MATERIAL SAFETY DATA SHEET

PRODUCT NAME: GREENSHIELD PREMIUM CELLULOSE INSULATION - 30lbs
PRODUCT ID: CELLULOSE INSULATION, STABILIZED

SECTION I MANUFACTURER'S INFORMATION

CAROLINA PRECISION FIBERS, INC
PO BOX 624
ELKIN, NORTH CAROLINA 28621

EMERGENCY TELEPHONE NUMBER: 866-146-3278
NUMBER FOR INFORMATION: 336-527-4140
DATE PREPARED: October 1, 2009, revised 7-19-2010

SECTION II COMPOSITION AND INGREDIENT INFORMATION

COMPONENTS	CAS	%	OSHA PEL
Cellulose fiber	65996-61-4	Not less than 85%	PEL-TWA = 15mg/m^3 total dust (PNOC) PEL-TWA = 5 mg/m^3 respirable fraction TLV-TWA = 10 mg/m^3 inhalable, no asbestos and quartz <1% (PNOC) TLV-TWA=3 mg/m^3 respirable, no asbestos and quartz<1% (PNOC)
Ammonium Sulfate $(NH_4)_2SO_4$	7783-20-2	Not more than 11%	Same
Boric Acid H_3BO_3	10043-35-3	Not more than 10%	Same except the ACGIH for the inhalable fraction = 2 mg/m^3
Guar / Starch	9005-25-8	Not more than 3%	Same
Mono-Ammonium Phosphate $NH_4H_2PO_4$	7722-76-1	Not more than 2%	Same
Zinc Sulfate $ZnSO_4H_2O$	7446-19-7	Not more than 2%	Same

SECTION III PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT:	N/A	SPECIFIC GRAVITY (H2O = 1):	N/A
VAPOR PRESSURE (mmHg):	Negligible @ 20° C	MELTING POINT:	N/A
VAPOR DENSITY (Air-1):	N/A	EVAPORATION RATE: (Butyl Acetate = 1)	N/A
SOLUBILITY IN WATER:	Insoluble; dispersible		
APPEARANCE AND ODOR:	Gray in color with no odor		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Avoid extreme heat and open flame.

May emit carbon monoxide gas and boric acid and other hazardous particles during thermal decomposition.

FLASH POINT	N/A
COMBUSTIBLE	Material may decompose on contact with extreme temperatures and open flames.
FLAMMABLE LIMITS	LEL: Not applicable UEL: Not applicable
AUTOIGNITION TEMPURATURE	Not determined
EXPLOSION HAZARD	None expected for product based on particle size. Airborne concentrations of combustible dust, when combined with an ignition source, can create an explosion hazard if the dust concentration exceeds 15 mg/m^3
EXTINGUISHING MEDIA	Water, dry chemical and other agents rated for Type A fires (wood fire). Use Type A extinguisher.
FIRE FIGHTING INSTRUCTIONS	Evacuate the area and notify the fire department. If possible, isolate the fire. If the fire is small use a hone-line or Type A extinguisher. If possible, dike and collect water used to fight fires. Fire-fighters should wear full bunker gear and positive-pressure, self-contained breathing apparatus.

SECTION V REACTIVITY DATA

STABILITY:	Stable
HAZARDOUS DECOMPOSITION:	None
HAZARDOUS POLYMERIZATION:	Will not occur
MATERIALS TO AVOID:	Metal Hydrides, Alkali Metals, Strong Oxidizers, Hydrogen Peroxide and Chlorine.

SECTION VI HEALTH HAZARD DATA

INHALATION	Slightly irritating. Persons with respiratory problems should avoid breathing dust.	Move to fresh air. If irritation persists, seek medical attention.
SKIN CONTACT	Not Usually Problematic	Wash with soap and large amounts of water. If irritation persists, seek medical attention.
EYE CONTACT	Slightly Irritating - Wear Eye Protection	Open eyelids and flush thoroughly with water. If irritation persists, seek medical attention.
INGESTION	Do not ingest.	Diarrhea, nausea and vomiting are symptoms of ingestion. Seek medical attention if ingested and symptoms occur.
CANCER	None.	Neither the end product nor any of its components.
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 VII HANDLING AND STORAGE

GENERAL	No special handling is required.
HANDLING PRECAUTIONS:	Use good housekeeping and engineering controls so that dust levels are below the exposure limits listed in Section II.
STORAGE TEMPERATURE	Ambient
STORAGE PRESSURE	Atmospheric
STORAGE REQUIREMENTS:	Storage of sealed bags in a dry, indoor location is recommended.

SECTION VIII CONTROL MEASURES

GENERAL EXPOSURE	No specific controls are needed. Use standard good housekeeping practices and engineering controls to minimize nuisance levels.
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-approved eye protection if environment is excessively dusty.
HAND PROTECTION	If skin is broken or sensitive, use gloves.
OTHER PROTECTIVE CLOTHING	None.
VENTILATION	Normal and adequate ventilation.
WORK/HYGIENIC	Standard hygienic practices.
OCCUPATIONAL EXPOSURE	This product is listed/regulated by OSHA and ACGIH as "Particulates Not Otherwise Classified" or "Nuisance Dust."

