

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial Preparation Date: 08.29.2024

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Nylon 12 White

SECTION 1: Identification

Product Identifier

Product Name: Nylon 12 White

Product code: FLP12W01

Recommended Use of the Product and Restriction on Use

Relevant Identified Uses: For use in Formlabs Fuse Printers.

Uses Advised Against: Not determined or not applicable.

Reasons Why Uses Advised Against: Not determined or not applicable.

Manufacturer or Supplier Details

Manufacturer:

United States

Formlabs, Inc

35 Medford St

Suite 201 Somerville, MA 02143

+1 617 855 0762

sds@formlabs.com

Emergency Telephone Number:

United States

CHEMTREC

1-800-424-9300 (24/7)

SECTION 2: Hazard(s) Identification

GHS Classification:

Combustible Dust

Label elements

Hazard Pictograms: None

Signal Word: Warning

Hazard statements:

Combustible Dust May form combustible dust concentrations in air.

Precautionary Statements: None

Hazards Not Otherwise Classified: None

SECTION 3: Composition/Information on Ingredients

Identification	Name	Weight %
CAS Number: 13463-67-7	Titanium Dioxide	<5
CAS Number: Trade Secret	Trade Secret	<0.5

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Additional Information: None

SECTION 4: First Aid Measures

Description of First Aid Measures

General Notes:

Show this Safety Data Sheet to the doctor in attendance.

After Inhalation:

If inhaled, remove person to fresh air and place in a position comfortable for breathing. If respiratory symptoms develop or persist, seek medical advice/attention.

After Skin Contact:

Wash affected area with plenty of soap and water. Remove contaminated clothing and launder before reuse. If skin irritation develops or persists, seek medical advice/attention.

After Eye Contact:

Rinse eyes with plenty of water for several minutes. Remove contact lenses if present and easy to do so. Protect unexposed eye. If symptoms develop or persist, seek medical advice/attention.

After Swallowing:

If swallowed, DO NOT induce vomiting unless told to do so by a physician or poison control center. Rinse mouth with water. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs, place on the left side with head down to prevent aspiration of liquid into the lungs. If symptoms develop or persist, seek medical advice/attention.

Most Important Symptoms and Effects, Both Acute and Delayed

Acute Symptoms and Effects:

Product presents an explosion hazard when suspended in air under certain conditions. Inhalation of large amounts of dust may cause inflammation and irritation of the nose and throat. Symptoms may include cough, sore throat, tightness of the chest, chest pain and lightheadedness.

Delayed Symptoms and Effects:

Not determined or not applicable.

Immediate Medical Attention and Special Treatment

Specific Treatment:

Not determined or not applicable.

Notes for the Doctor:

Treat symptomatically.

SECTION 5: Firefighting Measures

Extinguishing Media

Suitable Extinguishing Media:

Water mist/fog, carbon dioxide, dry chemical or alcohol resistant foam.

Dry chemical, sand and carbon dioxide.

Unsuitable Extinguishing Media:

Do not use water jet.

Specific Hazards During Fire-Fighting:

May form combustible dust concentrations in air. Reacts with water and alcohols. Reacts violently with oxidants, strong acids and bases and chlorinated hydrocarbons. This generates a fire and explosion hazard. Thermal decomposition may produce irritating/toxic fumes/gases.

Special Protective Equipment for Firefighters:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA).

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Special precautions:

Violent reactions may result from the use of a water jet or halogenated extinguishing agents. When using extinguishers, avoid dispersing combustible dust into the air. Aim extinguishers directly at the base of the flames and apply the agent as gently as possible. Overall, give preference to using medium to wide spray patterns rather than solid streams. Use only non-sparking tools. Fire fight from a protected location or maximum possible distance. Use water spray/fog for cooling fire exposed containers. Avoid unnecessary run-off of extinguishing media which may cause pollution.

SECTION 6: Accidental Release Measures

Personal Precautions, Protective Equipment, and Emergency Procedures:

Evacuate unnecessary personnel. Extinguish any sources of ignition. Do not ventilate area as this may spread dust. Wear recommended personal protective equipment including suitable respiratory protection (see Section 8). Ensure no sources of electric discharge or ignition are on your person before entering area. Do not get on skin, eyes or on clothing. Avoid breathing dust, fumes. Wash thoroughly after handling. Remove contaminated clothing and laundry before reuse.

