SECTION 1 – IDENTIFICATION

PRODUCT IDENTIFIER: Cellulose Insulation

PRODUCT NAME: SANCTUARY (INSSANC)

MANUFACTURER: US Greenfiber
5500 77 Center Drive, Suite 100, Charlotte, NC 28217, USA
Emergency Telephone Number: 800-666-4824 (8 am - 5 pm EST Mon-Fri)

SECTION 2 – HAZARD IDENTIFICATION

Classification According to OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification: While this material is not considered hazardous by the OSHA Hazard Communication Standard, this SDS contains valuable information critical to the safe handling and proper use of the product this SDS should be retained and available for employees and other user of this product.

Signal Word: No Signal Word

Hazard Statement: No known significant effects or critical hazards.

Other Hazards: Cellulose fiber is a combustible dust when not treated with fire retardant

Precautionary Statements: Prevention: Obtain special instruction before use. Do not handle until all safety precautions have been read and understood.
Use personal protective equipment as required per section 8.
Response: If exposed or concerned, get medical advice/attention.
Disposal: Dispose of in accordance to local and state regulations.

SECTION 3 – COMPOSITION AND INGREDIENT INFORMATION

COMPONENT	CAS#	% BY WEIGHT	EXPOSURE LIMITS
Newsprint (Cellulose Fiber)	#65996-61-4	Up to 85%	See Section 8 for Occupational Exposure Limits
Boric Acid H3BO3	#10043-35-3	Not more than 15%	See Section 8 for Occupational Exposure Limits
Calcium Sulfate Dihydrate	#10101-41-4	Not more than 4%	See Section 8 for Occupational Exposure Limits
Amylopectin	#112899-91-0	Up to 2%	See Section 8 for Occupational Exposure Limits
Distillate Mineral Oil	#8042-47-5	Not more than 2%	See Section 8 for Occupational Exposure Limits

SECTION 4 – FIRST AID MEASURES

Description of necessary first aid measures:

- **Eyes:** For dust exposure, immediately flush eyes with plenty of water for at least 15 minutes. Seek medical attention if irritation persists.
- **Skin:** If skin is exposed, wash with soap and large amounts of water. If irritation persists, seek medical attention.
- **Inhalation:** If irritation or difficulty in breathing occurs, remove to fresh air. Seek medical attention if condition persists.
- **Ingestion:** Symptoms may include diarrhea, nausea, and vomiting. Seek medical attention if material was ingested and symptoms occur.

Most important symptoms and effects both acute and delayed:

- **Acute:** Minor respiratory and eye irritant. Not a skin irritant unless skin is broken. Gloves should be worn in that situation**.**
- **Chronic:** None known

Indication of any immediate medical attention and special treatment needed:

- **Note to Physicians:** Exposure to dust may aggravate symptoms of persons with pre-existing respiratory tract conditions and may cause skin and gastrointestinal symptoms.

SECTION 5 – FIRE FIGHTING MEASURES

Suitable extinguishing media:

- **Extinguishing Media:** Water, dry chemical and other agents rated for a wood fire (Type A fire). Use Type A rated extinguisher.

Unsuitable extinguishing media:

- None known

Special hazards arising from the chemical:

- **Combustible:** Material may decompose on contact with extreme temperatures and open flames.

Special protective equipment and precautions for firefighters:

- If possible, isolate the fire by moving other combustible materials. If the fire is small, use a hose-line or extinguisher rated for a Type A fire. If possible, dike and collect water used to fight fires. Firefighters should wear normal protective equipment (full bunker gear) and positive-pressure, self-contained breathing apparatus.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:

- **For non-emergency personnel:**
  - Eye goggles and gloves are not required for normal industrial exposures, but eye protection according to ANSI Z.87.1 or other national standard. Respirators should be considered if environment is excessively dusty.
- **For emergency responders:**
  - Eye goggles and gloves are not required for normal industrial exposures, but eye protection according to ANSI Z.87.1 or other national standard. Respirators should be considered if environment is excessively dusty.

Environmental precautions:

- Contains water-soluble inorganic mineral salts which may damage trees or vegetation exposed to large quantities. At high concentrations, may damage localized vegetation,fish, and other aquatic life.This product is a non-hazardous waste when spilled or disposed of as defined in the Resource Conservation and Recovery Act (RCRA) regulations (40 CFR 261).

