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Safety Data Sheet (SDS)
 Natural Down
 SDS# MA-002
 Issued Date: 06/01/21

SAFETY DATA SHEET (SDS)

1. PRODUCT & COMPANY IDENTIFICATION

Product Name	Terra Firma - Natural Down
Product Code	29181400
Identified Use	Industrial and Technical Applications
Supplier	Terra Firma Plant Technologies Ltd.
Address	106, 391 Tilley Road Kelowna, BC Canada V4V 2K5
Telephone Number (Canada)	(250) 863-5750 (Monday-Friday from 8:30am – 4:00pm PST)
24 Hour Medical Emergency Phone Number	INFOTRAC - 1-800-535-5053 EPA National Respoce Center: (800) 424-8802

2. HAZARDS IDENTIFICATION

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)	
Classification of the Substance or Mixture	
GHS Classification: Eye irritation: Category 2A Signal Word: Warning Symbol/Pictogram: 	
Hazard Statements: Causes serious eye irritation.	
GHS Label Elements	
Prevention Statements: Wash hands thoroughly after handling, wear eye protection / face protection.	
Response Statements: IF IN Eyes: Rinse cautiously with water for several minute. Remove contact lenses if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.	

3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical/Substance Name</u>	<u>Classification</u>	<u>CAS No.</u>	<u>Concentration (w/w %)</u>
Citric Acid, Anhydrous	Eye Irrit 2A, H319	77-92-9	<+100%

4. FIRST AID MEASURES

Description of First Aid Measures	
Eye Contact	Rinse eye area immediately with tap water for 10 minutes - open eyelids forcibly if necessary. Consult physician.
Skin Contact	Remove contaminated clothes. Wash affected skin with water and soap. Do not use any solvents.
Inhalation	Move to fresh air. If irritation or other symptoms occurs, seek medical attention.

5. FIRE FIGHTING MEASURES

Fire - Auto-ignition temperature: 1011 Celsius (1852 Farenheit) or by contact with an ignition source.
Explosion - Fine dust dispersed in air in sufficient concentrations, and in presence of an ignition source, is a potential dust explosion hazard.
Fire Extinguishing Media Special Information - Water spray, dry chemical, alcohol foam, or carbon dioxide. In the event of a fire, wear full protective clothing and NIOSH approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Methods for cleaning up - Collect solid (avoid dust formation) and hand over to waste removal. Rinse with plenty of water.

7. HANDLING & STORAGE

Precautions for Safe Handling

Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. Avoid contact with eyes. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label to medical attendee(s). Keep away from incompatibles such as oxidizing agents, reducing agents, metals, alkalis.

Conditions for Safe Storage, Including any Incompatibilities

Keep container tightly closed. Keep container in a cool, well-ventilated area..

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Controls

Engineering Controls

Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Hand Protection

Wear protective gloves (neoprene, nitrile, or butyl rubber).

Eye Protection

Safety glasses or goggles, as needed, to prevent eye contact.

Respiratory Protection

In case of open handling of larger quantities or accidental release: Use of a particle mask or respirator with independent air supply is recommended.

9. PHYSICAL & CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Property	Value
State	powder, different granular size
Appearance	white
Odor	odourless, with a strong acidic taste
Odor Threshold	Not applicable
pH value (20 C)	1.7 10% solution
Melting Point /Freezing Point	152 to 154oC
Initial boiling point & range	Not applicable
Flashpoint	Not applicable
	Not applicable
	Not applicable
Flammable Limits in Air % by Volume	LEL (Lower): Not applicable UEL (Upper): Not applicable
Vapor pressure	Not applicable
Vapor density (air=1)	Not applicable
Relative Density (water=1)	1.665 g/cm ³ (20 C)
Solubility	~750,000 mg/l, water, soluble in ethanol and ether
Partition coefficient (n-octanol/water)	log Pow -1.72 (octane/water)
Autoignition temperature	500C
Decomposition temperature	Not applicable
Viscosity	Not applicable
Flammability Class	Not applicable
Oxidation Properties	Not applicable

