



BY WOBBLEWORKS

Friday, 23 May 2014

To Whom It May Concern,

The following document is the safety data sheet for the underlying polymer used in 3Doodler **PLA** plastic strands. This polymer is subsequently processed in the United Kingdom to create our 3Doodler plastic strands.

The 3Doodler is for adult use only and is not suitable for children. Please refer to the 3Doodler User Guide included with the 3Doodler (or available at www.the3doodler.com/manuals) for instructions relating to use of the 3Doodler, 3Doodler plastic strands, and any related safety warnings.

The 3Doodler should only be used with plastic strands approved by us. Misuse of your 3Doodler, setting your pen to the wrong heating temperature, and/or use of non-approved plastics or other materials may result in damage to your pen or injury to you, and will void your warranty.

Yours sincerely,

WobbleWorks

Product name:

Ingeo™ biopolymer

Product code:

4043D

Revision Number: 13**Revision date:**

04/01/2010

Print date:

09/16/2010

SAFETY DATA SHEET

In accordance with 1907/2006/EC.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING**Product name:** Ingeo™ biopolymer**Product label:** Ingeo™ biopolymer**Product code:** 4043D**Product trade name:** N/A**Product Use:** A biopolymer which can be used for thermoformed, coating, injection molded, blow molded, and fiber applications.**Manufacturer, importer, supplier:**

NatureWorks LLC, 15305 Minnetonka Blvd, Minnetonka, Minnesota 55345 USA

NatureWorks BV, P.O. Box 5528, 1410 EA Naarden, The Netherlands

Customer Information Center

1 800 664 6436 (USA)

+1 989 633 1746 (WORLD)

msdsinquiry@natureworksllc.com

Emergency telephone numbers (24 hours a day): (Medical Information) (651) 632-9273

(Transportation Information) CHEMTREC: 800-424-9300 (in the United States)

(Transportation Information) CHEMTREC: (703) 527-3887 (outside the United States)

2. HAZARDS IDENTIFICATION**Emergency Overview**

CAUTION! May cause eye/skin irritation. Burning produces obnoxious and toxic fumes. Avoid contact with skin and eyes. Avoid formation of dust and aerosols

Classification: None

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2. HAZARDS IDENTIFICATION

Appearance: Clear translucent opaque pellets.
Color: Clear Translucent Opaque
Physical state: Solid
Odor: Sweet

Risk Phrases: None
Risk Combination Phrases: None

Potential health effects:

Eye contact: Contact with eyes may cause irritation.

Skin contact: Substance may cause slight skin irritation.

Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Inhalation: Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. Low hazard for usual industrial or commercial handling.

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	EC-no:	CAS Number	Weight %	Classification
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3. COMPOSITION/INFORMATION ON INGREDIENTS

Poly lactide resin 9051-89-2	None	9051-89-2	>98	None
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4. FIRST AID MEASURES

Emergency telephone numbers (24 hours a day):

- (Medical Information) (651) 632-9273
- (Transportation Information) CHEMTREC: 800-424-9300 (in the United States)
- (Transportation Information) CHEMTREC: (703) 527-3887 (outside the United States)

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

Flammability:

Autoignition temperature: 388C

Flammability Limits in Air:

Flammable limits in air - lower (%): Not applicable

Flammable limits in air - upper (%): Not applicable

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5. FIRE FIGHTING MEASURES

Suitable extinguishing media: Foam. Water. Carbon dioxide (CO₂). Dry chemical. Alcohol resistant foams are preferred if available. General-purpose synthetic foams (including AFFF) or protein foams may function, but much less effectively.

Extinguishing media which must not be used for safety reasons: No information available

Hazardous decomposition products: Burning produces obnoxious and toxic fumes Aldehydes Carbon monoxide (CO) carbon dioxide (CO₂)

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

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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 122F (50 °C).

No special restrictions on storage with other products

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.

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.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Hand protection: Preventive skin protection.

Hygiene measures: Avoid contact with skin, eyes and clothing.

Exposure limits: None

Other Standards: This material can generate Particulates Not Otherwise Classifiable (PNOC). The Occupational Safety and Health Administration (OSHA) PEL/TWA for PNOC is 15 mg/m³ for total dust and 5 mg/m³ for the respirable fraction. The American Conference of Governmental Industrial Hygienists (ACGIH) TLV/TWA for PNOC is 10 mg/m³ for inhalable particulates and 3 mg/m³ for respirable particulates.

Environmental exposure controls: N/A

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance: Clear translucent opaque pellets.

Color: Clear Translucent Opaque

Physical state: Solid

Odor: Sweet

pH: Not applicable

Vapor pressure: Not determined

Vapor density: Not determined

Evaporation rate: Not determined

Density: 1.24 g/cc

Boiling point/range: Not applicable

Melting point/range: Not determined

Water solubility: Insoluble

Solubility in other solvents: None known

Flash point: Not applicable

Flammability Limits in Air:

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9. PHYSICAL AND CHEMICAL PROPERTIES:

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

10. STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions**Conditions to avoid:** Temperatures above 446F (230 °C).**Materials to avoid:** Oxidizing agents. Strong bases.**Hazardous decomposition products:** Burning produces obnoxious and toxic fumes. Aldehydes. Carbon monoxide (CO). carbon dioxide (CO₂).**Polymerization:** Not applicable

11. TOXICOLOGICAL INFORMATION

Principle Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.**Acute toxicity:** There were no target organ effects noted following ingestion or dermal exposure in animal studies.**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.

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11. TOXICOLOGICAL INFORMATION

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 Test.

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

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

12. ECOLOGICAL INFORMATION

Mobility: No data available

Bioaccumulation: Does not bioaccumulate. Inherently biodegradable.

Ecotoxicity effects: EC50/72h/algae > 1100 mg/L

13. DISPOSAL CONSIDERATIONS

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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 container. 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 PERTAINS 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.

Germany, Water Endangering Classes (WGK): not hazardous

14. TRANSPORT INFORMATION

IMDG:

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.

ADR/RID:

Proper shipping name: None
Class: Not regulated.
Packing group: None

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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, no 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.

INTERNATIONAL INVENTORIES

Canada DSL Inventory List :	Listed
REACH/EU EINECS List :	Components are in compliance with and/or are listed.
Japan (ECL) :	Listed
Australia (AICS):	Listed
Korean chemical inventory:	Listed
Phillipines (PICCS) inventory:	Not Listed
China inventory of existing chemical substances list :	Listed

Label information: Ingeo™ biopolymer

Contains:

Chemical name	CAS Number
Polylactide resin 9051-89-2	9051-89-2

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Classification: None**Risk Phrases:** None**Risk Combination Phrases:** None**Safety Phrases:** S25 - Avoid contact with the eyes.

S24 - Avoid contact with the skin.

Safety Combination Phrases:None**EC-no:** Not applicable

16. OTHER INFORMATION

Label information: Ingeo™ biopolymer**Product code:** 4043D**Reason for revision:** Not applicable**Revision date:** 04/01/2010**Print date:** 09/16/2010**Recommended restrictions:** None**Prepared by:** NatureWorks LLC Health and Safety

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