Methods and materials for containment and cleaning up:

- **Land**: Shovel, sweep, or vacuum product. Place in disposal container. Avoid bodies of water.
- **Water**: Large quantities may cause localized contamination of surrounding waters depending on the quantity spilled.

Reference to other sections:

- Refer to regulatory information in Section 15 for additional information regarding EPA and California regulations.

SECTION 7 – HANDLING AND STORAGE

Precautions for safe handling:

- **General:** No special handling is required. Storage of sealed bags in a dry, indoor location is recommended. To maintain product integrity, handle on a "first-in-first-out" basis. Use good housekeeping and engineering controls so that dust levels are below the exposure limits listed in Section 3.

Conditions for safe storage, including any incompatibilities:

- **Storage Temperature:** Ambient
- **Storage Pressure:** Atmospheric
- **Special Sensitivity:** None

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

This product is listed/regulated by OSHA and Cal/OSHA as "Particulates Not Otherwise Regulated" or "Nuisance Dust." This product is list by ACGIH as "Particulates Not Otherwise Specified."

COMPONENT/CAS #	EXPOSURE LIMITS
Newsprint **(Cellulose Fiber)** **#65996-61-4**	OSHA PEL-TWA=15mg/m^3 total dust (PNOR) ***PNOR - Particulates Not Otherwise Regulated or Nuisance Dust*** OSHA PEL-TWA=5mg/m^3 respirable fraction (PNOR) Cal OSHA PEL=10mg/m^3 total dust (PNOR) ACGIH TLV-TWA=10mg/m^3 inhalable (PNOS) ***PNOS – Particulates Not Otherwise Specified*** ACGIH TLV-TWA=3mg/m^3 respirable (PNOS)
Boric Acid **H_3BO_3** **#10043-35-3**	OSHA PEL-TWA=15mg/m^3 total dust (PNOR) OSHA PEL-TWA=5mg/m^3 respirable fraction (PNOR) Cal OSHA PEL=5mg/m^3 ACGIH TLV-TWA=2mg/m^3 ACGIH TLV-STEL=6mg/m^3 (inhalable fraction – Borate Compounds, inorganic)
Calcium Sulphate Dihydrate **#10101-41-4**	OSHA PEL-TWA=15mg/m^3 total dust (PNOR) ACGIH TLV-TWA=10mg/m^3 inhalable (PNOS)
Amylopectin **#113894-91-0**	OSHA PEL-TWA=15mg/m^3 total dust (PNOR) OSHA PEL TWA=5mg/m^3 respirable fraction (PNOR)
Distillate Mineral Oil **#8042-47-5**	None (Oil mist exposure not applicable in finished product)

Appropriate engineering controls:

- **General Exposure Controls:** No specific controls are needed. Use standard good housekeeping practices and engineering controls to minimize nuisance levels.
- **Ventilation**: Normal and adequate ventilation.

Individual protection measures, such as personal protective equipment:

- **Respiratory Protection:** If housekeeping and engineering controls do not maintain nuisance levels below regulatory limits or dust concentration is unknown, use a NIOSH-approved mask.
- **Eye Protection:** Wear ANSI Z.87.1 approved eye protection if environment is excessively dusty.
- **Hand Protection:** If skin is broken or sensitive, use gloves.
- **Other Protective Clothing:** If skin is broken or sensitive, cover with appropriate clothing.
- **Work/Hygienic Practices:** Standard hygienic practices.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance:** Gray/Brown
- **Odor:** Odorless
- **Odor Threshold:** N/A
- **pH**: <8.2 (2% suspension @ 25° C)
- **Melting Point/Freezing Point:** N/A
- **Initial Boiling Point and Boiling Range:** N/A
- **Flash Point:** N/A
- **Evaporation Rate:** N/A
- **Flammability (solid, gas):** N/A
- **Upper/Lower Flammability or Explosive Limits:** N/A
- **Vapor Pressure:** Negligible @ 20° C
- **Vapor Density:** N/A
- **Relative Density:** 9 LB/FT^{3} compressed
- **Solubility(ies):** Not Soluble
- **Partition Coefficient: n-octanol/water:** N/A
- **Auto-Ignition Temperature:** N/A
- **Decomposition temperature:** Unknown
- **Viscosity:** N/A

