Emergency HOTLINE: 1-717-665-2421
Monday-Friday; 8:00 AM – 5:00 PM, EST

1. PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER'S NAME: Fenner Industrial Motion
ADDRESS: 187 W Airport Road, Lititz, PA 17543
TELEPHONE NO. +1.717.665-2421 (Monday – Friday, 8:00 a.m. – 5:00 p.m., EST)
PRODUCT NAME &/OR NUMBER:
- EEL

TRADE NAME & SYNONYM:
EEL 3D Printing Filament
CHEMICAL NAME & SYNONYM: Thermoplastic polyurethanes
CHEMICAL FAMILY: Polyamide **FORMULA:** Not Applicable

2. HAZARDS IDENTIFICATION

****

EMERGENCY OVERVIEW

Black colored odorless solids
The solid material is not hazardous and is not expected to cause irritation
Hazardous airborne contaminants may occur during decomposition such as in fused deposition modeling processes
Under hot melt processing conditions, wear personal protective equipment to prevent thermal burns
During a fire, irritating and highly toxic gases may be generated

****

HAZARD CLASSIFICATION

Skin sensitization, Category 1, H317

LABEL ELEMENTS:
HAZARD SYMBOL:

SIGNAL WORD: Warning
HAZARD STATEMENT: H317: May cause an allergic skin reaction.

POTENTIAL HEALTH EFFECTS

ACUTE TOXICITY:
IRRITATION/CORROSION: Not likely to result in irritation in solid form. Thermal decomposition may result in release of toxic airborne contaminates which can be irritating to eyes, skin and respiratory tract.
SENSITIZATION: The chemical structure does not suggest a sensitizing effect.

CHRONIC TOXICITY:
CARCINOGENICITY: The chemical structure does not suggest a specific alert for such an effect.
REPEATED DOSE TOXICITY: No known chronic effects.
GENOTOXICITY: The chemical structure does not suggest a mutagenic effect.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	%	GHS Classification
- Carbon Black	1333-86-4	14	Not Classified
- Hexanedioic acid, polymer with azacyclotridecan-2-one and .alpha.-hydro-.omega.-hydroxypoly(oxy-1,4-butanediyl)	77402-38-1	> 83%	Not Classified
- Benzenamine, 4-(1-methyl-1-phenylethyl)-N[4-(1-methyl-1-phenylethyl)phenyl]-	10081-67-1	< 2%	H317, H413

Note: This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). The hazardous chemicals are bound within the applicable polymer structures; therefore; the material is not GHS classified for health and environmental hazards as exposure is not expected.

4. FIRST AID MEASURES

FIRST AID MEASURES

INGESTION: Solid material; not expected to be ingested. If ingested, rinse mouth and then drink plenty of water. Do not induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or has convulsions. Seek medical attention required.

SKIN: In case of contact, immediately flush skin with soap and plenty of water. If molten polymer gets on the skin, cool rapidly with cold water. Do not peel solidified product off the skin. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Thoroughly clean shoes before reuse.

EYES: Fumes or vapors may cause slight irritation during fused deposition modeling process. Immediately flush eye(s) with plenty of water. Obtain medical treatment for thermal burns.

INHALATION: Not likely to result in irritation in solid form. Thermal decomposition may result in release of toxic airborne contaminants. Remove exposed individual to fresh air and keep the person calm. Assist in breathing if necessary. Immediate medical attention required.

MOST IMPORTABNT SYMPTOMS and EFFECTS, ACUTE and DELAYED.

ACUTE TOXICITY:

IRRITATION/CORROSION: Not likely to result in irritation in solid form. Thermal decomposition may result in release of toxic airborne contaminates which can be irritating to eyes, skin and respiratory tract

SENSITIZATION: The chemical structure does not suggest a sensitizing effect.

CHRONIC TOXICITY:

CARCINOGENICITY: The chemical structure does not suggest a specific alert for such an effect.

REPEATED DOSE TOXICITY: Subchronic oral administration to rat / No adverse systemic effects reported. Repeated oral administration to rat / affected organ(s): kidney, liver / signs: changes in organ weights, changes in organ structure or function.

GENOTOXICITY: The chemical structure does not suggest a mutagenic effect.

