



Product Name: 3D-Fuel™ HydroPro
Product Code: HydroPro

Revision Number: 01
Revision Date: 12-24-2018

Print Date: 12-24-2018

Material Safety Data Sheet

In accordance with 29 CFR 1910.1200, ANSI Z400.1-2004, and ISO 11014-1: 1994.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product Name: 3D-Fuel™ HydroPro

Product Code: HydroPro

Product Use: A monofilament designed for 3D printing

Supplier: 3DomFuel, Inc, 2222 7th Ave N, Fargo, ND, 58102 United States

Customer Information Center: 1-844-333-3616 sales@3dfuel.com

Emergency Telephone Numbers (24 hours a day): 1-844-333-3616

2. HAZARDS IDENTIFICATION

Emergency Overview

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Weight %	OSHA Exposure Limits	ACGIH Exposure Limits
Methanol	<1	None	None

All ingredients in quantities >1.0% (0.1% for carcinogens) that are potentially hazardous per OSHA definitions.

4. FIRST AID MESAURES

Emergency Telephone Numbers (24 hours a day): 1-844-333-3616

General Advice: If you feel unwell, seek medical advice (show the label where possible). Never give anything by mouth to an unconscious person. Take off contaminated clothing and shoes immediately.

Eye Contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

Skin Contact: Rinse immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician. Cool skin rapidly with cold water after contact with hot polymer.

Inhalation: Move to fresh air. Call a physician immediately.

Ingestion: Drink water as a precaution. Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Call a physician immediately.

Notes to physician: Treat symptomatically.

5. FIRE FIGHTING MEASURES

The information herein is given in good faith, but no warranty, express or implied, is made. Consult the company for further information.

3D-Fuel™ and logos are trademarks or registered trademarks of 3DomFuel™ in the USA and other countries.

NOTIC REGARDING MEDICAL APPLICATION RESTRICTIONS: The company does not recommend any of its products, including samples, for use: (A) in any application which is intended for any internal contact with human body fluids or body tissues (B) as a critical component in any medical device that supports or sustains human life; and (C) specifically pregnant women or in any applications designed specifically to promote or interfere with human reproduction.



Product Name: 3D-Fuel™ HydroPro
Product Code: HydroPro

Revision Number: 01
Revision Date: 12-24-2018

Print Date: 12-24-2018

Flammability Limits in Air:

Flammable limits in air – lower (%): Not applicable
Flammable limits in air – upper (%): Not applicable

Suitable Extinguishing Media: Water spray jet, Dry chemical

Extinguishing media which must not be used for safety reasons: High volume water jet

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Under Fire Conditions: Cool containers/tanks with spray water. Water mist may be used to cool closed containers.

Other Information: Fine dust dispersed in air may ignite. Risks of ignition followed by flame propagation or secondary explosions shall be prevented by avoiding accumulation of dust, e.g. on floors and ledges.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protective equipment. See Section 8. Remove all sources of ignition. Avoid dust formation. Avoid contact with skin and eyes. Sweep up to prevent slipping hazard.

Environmental Precautions: do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system.

Methods for Cleaning up: Shovel into suitable container for disposal.

7. HANDLING AND STORAGE

Safe Handling Advice: Avoid contact with skin and eyes. Avoid dust formation. Workers should be protected from the possibility of contact with molten material during fabrication. Low hazard for usual industrial or commercial handling. Use personal protective equipment. See Section 8.

Storage: Store in cool place. Keep at temperatures below 104F (40C). Protect from moisture. Keep away from oxidizing agents and strongly acid or alkaline materials. Keep away from food, drink and animal feedings. Precautions: No special precautions required.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures: Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. Provide appropriate exhaust ventilation at places where dust is formed.
Control Parameters: None

Personal Protective Equipment:

Eye Protection: Safety glasses with side-shields, goggles.

Skin and Body Protection: Impervious clothing

Respiratory Protection: Respirator must be worn if exposed to dust. Wear respirator with dust filter. Respiratory protection is needed if any of the exposure limits in Section 2 are exceeded. Consult an industrial hygiene professional prior to respirator selection and use. Use a positive-pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

Hand Protection: Preventative skin protection.