SECTION 10 – STABILITY AND REACTIVITY

- **Reactivity:** None Known
- **Chemical Stability:** Stable
- **Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- **Conditions to Avoid** (e.g., static discharge, shock, or vibration): Reaction with strong reducing agents such as metal hydrides or alkali metals will generate hydrogen gas which could create an explosive hazard. Keep away from strong oxidizers, such as concentrated nitric acid, hydrogen peroxide, and chlorine.
- **Incompatible Materials:** None known
- **Hazardous Decomposition Products:** None known

SECTION 11 – TOXICOLOGICAL INFORMATION

Toxicological information: No toxicological data is available for the product. Toxicological information for components of this product is listed below.

Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact):

NEWSPRINT (Cellulose Fiber)

- **Eye Irritation:** None reported
- **Skin Irritation:** None reported
- **Acute Oral Toxicity:** None reported
- **Acute Inhalation Toxicity:** LC50, rat, =5,800 mg/m^3/4 hours
- **Sub Chronic:** None reported
- **Chronic:** None reported
- **Teratology:** None reported
- **Reproduction:** None reported
- **Germ Cell Mutagenicity:** None reported
- **Carcinogenicity:** None reported

BORIC ACID:

- **Eye Irritation:** Not irritating, corneal involvement or irritation clearing in 7 days. Classification: Based on mean scores < 1, and the effects were fully reversible within 7 days, the classification criteria are not met. Many years of occupational exposure indicate no adverse effects on human eye.
- **Skin Irritation:** No skin irritation. Mean Primary Irritation Score: 0.1. Based on the available data, the classification criteria are not met.
- **Acute Oral Toxicity:** No data available
- **Acute Inhalation Toxicity:** Low acute inhalation toxicity. Based on the available data, the classification criteria are not met.
- **Acute Dermal Toxicity:** Low acute dermal toxicity; Poorly absorbed through intact skin. Based on the available data, the classification criteria are not met.
- **Reproduction:** Borate-treated cellulose insulation contains boric acid and cellulose fiber. Borate-treated cellulose insulation was tested for purposes of hazard classification under the Occupational Safety and Health Administration's 2012 Hazard Communication Standard. In a study conducted under OECD Guideline 414, there were no developmental effects in rats exposed to up to 270 mg/m3 (the highest exposure tested). In workers Chronically exposed to high levels of borates for several years by way of inhalation, food, and drinking water, there was a clear absence of any reproductive effects.
- **Germ Cell Mutagenicity:** Not mutagenic. Based on the available data, the classification criteria are not met.
- **Carcinogenicity:** No evidence of carcinogenicity. Based on the available data, the classification criteria are not met.

AMYLOPECTIN

- **Eye Irritation:** None reported
- **Skin Irritation:** None reported
- **Acute Oral Toxicity:** None reported
- **Acute Inhalation Toxicity:** None reported
- **Sub Chronic:** None available
- **Chronic:** None available
- **Teratology:** None available
- **Reproduction:** None available
- **Germ Cell Mutagenicity:** None available
- **Carcinogenicity:** None available

CALCIUM SULPHATE DIHYDRATE

- **Eye Irritation:** None available
- **Skin Irritation:** None available
- **Acute Oral Toxicity:** None available
- **Acute Inhalation Toxicity**
- **Sub Chronic:** None available
- **Chronic:** None Available
- **Teratology:** None available
- **Reproduction:** None available
- **Germ Cell Mutagenicity:**
- **Carcinogenicity:** None available

DISTILLATE MINERAL OIL

- **Eye Irritation:** None reported
- **Skin Irritation:** LD50, Dermal, rabit, >2000 mg/kg, conclusion/summary – not available
- **Acute Oral Toxicity:** LD50, Oral, rat >5000 mg/kg, conclusion/summary – not available
- **Acute Inhalation Toxicity:** LC50 Inhalation dusts/mists, rat, >5280 mg/m^3, conclusion/summary – not available
- **Sub Chronic:** None available
- **Chronic:** None available
- **Teratology:** None available
- **Reproduction:** None available
- **Germ Cell Mutagenicity:** None Available
- **Carcinogenicity:** None available

Symptoms related to the physical, and chemical and toxicological characteristics:

- Products are not intended for ingestion. Small amounts (e.g. a teaspoonful) swallowed accidentally are not likely to cause effects. Symptoms of accidental over-exposure to high doses of inorganic borate salts have been associated with ingestion or absorption through large areas of severely damaged skin. These may include nausea, vomiting, and diarrhea, with delayed effects of skin redness and peeling.