INDICATION of any IMMEDIATE MEDICAL ATTENTION and SPECIAL TREATMENT NEEDED:

HARARDS: None

TREATMENT: **Treat symptomatically**

5. FIRE FIGHTING MEASURES

AUTOIGNITION: >400°C

GENERAL FIRE HAZARDS: No unusual fire or explosion hazards noted.

EXTINGUISHING MEDIA: Water spray, foam, dry extinguishing media, carbon dioxide.

UNSUITABLE EXTINGUISHING MEDIA: Not determined.

FIREFIGHTING HAZARDS: Carbon monoxide, carbon dioxide, and other products of incomplete combustion. May also include isocyanates and small amounts of hydrogen cyanide. Hazardous organic compounds.

SPECIAL FIREFIGHTING PROCEDURES: Thermoplastic polymers can burn. Protect product from flames; maintain proper clearance when using heat devices, etc. Irritating or toxic substances will be emitted upon burning, combustion or decomposition. Large masses of molten polymer held at elevated temperatures for extended periods of time may auto-ignite.

FIRE-FIGHTING EQUIPMENT: Use self-contained breathing apparatus.

FUTHER INFORMATION: Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: No measures required.

METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP: Normal housekeeping or clean-up to avoid tripping hazard. Keep from entering sewers, lakes or streams. Industrial waste incineration is the recommended method of disposal, to be performed in accordance with Federal, State and local regulations. Prevent further leakage or spillage if you

can do so without risk. Ventilate the area. Sweep up and shovel into suitable properly labeled containers for prompt disposal. Possible fall hazard – floor may become slippery from leakage/spillage of product. 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 release to the environment. Do not contaminate water sources or sewer.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Observe good industrial hygiene practices. Use personal protective equipment as required. Contact with heated material may cause thermal burns. Wear gloves when handling hot material Wash thoroughly after handling.
Refer to the Maximum Handling Temperature for melt processing temperature range. Heating above the maximum handling temperature can generate hazardous decomposition products (see Section 10). Fume condensates may include hazardous contaminants from additives. Condensate may be combustible and should be periodically removed from exhaust hoods, ductwork, and other surfaces. Impervious gloves should be worn during cleanup operations to prevent skin contact.
Post thermal processing activities necessary to produce molded articles (such as cutting, sanding, sawing, grinding, drilling, or regrinding) may create dust or fines. Powders, dust, and/or fines may pose a dust explosion hazard. Avoid breathing dust.
Conduct operations emitting fumes or vapors (including thermoforming, heat joining, cutting and/or sealing of articles and cleanup) under well-ventilated conditions. Avoid breathing process vapors. Do not hold product for extended periods of time at elevated temperatures or allow thick emitting hazardous passes. Do not taste, swallow, or chew products. Wash thoroughly after processing. Do not store or consume food in processing areas. The major off-gasses from normal melt processing are expected to be water vapor and carbon dioxide. Other trace volatile organic components may also be emitted.
Do not steam sterilize articles made with thermoplastic polyurethanes. Methylene dianiline can be generated as result.
CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES Store in original containers at ambient environmental conditions. Segregate from foods and animal feeds. Store away from incompatible materials See section 10 for incompatible materials. Store in dry, well ventilated place away from sources of heat and direct sunlight. Keep in a dry, cool place. Store in closed containers, in a secure area to prevent container damage and subsequent spillage. Store away from moisture and heat to maintain the technical properties of the product.
Storage Stability – Remarks: Stable under recommended storage conditions.
Storage incompatibility – General: None known.
TEMPERATURE TOLERANCE – DO NOT STORE ABOVE: 60^{O}C (140^{O}F)
GENERAL ADVICE: Provide suitable exhaust ventilation in the area surrounding the melt outlet of fused deposition modeling printer.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS

CHEMICAL NAME	OSHA PEL	ACGIH TLV
Carbon Black	3.5 mg/m^3 TWA	3 mg/m^3 TWA -inhalable fraction

NOTE: The hazardous chemicals are bound within the applicable polymer structures; therefore; the material is not GHS classified for health and environmental hazards as exposure is not expected. Only those components with exposure limits are printed in this section. Limits with skin contact designation above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measure to prevent significant cutaneous absorption may be required. Limits with a sensitizer designation above mean that exposure to this material may cause allergic reactions.