Environmental Precautions:

Prevent further leakage or spillage if safe to do so. Prevent from reaching drains, sewers and waterways. Discharge into the environment must be avoided.

Methods and Material for Containment and Cleaning Up:

Avoid dust generation or stirring up of dust. Use only non-sparking tools. Ground all equipment used for recovery and clean up. Vacuum up and place in suitable containers for future disposal. Only use vacuum cleaners approved for dust collection. Dispose of in accordance with all applicable regulations (see Section 13).

Reference to Other Sections:

For personal protective equipment see Section 8. For disposal see Section 13.

SECTION 7: Handling and Storage

Precautions for Safe Handling:

Use appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with skin, eyes and clothing. Use dust explosion proof electrical equipment and lighting. Avoid dust generation and dispersal of dust in air. Dust deposits should not be allowed to accumulate on surfaces. Clean dust residues at regular intervals. Do not use brooms or compressed air hoses to clean surfaces. Only use vacuums approved for dust collection. Use only non-sparking tools. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions such as electrical grounding and bonding or inner atmospheres. Keep containers tightly closed and grounded when not in use. Workers whose clothing may have been contaminated should change into non-contaminated clothing before leaving the work premises. Contaminated clothing should be segregated in such a manner so that there is no direct personal contact by personnel who handle, dispose or clean the clothing. Contaminated clothing should not be allowed out of the workplace. Wash affected areas thoroughly after handling. Keep away from incompatible materials (See Section 10).

Conditions for Safe Storage, Including Any Incompatibilities:

Store in cool, dry, well-ventilated location out of direct sunlight. Keep away from food and beverages. Protect from freezing and physical damage. Store away from heat, open flames and other sources of ignition. Keep container tightly sealed. Outside or detached storage is preferred. Inside storage should be in a standard flammable storage cabinet. Store away from incompatible materials (See Section 10).

SECTION 8: Exposure Controls/Personal Protection

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Only those substances with limit values have been included below.

Occupational Exposure Limit Values:

Country (Legal Basis)	Substance	Identifier	Permissible concentration
ACGIH	Titanium Dioxide	13463-67-7	TLV-TWA: 2.5 mg/m ³ (8 hr [finescale particles, respirable fraction])
	Titanium Dioxide	13463-67-7	TLV-TWA: 0.2 mg/m ³ (8 hr [nanoscale particles, respirable fraction])
OSHA	Titanium Dioxide	13463-67-7	8-Hour TWA-PEL: 15 mg/m ³ (total dust)
NIOSH	Titanium Dioxide	13463-67-7	TWA: 0.3 mg/m ³ (ultrafine, including engineered nanoscale)
	Titanium Dioxide	13463-67-7	IDLH: 5000 mg/m ³
	Titanium Dioxide	13463-67-7	TWA: 2.4 mg/m ³ (fine)
United States(California)	Titanium Dioxide	13463-67-7	8-Hour TWA-PEL: 10 mg/m ³ (particles not otherwise regulated, total dust)
	Titanium Dioxide	13463-67-7	8-Hour TWA-PEL: 5 mg/m ³ (particles not otherwise regulated, respirable fraction)

Biological Limit Values:

No biological exposure limits noted for the ingredient(s).

Information on Monitoring Procedures:

Not determined or not applicable.

Appropriate Engineering Controls:

This product is a combustible material which may be ignited by friction, heat, sparks or flames. It is recommended that all dust control equipment (such as local exhaust ventilation and material transport systems) involved in handling this product contain explosion relief vents or an explosion suppression system. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area. Keep static electricity under control, which includes the bonding and grounding of equipment. Emergency eye wash stations and safety showers should be available in the immediate vicinity of use or handling. Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).

Personal Protection Equipment

Eye and Face Protection:

Safety glasses or goggles. Use eye protection equipment that has been tested and approved by recognized national standards (or equivalent).

Skin and Body Protection:

Chemical resistant, impervious gloves approved by the appropriate standards. Gloves must be inspected prior to use. Avoid skin contact with used gloves. Appropriate techniques should be used to remove used gloves and contaminated clothing. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Ensure that all personal protective equipment is approved by recognized national standards (or equivalent).

