingestion.
Specific effects: Dermatitis.

Symptoms related to the physical, chemical and toxicological characteristics
No data available.

Other information
No data available.

12. ECOLOGICAL INFORMATION

Toxicity

Acute (short-term) toxicity
Assessment: Based on available data, the classification criteria are not met.
Product data: No data available.
Substance data: No data available.

Chronic (long-term) toxicity
Assessment: Based on available data, the classification criteria are not met.
Product data: No data available.
Substance data: No data available.

Persistence and degradability

Product data: No data available.
Substance data:

Name	Result
Methacrylate Oligomer(s)	This substance is not readily biodegradable.
Methacrylate Monomer(s)	This substance is not readily biodegradable.
UV Blocker	This substance is not readily biodegradable.
Photoinitiator(s)	This substance is not readily biodegradable.

Bioaccumulative potential

Product data: No data available.
Substance data:

Name	Result
Methacrylate Oligomer(s)	This substance is not readily biodegradable.
Methacrylate Monomer(s)	This substance is not readily biodegradable.
UV Blocker	This substance is not readily biodegradable.
Photoinitiator(s)	This substance is not readily biodegradable.

Mobility in soil

Product data: No data available.
Substance data:

Name	Result
Methacrylate Oligomer(s)	This substance has low potential to be adsorbed by the soil.
Methacrylate Monomer(s)	This substance is expected to distribute between the water column and organic soil and sediment particles.
UV Blocker	This substance has low potential to be adsorbed by the soil.
Photoinitiator(s)	This substance is expected to be adsorbed by the soil.

Other adverse effects
No data available.

13. DISPOSAL CONSIDERATIONS

Disposal methods
It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities.

Contaminated packages:
Not determined or not applicable.

14. TRANSPORT INFORMATION

UN Number
United States Transportation of dangerous goods (49 CFR DOT)
UN number: UN 3082
UN proper shipping name: Environmentally hazardous liquid, N.O.S. Methacrylate Polymer
UN transport hazard class(es): 9
Packing group: III
Environmental hazards: Marine Pollutant
Special precautions for user: None
Additional Information: DOT: 49 CFR 171.4(c)(2) Not regulated as dangerous goods when transported in single or inner packaging of 5 L or less for liquids or net mass of 5 Kg or less for solids provided the packaging meets the requirements of 49 CFR 173.24(a).

International Maritime Dangerous Goods (IMDG)
UN number: UN 3082
UN proper shipping name: Environmentally hazardous liquid, N.O.S. Methacrylate Polymer
UN transport hazard class(es): 9
Packing group: III
Environmental hazards: Marine Pollutant
Special precautions for user: None
Additional Information: This product is not regulated as a dangerous good when transported in sizes of <5L or <5 kg provided the packaging meets the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

International Air Transport Association Dangerous Goods Regulations (IATA -DGR)
UN number: UN 3082
UN proper shipping name: Environmentally hazardous liquid, N.O.S. Methacrylate Polymer
UN transport hazard class(es): 9
Packing group: III
Environmental hazards: Marine Pollutant
Special precautions for user: None

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question

United States regulations

Inventory listing (TSCA): All ingredients are listed or exempt.
Significant New Use Rule (TSCA Section 5): None of the ingredients are listed.
Export notification under TSCA Section 12(b): None of the ingredients are listed.

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

Section 311/312 Hazard Categories:
Reactivity Hazard, Acute Health Hazard

SARA 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.

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

RCRA: None of the ingredients are listed.

Section 112(r) of the Clean Air Act (CAA):
None of the ingredients are listed.

Massachusetts Right to Know:
Trade Secret Methacrylate Oligomer(s): Not Listed
Trade Secret Methacrylate Monomer(s): Not Listed
Trade Secret UV Blocker: Not Listed
Trade Secret Photoinitiator(s): Not Listed

New Jersey Right to Know:
Trade Secret Methacrylate Oligomer(s): Not Listed
Trade Secret Methacrylate Monomer(s): Not Listed
Trade Secret UV Blocker: Not Listed
Trade Secret Photoinitiator(s): Not Listed

New York Right to Know:
Trade Secret Methacrylate Oligomer(s): Not Listed
Trade Secret Methacrylate Monomer(s): Not Listed
Trade Secret UV Blocker: Not Listed
Trade Secret Photoinitiator(s): Listed

Pennsylvania Right to Know:
Trade Secret Methacrylate Oligomer(s): Not Listed
Trade Secret Methacrylate Monomer(s): Not Listed
Trade Secret UV Blocker: Not Listed
Trade Secret Photoinitiator(s): Not Listed

California Proposition 65:
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

16. OTHER INFORMATION

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.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
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.

Further information/disclaimer:
This product has been classified in accordance with OSHA HCS 2012 guidelines. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Intellectual Polymer Design, LLC and its affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. Users should make their own investigations to determine the suitability of the information for their particular purposes.