APPROPRIATE ENGINEERING CONTROLS: Ensure adequate room ventilation to prevent buildup of dust or fumes during printing. Keep processing temperatures below decomposition temperature. If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT
GNERAL INFORMATION: Use personal protective equipment as required.
EYE/FACE PROTECTION: Wear splash goggles to protect from hot molten substance/product.
SKIN PROTECTION: Wear gloves when handling hot materials. Consult glove manufacturer to determine appropriate type glove material for given application. Rinse immediately if skin is contaminated. Wash contaminated clothing and clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash thoroughly after handling.
RESPIRATORY PROTECTION: Under normal use conditions, respirator is not usually required. Wear a NIOSH-certified (or equivalent) organic vapor respirator if exposure to dust particles, mist or vapors is likely. Cutting operations may create small particles from this product. If inhalation of particles cannot be avoided, wear a dust respirator. 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, selfcontained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.
HYGIENE MEASURES: Wear protective clothing to prevent contact during hot melt conditions. When using, do not eat, drink or smoke. After use wash hands with soap and water.

9. PHYSICAL AND CHEMICAL PROPERTIES+

FORM: Filament, Solid
COLOR: Black
ODOR: Odorless
ODOR THRESHOLD: No data available
pH: Not applicable
RELATIVE DENSITY: Approx. 1.2 g/cm^3
VAPOR DENSITY: Not applicable
VAPOR PRESSURE: Not applicable
SPECIFIC GRAVITY (Relative Density): No data available
PARTITIONING COEFFICIENT (20°C) OCTANOL/WATER (log Pow): No data available
SOLUBILITY IN WATER: 68 °F (20 °C) insoluble

SOLUBILITY (OTHER): Soluble in: Phenols Metacresol Benzyl alcohol (when hot) Formic acid (concentrate), Sulphuric acid (concentrate) Methylene chloride (dichloromethane) partly soluble

MELTING TEMPERATURE: No data available
BOILING POINT: Not applicable
FLASH POINT: Not applicable
EVAPORATION RATE: No data available
FLAMMABILITY (solid, gas): No data available
FLAMMABLITY LIMIT-UPPER: No data available
FLAMMABILITY LIMIT-LOWER: No data available
EXPLOSIVIE LIMIT – UPPER: No data available
EXPLOSIVE LIMIT – LOWER: No data available
AUTO-IGNITION TEMPERATURE: 698 - 842 °F (370 - 450 °C) (Method: Standard ASTM D 1929-77 (B))
DECOMPOSITION TEMPERATURE: 572 - 662 °F (300 - 350 °C)
VISCOSITY: Not applicable
FREEZING POINT: No data available

10. STABILITY AND REACTIVITY

REACTIVITY: Stable
CHEMICAL STABILITY: The product is chemically stable. No hazardous reactions if stored and handled as prescribed/indicated.
POSSIBILITY OF HAZARDOUS REACTIONS: Will not occur.
CONDITIONS TO AVOID: Avoid storing in moist and warm conditions. (to maintain the technical properties of the product). See Hazardous Decomposition Products below.
INCOMPATIBLE MATERIALS: Nitrates, strong acids, strong oxidizing agents, strong alkalis, chlorates.
HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition giving toxic, flammable, and / or corrosive products: Carbon oxides, Ammonia, Amino derivatives, Hydrogen cyanide (hydrocyanic acid) (traces), and Hazardous organic compounds.

11. TOXICOLOGICAL INFORMATION

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

Data for Carbon black (1333-86-4)

Acute toxicity
Oral: Practically nontoxic. (rat) LD50 > 8,000 mg/kg.

Skin Irritation: Not irritating. (rabbit)

Eye Irritation: Not irritating. (rabbit)

Skin Sensitization: Not a sensitizer. Buehler method. (guinea pig) No skin allergy was observed.

Repeated dose toxicity
Subchronic inhalation administration to rat, mouse / affected organ(s): lung / signs: inflammation
Chronic dietary administration to rat, mouse / No adverse systemic effects reported.
Chronic dermal administration to mouse / No adverse systemic effects reported.

Carcinogenicity
Chronic inhalation administration to rat / Increase in tumor incidence was reported. (Effect occurred only at levels exceeding normal clearance capacity.)
Chronic inhalation administration to mouse, hamster / No increase in tumor incidence was reported.