Respiratory Protection:

If engineering controls do not maintain airborne concentrations below the applicable workplace exposure limits, or to an acceptable level (if exposure limits have not been established), a respirator approved by

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recognized national standards (or equivalent) must be worn.

General Hygienic Measures:

When handling chemical products, do not eat, drink or smoke. Wash hands after handling, before breaks, and at the end of the workday. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Perform routine housekeeping.

SECTION 9: Physical and Chemical Properties

Information on Basic Physical and Chemical Properties

Appearance	White Powder
Odor	Odorless
Odor threshold	Not determined or not available.
pH	Not determined or not available.
Melting point/freezing point	175-189°C
Initial boiling point/range	Not determined or not available.
Flash point (closed cup)	Not determined or not available.
Evaporation rate	Not determined or not available.
Flammability (solid, gas)	Not Flammable. May form combustible dust concentrations in air.
Upper flammability/explosive limit	Not determined or not available.
Lower flammability/explosive limit	Not determined or not available.
Vapor pressure	Not determined or not available.
Vapor density	Not determined or not available.
Density	Not determined or not available.
Relative density	1.0 - 1.2 cps @ 20°C
Solubilities	Not determined or not available.
Partition coefficient (n-octanol/water)	Not determined or not available.
Auto/Self-ignition temperature	> 350°C
Decomposition temperature	> 300°C
Dynamic viscosity	Not determined or not available.
Kinematic viscosity	Not determined or not available.
Explosive properties	Not determined or not available.
Oxidizing properties	Not determined or not available.

SECTION 10: Stability and Reactivity

Reactivity:

Not reactive under recommended handling and storage conditions.

Chemical Stability:

Stable under recommended handling and storage conditions.

Possibility of Hazardous Reactions:

Hazardous reactions are not anticipated under recommended conditions of handling and storage.

Conditions to Avoid:

Extreme heat, open flames, hot surfaces, sparks, static discharge, ignition sources, dust generation and accumulation and incompatible materials.

Incompatible Materials:

Avoid contact with strong oxidising agents, strong acids and strong bases.

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Hazardous Decomposition Products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological Information

Acute Toxicity

Assessment: Based on available data, the classification criteria are not met.

Product Data: No data available.

Substance Data:

Name	Route	Result
Trade Secret	oral	LD50 Rat: > 2000 mg/kg
Titanium Dioxide	oral	LD50 Rat: > 5000 mg/kg
	inhalation	LC50 Rat: 5.09 mg/L (4 hr [aerosol])

Skin Corrosion/Irritation

Assessment: Based on available data, the classification criteria are not met.

Product Data:

No data available.

Substance Data: No data available.

Serious Eye Damage/Irritation

Assessment: Based on available data, the classification criteria are not met.

Product Data:

No data available.

Substance Data: No data available.

Respiratory or Skin Sensitization

Assessment: Based on available data, the classification criteria are not met.

Product Data:

No data available.

Substance Data: No data available.

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):

Name	Classification
Trade Secret	Not Applicable
Titanium Dioxide	Group 2B

National Toxicology Program (NTP):

Name	Classification
Trade Secret	Not Applicable
Titanium Dioxide	Not Applicable

OSHA Carcinogens:

Ingredient Name	CAS	OSHA Carcinogens Status
Titanium Dioxide	13463-67-7	Yes

Germ Cell Mutagenicity

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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: Based on available data, the classification criteria are not met.

Product Data:

No data available.

Substance Data: No data available.

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 Likely Routes of Exposure:

No data available.

Symptoms Related to the Physical, Chemical, and Toxicological Characteristics:

No data available.

Other Information:

No data available.

SECTION 12: Ecological Information

Acute (Short-Term) Toxicity

Assessment: Based on available data, the classification criteria are not met.

Product Data: No data available.

Substance Data:

Name	Result
Trade Secret	Aquatic Invertebrates EC50 Daphnia magna: > 21 mg/L (48hr [mobility])
	Aquatic Plants EC50 Raphidocelis subcapitata: > 11 mg/L (72hr [Growth rate])
Titanium Dioxide	Aquatic Invertebrates EC50 Daphnia magna: > 100 mg/L (48 hr [mobility])
	Aquatic Plants EC50 Raphidocelis subcapitata: > 100 mg/L (72 hr [growth rate])
	Fish LC50 Danio rerio: >100 mg/L (96 hr)

Chronic (Long-Term) Toxicity

Assessment: Based on available data, the classification criteria are not met.