Hygiene Measures: Avoid contact with skin, eyes, and clothing

Exposure Limits: See Section 2

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Monofilament

Color: White, light yellow

The information Herein Is Given In Good Faith, But No Warranty, Express or Implied, Is Made. Consult the Company for Further Information

3D-Fuel™ and logos are trademarks or registered trademarks of 3DomFuel™ in the USA and other countries.

NOTIC REGARDING MEDICAL APPLICATION RESTRICTIONS: The company does not recommend any of its products, including samples, for use: (A) in any application which is intended for any internal contact with human body fluids or body tissues (B) as a critical component in any medical device that supports or sustains human life; and (C) specifically pregnant women or in any applications designed specifically to promote or interfere with human reproduction.

Product Name: 3D-Fuel™ HydroPro

Product Code: HydroPro

Revision Number: 01

Revision Date: 12-24-2018

Print Date: 12-24-2018

Physical State: Solid

pH: 5.0 – 7.0 Concentration: 100.00 g/L

Vapor Pressure: Not determined

Vapor Density: Not determined

Evaporation Rate: Not determined

Density: Not determined

Boiling Point/Range: Not applicable

Decomposition Temperature: Not determined

Melting Point/Range: Not determined

Water Solubility: Insoluble

Solubility in other Solvents: None known

Odour: Slight vinegar-like

Flash Point: >200C

Ignition Temperature: 520C

Thermal Decomposition: >= 200C

Lower explosion limit: 35 g/m³

Upper explosion limit: Not determined

Auto-Ignition Temperature: Not determined

Burning Number: Not determined

Molecular Weight: Not determined

Melting Point/Range: 150 – 230C

Density: 1.00 – 1.20 g/cm³

10. STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions

Conditions to Avoid: Temperatures above 446F (230C)

Material to Avoid: Oxidizing agents. Acids. Strong bases.

Hazardous Decomposition Products: Burning obnoxious and toxic fumes.

Polymerization: Not applicable

11. TOXICOLOGICAL INFORMATION

Principle Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Acute Oral Toxicity: LD50 Oral : > 2,000 mg/kg

Acute Inhalation Toxicity: Acute toxicity estimate: > 20 mg/L; Test atmosphere: vapor; Exposure Time: 4 h; Method: Calculation method

Local Effects: May cause eye/skin irritation. Product dust may be irritating to eyes, skin, and respiratory system. Caused mild to moderate conjunctival irritation in eye irritation studies using rabbits. Caused very mild redness in dermal irritation studies using rabbits (slightly irritating). Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

Long Term Toxicity: Did not cause skin allergic reactions in skin sensitization studies using guinea pigs.

Specific Effects: May cause skin irritation and/or dermatitis. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea. Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. Burning produces irritant fumes.

Mutagenic Effects: Not mutagenic in AMES Tests

Reproductive Toxicity: No data is available on the product itself

Carcinogenic Effects: No data is available on the product itself

Target Organ Effects: There were no target organ effects noted following ingestion or dermal exposure in animal studies.

Skin: LD50/dermal/rabbit > 2000 mg/kg

The information Herein Is Given In Good Faith, But No Warranty, Express or Implied, Is Made. Consult the Company for Further Information

3D-Fuel™ and logos are trademarks or registered trademarks of 3DomFuel™ in the USA and other countries.

NOTIC REGARDING MEDICAL APPLICATION RESTRICTIONS: The company does not recommend any of its products, including samples, for use: (A) in any application which is intended for any internal contact with human body fluids or body tissues (B) as a critical component in any medical device that supports or sustains human life; and (C) specifically pregnant women or in any applications designed specifically to promote or interfere with human reproduction.

Ingestion: LD50/oral/rat > 5000 mg/kg

12. ECOLOGICAL INFORMATION

Toxicity to fish : (Oncorhynchus mykiss (rainbow trout)): > 100 mg/L; Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates: (Daphnia magna (Water flea)): > 100 mg/L; Exposure time: 48 h

Toxicity to algae : (algae): > 100 mg/L

Toxicity to bacteria: methanol : IC50 : > 1,000 mg/L Exposure time: 3 h; Test Method: Respiration inhibition of activated sludge; Method: OECD Test Guideline 209

Toxicity to fish (Chronic toxicity): methanol : NOEC: 7,900 mg/L; Exposure time: 200 h; Species: Oryzias latipes (Orange-red killifish)

12.2 Persistence and degradability

Biodegradability: methanol : Result: Readily biodegradable.