Chronic dietary, dermal administration to rat, mouse / No increase in tumor incidence was reported.
Classified by the International Agency for Research on Cancer as: Group 2B: Possibly carcinogenic to humans. Cancer classification is determined by the concentration of carcinogenic impurities in this substance.

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

Genotoxicity
Assessment in Vivo: Both positive and negative responses for genetic changes were observed in laboratory tests using: animals

Human experience
General: Decreased pulmonary function reported in workers with long term exposure. Epidemiology studies have not shown an increase in cancer.

Human experience
Inhalation: Respiratory system: decreased lung function. (based on reports of occupational exposure to workers)

Human experience
Skin contact: Skin: irritating. (repeated or prolonged exposure) Human experience Eye contact: Eye: irritating. (repeated or prolonged exposure)

Data for Hexanedioic acid, polymer with azacyclotridecan-2-one and .alpha.-hydro-.omega.-hydroxypoly(oxy1,4-butanediyl) (77402-38-1)

Acute toxicity
Oral: No deaths occurred. (rat) LD0 > 4,000 mg/kg.
Skin Irritation: Not irritating. (rabbit) (4 h)
Eye Irritation: Causes mild eye irritation. (rabbit)
Skin Sensitization: Not a sensitizer. Guinea pig maximization test. No skin allergy was observed.

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

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

Other Information
The information presented is from representative materials with this Chemical Abstract Service (CAS) Registry number. The results vary depending on the size and composition of the test substance.

Data for Benzenamine, 4-(1-methyl-1-phenylethyl)-N-[4-(1-methyl-1-phenylethyl)phenyl]- (10081-67-1)

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: Causes mild eye irritation. (rabbit)
Skin Sensitization: May cause an allergic skin reaction. LLNA: Local Lymph Node Assay. (mouse) Skin allergy was observed.

Repeated dose toxicity
Subchronic oral administration to rat / No adverse systemic effects reported.
Repeated oral administration to rat / affected organ(s): kidney, liver / signs: changes in organ weights, changes in organ structure or function

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

12. ECOLOGICAL INFORMATION

Chemical Fate and Pathway: Data on this material and/or its components are summarized below.

Data for Benzenamine, 4-(1-methyl-1-phenylethyl)-N-[4-(1-methyl-1-phenylethyl)phenyl]- (10081-67-1)
Biodegradation: Not readily biodegradable. (28 d) biodegradation 29 %
Octanol Water Partition Coefficient: log Pow: = 7.9, at 77 °F (25 °C) pH = 6.9

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

Data for Carbon black (1333-86-4)
Aquatic toxicity data: No effect up to the limit of solubility. Danio rerio (zebra fish) 96 h LC0 > 1,000 mg/l (Nominal concentration)
Aquatic invertebrates: No effect up to the limit of solubility. Daphnia magna (Water flea) 24 h EC50 > 5,600 mg/l (Nominal concentration)
Algae: No effect up to the limit of solubility. Desmodesmus subspicatus (green algae) 72 h EC50 > 10,000 mg/l (Nominal concentration)
Microorganisms: Respiration inhibition / Activated sludge 3 h EC50 > 800 mg/l

Data for Benzenamine, 4-(1-methyl-1-phenylethyl)-N-[4-(1-methyl-1-phenylethyl)phenyl]- (10081-67-1)
Aquatic toxicity data: No effect up to the limit of solubility. Poecilia reticulata (guppy) 96 h LC50 > 100 mg/l (Nominal concentration)
Aquatic invertebrates: No effect up to the limit of solubility. Daphnia magna (Water flea) 48 h EC50 > 100 mg/l (Nominal concentration)
Algae: No effect up to the limit of solubility. Selenastrum capricornutum (green algae) 72 h ErC50 = 116 mg/l (Nominal concentration)
Microorganisms: Respiration inhibition / Activated sludge 3 h EC50 > 1,000 mg/l
Chronic toxicity to aquatic invertebrates: No effect up to the limit of solubility. Reproduction Test / Daphnia magna (Water flea) 21 d NOEC = 0.038 mg/l (Nominal concentration)

13. DISPOSAL CONSIDERATIONS

Waste disposal of substance:
Where possible recycling is preferred to disposal or incineration. If recycling is not an option, incinerate or dispose of in accordance with federal, state, and local regulations. Pigmented, filled and/or solvent laden product may require special disposal practices 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.
Container disposal:
Dispose of in accordance with national, state and local regulations.