Product Data: No data available.

Substance Data:

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Name	Result
Titanium Dioxide	Fish NOEC freshwater fish: ≥ 80 mg/L (6 d [time to hatch])
	Aquatic Invertebrates NOEC Daphnia magna: ≥ 5 mg/L (21 d [reproduction])

Persistence and Degradability

Product Data: No data available.

Substance Data:

Name	Result
Trade Secret	The study does not need to be conducted because the substance is inorganic.
Titanium Dioxide	Persistence assessment based on biodegradability is not relevant for inorganic compounds such as this substance.

Bioaccumulative Potential

Product Data: No data available.

Substance Data:

Name	Result
Trade Secret	The study does not need to be conducted because the substance is inorganic.
Titanium Dioxide	Bioaccumulation assessment using a classic BCF assessment is not considered relevant for inorganic compounds such as this substance.

Mobility in Soil

Product Data: No data available.

Substance Data:

Name	Result
Trade Secret	The study does not need to be conducted because the substance is inorganic.
Titanium Dioxide	Mobility in soil assessment based on KOC/Kd values are not relevant for inorganic compounds such as this substance.

Results of PBT and vPvB assessment

Product Data:

PBT assessment: This product does not contain any substances that are assessed to be a PBT.

vPvB assessment: This product does not contain any substances that are assessed to be a vPvB.

Substance Data:

PBT assessment:

Trade Secret	The study does not need to be conducted because the substance is inorganic.
Titanium Dioxide	PBT assessment does not apply to inorganic compounds such as this substance.

vPvB assessment:

Trade Secret	The study does not need to be conducted because the substance is inorganic.
Titanium Dioxide	vPvB assessment does not apply to inorganic compounds such as this substance.

Other Adverse Effects: No data available.

SECTION 13: Disposal Considerations

Disposal Methods:

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As supplied, this material is not considered a hazardous waste under RCRA. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Do not discharge into public wastewater or surface waters. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities.

Contaminated packages:

Dispose contaminated packages in a safe manner in accordance with local and national regulations. Do not allow the product to be released into the environment.

SECTION 14: Transport Information

United States Transportation of Dangerous Goods (49 CFR DOT)

UN Number	Not regulated
UN Proper Shipping Name	Not regulated
UN Transport Hazard Class(es)	None
Packing Group	None
Environmental Hazards	None
Special Precautions for User	None

International Maritime Dangerous Goods (IMDG)

UN Number	Not regulated
UN Proper Shipping Name	Not regulated
UN Transport Hazard Class(es)	None
Packing Group	None
Environmental Hazards	None
Special Precautions for User	None

International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

UN Number	Not regulated
UN Proper Shipping Name	Not regulated
UN Transport Hazard Class(es)	None
Packing Group	None
Environmental Hazards	None
Special Precautions for User	None

SECTION 15: Regulatory Information

United States Regulations

Inventory Listing (TSCA): All ingredients are listed-active or exempt.

Significant New Use Rule (TSCA Section 5):

Trade Secret	Trade Secret	Listed
13463-67-7	Titanium Dioxide	Not Listed

Export Notification under TSCA Section 12(b):

Trade Secret	Trade Secret	Listed
13463-67-7	Titanium Dioxide	Not Listed

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SARA Section 302 Extremely Hazardous Substances: None of the ingredients are listed.

SARA Section 313 Toxic Chemicals: None of the ingredients are listed.

CERCLA: None of the ingredients are listed.

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:

13463-67-7	Titanium Dioxide	Listed
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New Jersey Right to Know:

13463-67-7	Titanium Dioxide	Listed
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New York Right to Know:

13463-67-7	Titanium Dioxide	Listed
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Pennsylvania Right to Know:

13463-67-7	Titanium Dioxide	Listed
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California Proposition 65:

⚠️WARNING: This product can expose you to Titanium Dioxide; which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov

Additional information: Not determined.

SECTION 16: Other Information

Abbreviations and Acronyms: None

Disclaimer:

This product has been classified in accordance with OSHA HCS 2012 guidelines. The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation and disposal and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials, unless specified in the text. The responsibility to provide a safe workplace remains with the user.

NFPA: 0-0-0

HMIS: 0-0-0

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End of Safety Data Sheet