12.3 Bioaccumulative potential

Bioaccumulation: methanol : Species: Cyprinus carpio (Carp)

Concentration: 5 mg/L

Bioconcentration factor (BCF): 1 - 4.5

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

Additional ecological information: The product should not be allowed to enter drains, water courses or the soil.

13. DISPOSAL CONSIDERATIONS

Waste from Residues/Unused Products: In accordance with local and national regulations. Do not contaminate ponds, waterways, or ditches with chemical or used containers. Contact manufacturer.

THE COMPANY HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PARTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (Composition/Information on Ingredients).

Contaminated Packaging: Empty remaining contents. Do not re-use empty containers. Empty containers should be transported/delivered using a registered waste carrier to local recyclers for disposal.

14. TRANSPORT INFORMATION

U.S. Department of Transportation (DOT):

Proper shipping name: Not regulated as a hazardous material

IMDG:

The information Herein Is Given In Good Faith, But No Warranty, Express or Implied, Is Made. Consult the Company for Further Information

3D-Fuel™ and logos are trademarks or registered trademarks of 3DomFuel™ in the USA and other countries.

NOTIC REGARDING MEDICAL APPLICATION RESTRICTIONS: The company does not recommend any of its products, including samples, for use: (A) in any application which is intended for any internal contact with human body fluids or body tissues (B) as a critical component in any medical device that supports or sustains human life; and (C) specifically pregnant women or in any applications designed specifically to promote or interfere with human reproduction.

Product Name: 3D-Fuel™ HydroPro
Product Code: HydroPro

Revision Number: 01
Revision Date: 12-24-2018

Print Date: 12-24-2018

Proper Shipping Name: None Hazard Class: Not regulated

UN/Id No.: None packing group: None

ICAO/IATA:

Proper Shipping Name: None Hazard Class: Not regulated.

Packing Group: None

15. REGULATORY INFORMATION

(Not meant to be all inclusive—selected regulations represented)

NOTICE: The information herein is presented in good faith and believed to be accurate as of the print date shown above. However, now warranty, express, or implied is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See other sections for health and safety information.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

VOC: 0.5 %

VOC content less water: 6.55 g/L

Directive 96/82/EC: Update: 2003

Directive 96/82/EC does not apply

Further information: Reserved for industrial and professional use.

15.2 Chemical Safety Assessment

no data available

16. OTHER INFORMATION

Full text of R-phrases referred to under sections 2 and 3

R11 Highly flammable.

R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

R39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in

contact with skin and if swallowed.

Full text of H-Statements referred to under sections 2 and 3.

H225 Highly flammable liquid and vapour

H301 Toxic if swallowed.

H311 Toxic in contact with skin.

H331 Toxic if inhaled.

H370 Causes damage to organs.

Other information

Sk Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.

skin Identifies the possibility of significant uptake through the skin

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release

The information Herein Is Given In Good Faith, But No Warranty, Express or Implied, Is Made. Consult the Company for Further Information

3D-Fuel™ and logos are trademarks or registered trademarks of 3DomFuel™ in the USA and other countries.

NOTIC REGARDING MEDICAL APPLICATION RESTRICTIONS: The company does not recommend any of its products, including samples, for use: (A) in any application which is intended for any internal contact with human body fluids or body tissues (B) as a critical component in any medical device that supports or sustains human life; and (C) specifically pregnant women or in any applications designed specifically to promote or interfere with human reproduction.



Product Name: 3D-Fuel™ HydroPro
Product Code: HydroPro

Revision Number: 01
Revision Date: 12-24-2018

Print Date: 12-24-2018

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 or in any process, unless specified in the text.

The information Herein Is Given In Good Faith, But No Warranty, Express or Implied, Is Made. Consult the Company for Further Information

3D-Fuel™ and logos are trademarks or registered trademarks of 3DomFuel™ in the USA and other countries.

NOTIC REGARDING MEDICAL APPLICATION RESTRICTIONS: The company does not recommend any of its products, including samples, for use: (A) in any application which is intended for any internal contact with human body fluids or body tissues (B) as a critical component in any medical device that supports or sustains human life; and (C) specifically pregnant women or in any applications designed specifically to promote or interfere with human reproduction.