14. TRANSPORT INFORMATION

U.S. Department of Transportation (US DOT): Not regulated
International Maritime Dangerous Goods (IMDG): Not regulated

15. REGULATORY INFORMATION

Chemical Inventory Status
TSCA (Toxic Substances Control Act): All components of this material appear on the Inventory of Chemical Substances published by the US Environmental Protection Agency (EPA) under the authority of the Toxic Substance Control Act (TSCA).

DSL (Canadian Domestic Substances List): All components of this product are on the Canadian DSL

IECSC China (Inventory of Existing Chemical Substances in China): All components of this product are listed or exempted

ENCS Japan – (Existing and New Chemical Substances Inventory): All components of this product are listed or exempted

ISHL Japan – (Inventory of Chemical Substances): All components of this product are listed or exempted

KECI Korea (Korean Existing Chemicals Inventory): All components of this product are listed or exempted

PICCS (Philippines Inventory of Chemicals and Chemical Substances): The mixture contains a polymer. All the monomers for this polymer & other substances are listed on the inventory.

AU AIICL (Australian Inventory of Industrial Chemicals): All components of this product are listed or exempted

TCSI (Taiwan Chemical Substance Inventory): Not all components of this product are listed or exempted

United States – Federal Regulations
SARA Title III – 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 – 311/312 Hazard Categories: Acute Health Hazard.

SARA Title III – 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): The components in this product are either not CERCLA regulated, regulated but present in negligible concentrations, or regulated with no assigned reportable quantity.

EINECS: All components of this product are on the European Inventory of Existing Commercial Chemical Substances.
NEHAPS (National Environmental Health Action Plans): Contains no regulated substances.
EU CLASSIFICATION AND LABELING INFORMATION: Not applicable. **EU Risk Phrases:** Not applicable.
EU Safety Phrases: Not applicable.
VOLATILE ORGANIC COMPOUNDS (VOC): Not applicable.

United States – State Regulations (STATE RIGHT-TO-KNOW REQUIREMENTS):

Chemical Name:	**State(s)**
Polyurethane Polyester Elastomer	NJ, PA

Note: These chemicals are bound within the applicable polymer structures and are not expected to be a health hazard.

HMIS® HAZARD CLASSIFICATION: Health: 1 Fire: 0 Reactivity: 0
NFPA HAZARD CLASSIFICATION: Health: 1 Fire: 0 Reactivity: 0

NFPA and HMIS use a numbering scale ranging from 0-4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard: a rating of four indicates extreme danger. Although similar, the tow rating systems are intended for different purposes, and use different criteria. The NFPA system was developed to provide an on-the-spot alert to the hazards of a material, and their severity, to emergency responders. The HMIS system was designed to communicate workplace hazard information to employees who handle hazardous chemicals.

New Jersey Right to Know

Chemical name	CAS-No.
Carbon black	1333-86-4

New Jersey Right to Know – Special Health Hazard Substance(s)

Chemical name	CAS-No.
Carbon black	1333-86-4

Pennsylvania Right to Know

Chemical name	CAS-No.
Hexanedioic acid, polymer with azacyclotridecan-2-one and .alpha.-hydro-.omega.-hydroxypoly(oxy-1,4-butanediyl)	77402-38-1
Carbon black	1333-86-4

California Prop. 65
WARNING! This product contains a chemical known to the State of California to cause cancer.

Chemical name	CAS-No.
Carbon black	1333-86-4

16. OTHER INFORMATION

REVISION SUMMARY for SDS No. NinjaTek EEL
Date Prepared: May 18, 2026 **Last Revised:** December 6, 2018 **Previous Revision:**

Summary of Revisions:
12/6/2018 - New SDS
5/18/26 – New SDS

This information relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. The information is derived from the best available sources and is current as of the date of this Material Safety Data Sheet. Since the use of this information and the conditions of use of this product are not within the control of Fenner Industrial Motion, it is the user's responsibility to determine the suitability and completeness of this information, and the conditions of safe use of the product, for their own particular use.