10. STABILITY & REACTIVITY

Conditions to avoid

- humidity
- temperatures above 40 Celsius

Materials to avoid

- potassium tartrate, alkalis, alkaline earth carbonates and bicarbonates, metal nitrates, acetates, sulfides

Note

- slightly hygroscopic

11. TOXICOLOGICAL INFORMATION

Acute toxicity	- LD50 5'400 mg/kg (oral, mouse) - LD50 >7,000 mg/kg (oral, rabbit) - LD50 >6,730 mg/kg (oral, rabbit)
Subacute toxicity	- NOEL 4'000 mg/kg/d (oral, rat; 90 days)
Local effects	- eye: strongly irritating (rabbit) - skin: moderately irritating (rabbit)
Chronic toxicity	- well tolerated 2000 m/kg/d (oral, rat; 90 days)
Mutagenicity	- not mutagenic
Carcinogenicity	- not carcinogenic (rat) - not carcinogenic (mouse)
Reproduction toxicity	- not teratogenic
Note	- intermediate product of human metabolism (citric acid cycle)

12. ECOLOGICAL INFORMATION

Inherent biodegradability	- well inherently biodegradable 98%, 7 days
Ecotoxicity	- moderately toxic for planktonic crustaceans (Daphnia magna) LC0 80 mg/l. - barely toxic for fish (goldfish) EC0 625 mg/l - barely toxic for microorganisms (Pseudomonas putida) EC0(16 h) 485 mg/l - barely toxic for protozoa (Entosiphon sulcatum) - moderately toxic for algae (Microcystic aeruginosa) EC0 640 mg/l
Air Pollution	observe local/national regulations.

13. DISPOSAL CONSIDERATIONS

13.1 Disposal Methods

Waste treatment methods: Hazardous waste. Dispose of in compliance with the laws and regulations pertaining to this product in your jurisdiction.

Uncleansed packaging: Empty containers should be taken for local recycling, recovery or waste disposal

14. TRANSPORT INFORMATION

14.1 Transport information

	<u>DOT</u>	<u>IMDG</u>	<u>IATA</u>	<u>TDG</u>
UN number	Not applicable.	Not applicable.	Not applicable.	Not applicable.
Proper shipping name	Not regulated.	Not regulated.	Not regulated.	Not regulated.
Hazard class(es)	Not regulated.	Not regulated.	Not regulated.	Not regulated.
Packing group	Not applicable.	Not applicable.	Not applicable.	Not applicable.
Special precautions	None.			

15. REGULATORY INFORMATION

SARA 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components	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.
SARA 311/312 Hazards	Acute Health Hazard



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16. OTHER INFORMATION

- Use
- food and feed additive
 - ingredient in pharmaceutical preparations, especially in Effervescent tablets
 - synergist in antioxidant mixtures

Disclaimer: The information provided in this Safety Data Sheet (SDS) is provided in good faith and believed to be accurate at the time of preparation of the SDS. However, Terra Firma Plant Technologies Ltd. and its subsidiaries or affiliates extend no warranties, make no representations, and assume no responsibility as to the accuracy, suitability, or completeness of such information.

Additionally, neither Terra Firma Plant Technologies Ltd. nor any of its subsidiaries or affiliates represents or guarantees that this information or product may be used without infringing the intellectual property rights of others. It is the users' own responsibility to determine the suitability of this information for their own particular use of this product. If necessary, contact Terra Firma Plant Technologies Ltd. to confirm that you have the most current product label and SDS.

This Safety Data Sheet (SDS) may provide more information than the product label but does not replace or modify the product labeling (attached to and accompanying the product container). The product SDS and the product label both provide consistent and important health, safety, and environmental information as required by the Occupational Health and Safety Act (29 CFR 1910.1200, "Hazcom"). This requirement covers employers, employees, emergency responders, users and others handling the product. All necessary hazard classification and appropriate precautionary, use, storage, and disposal information is set forth on the labeling and the SDS.

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SDS Dated:

Revision notes:

Revision #