Delayed and immediate effects as well as chronic effects from short and long-term exposure:

- Human epidemiological studies show no increase in pulmonary disease in occupational populations with chronic exposures to boric acid and sodium borate dust. Human epidemiological studies indicate no effect on fertility in occupational populations with chronic exposures to borate dust and indicate no effect to a general population with high exposures to borates in the environment.

Numerical measures of toxicity (such as acute toxicity):

- None. This product is a mixture.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity:

NEWSPRINT (Cellulose Fiber)

- **Ecotoxicity**: Biodegrades slowly in water (half-life range 1 month – 1 year in freshwater and coastal seawater)
- **Persistence and Degradability:** Not available
- **Bioaccumulative Potential:** Not available
- **Mobility in Soil:** Not available
- **Other Adverse Effects (such as hazardous to the ozone layer):** None known

BORIC ACID

- **Ecotoxicity:** Based on the acute data for freshwater species, boric acid is not classified as hazardous to the environment.
- **Persistence and Degradability:** Biodegradation is not an applicable endpoint since boric acid is an inorganic substance.
- **Bioaccumulative Potential:** This product will undergo hydrolysis in water to form undissociated boric acid. Boric acid will not biomagnify through the food chain. Octanol/Water partition coefficient: Log P_{ow} = -0.7570 @ 25°C
- **Mobility in Soil:** Boric acid is soluble in water and is leachable through normal soil. Adsorption to soils or sediments is insignificant.
- **Other Adverse Effects (such as hazardous to the ozone layer):** None known

AMYLOPECTIN

- **Ecotoxicity:** Not available
- **Persistence and Degradability:** Not available
- **Bioaccumulative Potential:** Not available
- **Mobility in Soil:** Not available
- **Other Adverse Effects (such as hazardous to the ozone layer):** None known

DISTILLATE MINERAL OIL

- **Ecotoxicity:** NOEC 0.098 mg/l, fish, 14 days.
- **Persistence and Degradability:** Not available
- **Bioaccumulative potential:** Not available
- **Mobility in Soil:** Not available
- **Other Adverse Effects (such as hazardous to the ozone layer):** None known

CALCIUM SULPHATE DIHYDRATE

- **Ecotoxicity:** 96 Hr LC50 fish, mg/l: >1970 (fathead minnow)
- **Persistence and Degradability:** Calcium sulphate dissolves in water forming calcium and sulfate ions
- **Bioaccumulative Potential:** Not expected
- **Mobility in Soil:** Not available
- **Other Adverse Effects (such as hazardous to the ozone layer):** None known

SECTION 13 – DISPOSAL CONSIDERATIONS

- Dispose as a non-hazardous waste in accordance with all local, state, and federal regulations.

SECTION 14 – TRANSPORT INFORMATION

- May be shipped normally as a non-hazardous material.

SECTION 15 – REGULATORY INFORMATION

- **Superfund**: CERCLA/SARA. This product is not listed under the Comprehensive Environmental Response Compensation and Liability Act(CERCLA) or its 1986 amendments, the Superfund Amendments and Reauthorization Act (SARA), including substances listed under Section 313 of SARA, Toxic Chemicals, 42 USC 11023, 40 CFR 372.65; Section 302 of SARA Extremely Hazardous Substances, 42 USC 11002, 40 CFR 355; or the CERCLA Hazardous Substances list, 42 USC 9604, 40 CFR 302.

- **RCRA:** This product is not listed as a hazardous waste under any sections of the Resource Conservation and Recovery Act or regulations (40 CFR 261 et seq.).

- **Safe Drinking Water Act:** This product is not regulated under the SDWA, 42 USC 300g-1, 40 CFR 141 et seq. Consult state and local regulations for possible water quality advisories regarding boron and ammonia.

- **California Proposition 65:** This product is not listed on any Proposition 65 lists of carcinogens or reproductive toxicants.

- **OSHA Carcinogen:** Not listed

- **Clean Water Act (Federal Water Pollution Control Act):** 33 USC 1251 et seq.: This product is not itself a discharge covered by any water quality criteria of Section 304 of the CWA, 33 USC 1314. This product is not on the Section 307 List of Priority Pollutants, 33 USC 1317, 40 CFR 116. This product is not on the Section 311 List of Hazardous Substances, 33 USC 1321, 40 CFR 116.

- **TSCA No.:** This product does not appear on the EPA TSCA inventory list. Ammonium sulfate and boric acid appear on the EPA TSCA inventory list under the CAS Nos. 7783-20-2 and 10043-35-3 respectively.
- **OSHA/Cal/OSHA:** This SDS document meets the requirements of both OSHA and Cal/OSHA hazard communication standards. Refer to Section 8 for regulatory exposure limits.
- **IARC:** The International Agency for Research on Cancer (of the World Health Organization) does not list or categorize this product as a carcinogen.
- **NTP Annual Report on Carcinogens:** Not listed

SECTION 16 – OTHER INFORMATION

INFORMATION PRESENTED HEREIN HAS BEEN COMPILED FROM SOURCES CONSIDERED DEPENDABLE AND IS ACCURATE AND RELIABLE TO THE BEST OF OUR KNOWLEDGE AND BELIEF, BUT IS NOT GUARANTEED TO BE SO. NOTHING HEREIN IS TO BE CONSTRUED AS RECOMMENDING ANY PRACTICE OR ANY PRODUCT IN VIOLATION OF ANY PATENT OR IN VIOLATION OF ANY LAW OR REGULATION. THE USER IS RESPONSIBLE TO DETERMINE THE SUITABILITY OF ANY MATERIAL FOR A SPECIFIC PURPOSE AND ADOPT NECESSARY SAFETY PRECAUTIONS. WE MAKE NO WARRANTY AS TO RESULTS TO BE OBTAINED IN USING ANY MATERIAL AND, SINCE CONDITIONS OR USE ARE NOT UNDER OUR CONTROL, WE MUST NECESSARILY DISCLAIM ALL LIABILITY WITH RESPECT TO USE OF ANY MATERIAL SUPPLIED BY US.

Cellulose insulation using borates have a long track record of being safe when used as directed, but GHS classification criteria are based on potential hazards. These hazards are associated with animals in a laboratory setting being exposed to large amounts of borates in their feed over long periods of time – exposures that are not relevant to people, even those who work with borates every day. Nevertheless, in order to comply with GHS, Greenfiber has self-classified its borate insulation products as reproductive toxicants in the category that represents the lowest hazard.

HMIS Rating		**National Fire Protection Association (NFPA)**	
Health	1	Red (Flammability)	1
Flammability	1	Yellow (Reactivity)	0
Reactivity	0	Blue (Acute Health)	1*
Personal Protection	E	**Chronic Effects*	

ABBREVIATIONS

CAS	Chemical Abstract Services (identifies specific chemical)	**OSHA**	Occupational Safety and Health Administration
mg/m^3	Milligrams per cubic meter	**PNOR**	Particulates Not Otherwise Regulated
LCLo	Lethal concentration low	**PNOS**	Particulates Not Otherwise Specified
LDLo	Lethal dose low	**PEL**	OSHA Permissible Exposure Limit
LC50	Lethal concentration 50%	**ppm**	Parts per million
LD50	Lethal dose 50%	**RfD**	Reference Dose
LOAEL	Lowest Observed Adverse Effect Level	**RTECS**	Registry of Toxic Effects of Chemical Substances
mg/l/H	Milligrams per liter per hour	**TDLo**	Toxic dose low
mg/kg	Milligrams per kilogram	**TLV**	ACGIH Threshold Limit Value
mg/m^3	Milligrams per cubic meter	**TWA**	8 hour Time Weighted Average exposure

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8. 29 CFR 1910.1000 TABLE Z-1 and Z-3
9. California OSHA Title 8, Section 5155, Table AC-1
10. OSHA 29 CFR 1910.1200 & related Appendices - 2012