SECTION IX TOXICOLOGICAL INFORMATION

BORIC ACID	
EYE	None listed, is expected to be an eye irritant.
SKIN	Mild irritation based on Standard Draize Test. LDLo, skin, Human, 1200 mg/kg
INGESTION	LDLo, oral, human, 429 mg/kg. LD40, oral, rat, 2600 mg/kg
INHALATION	LCLo, inhalation, rat, 28 mg/m3/4H
SUBCHRONIC	TDLo, oral, rat, 45 gm/kg/90D-C
CHRONIC	TDLo, oral, rat, 244 gm/kg/2Y-C
TERATOLOGY	None reported
REPRODUCTION	TDLo, oral, rat, 660 mg/kg, specific developmental abnormalities—musculoskeletal system
MUTAGENICITY	Mutation in microorganisms, Escherichia Coli, 17000 ppm/24H

AMMONIUM SULFATE	
EYE	None Listed
SKIN	None Listed
INGESTION	TDLo, oral, human, 1500 mg/kg, diarrhea, nausea, vomiting, LD50, oral, rat, 2840 mg/kg

INHALATION	None reported
SUBCHRONIC	None reported
CHRONIC	None reported
TERATOLOGY	None reported
REPRODUCTION	None reported
MUTAGENICITY	None reported

STARCH	
EYE	None reported
SKIN	Mild irritation based on Standard Draize Test
INGESTION	None reported
INHALATION	None reported
SUBCHRONIC	None reported
CHRONIC	None reported
TERATOLOGY	None reported
REPRODUCTION	None reported
MUTAGENICITY	None reported

MONOAMMONIUM PHOSOPHATE	
EYE	Irritation with the extent of damage depending on duration of contact
SKIN	Contact dermatitis may follow repeated skin contact
INGESTION	With large doses there is the possibility of dieresis and systemic poisoning
INHALATION	None reported
SUBCHRONIC	None reported
CHRONIC	None reported
TERATOLOGY	None reported
REPRODUCTION	None reported
MUTAGENICITY	None reported

ZINC SULFATE	
ROUTE OF ENTRY	Ingestion or inhalation
TARGET ORGANS	Respiratory system, eyes and skin.
ACUTE EXPOSURE	May cause skin irritation, eye irritation, possible corneal burn, irritation to nose and throat.
CHRONIC EXPOSURE	May cause skin dermatitis, eye conjunctivitis
CHRONIC	No known ingestion reaction anticipated
TERATOLOGY	May cause inhalation reflex brochoconstruction

PHYSICAL DATA

PHYSICAL STATE	White powder or granules	VAPOR DENSITY	0 (water = 1)
BOILING POINT	N/A	GRAVITY SOLUBILITY IN WATER	30% at 70˚F
MELTING POINT	No Data	APPEARANCE	White powder or granules
CRYSTALLIZATION POINT	70˚F	EVAPORATION RATE	N/A

SECTION X ECOLOGICAL INFORMATION

BORIC ACID	
ECOTOXICITY	LC50, Daphnia magna, 133 mg/l/48H. RfD, oral, human, 0.09 mg/kg/day, testicular atrophy, spermatogenic arrest. LC50, Trout, 100 ppm.
CHEMICAL FATE INFORMATION	Boron is absorbed into clay particles, with the maximum absorption in the pH range of 7-9. The amount of boron absorbed depends on the surface area of the clay.

AMMONIUM SULFATE	
ECOTOXICITY	TLm, Daphnia magna, 423 mg/L/24H.
CHEMICAL FATE INFORMATION	Not Listed.

STARCH	
ECOTOXICITY	Not Listed.
CHEMICAL FATE INFORMATION	Not Listed.

MONOAMMONIUM PHOSPHATE	
ECOTOXICITY	Not Listed.
CHEMICAL FATE INFORMATION	Not Listed.

ZINC SULFATE (PERSONAL PROTECTIVE EQUIPMENT)	
RESPIRATOR	If exposure cannot be maintained at or below established OSHA guidelines, respiratory protection must be provided in accordance with 29 CFR 1910.134 requirements.
SKIN PROTECTION	Wear appropriate protective clothing and chemical resistant gloves as needed to prevent skin contact. Consult manufacturer to determine appropriate type of gloves or clothing for your particular application. Clean contaminated clothing and protective equipment before reuse. Wash thoroughly after handling material.
EYE PROTECTION	Wear splash proof or dust proof safety goggles whenever there is a potential for eye contact.
VENTILATION	Provide local exhaust or process enclosing ventilation to maintain exposure below OSHA guidelines 29 CFR 1910.1000 subpart 7.

SECTION XI REGULATORY INFORMATION

SUPERFUND	If exposure cannot be maintained at or below established OSHA guidelines, respiratory protection must be provided in accordance with 29 CFR 1910.134 requirements.
RCRA	Wear appropriate protective clothing and chemical resistant gloves as needed to prevent skin contact. Consult manufacturer to determine appropriate type of gloves or clothing for your particular application. Clean contaminated clothing and protective equipment before reuse. Wash thoroughly after handling material.
SAFE DRINKING WATER ACT	Wear splash proof or dust proof safety goggles whenever there is a potential for eye contact.
CALIFORNIA PROPOSITION 65	Provide local exhaust or process enclosing ventilation to maintain exposure below OSHA guidelines 29 CFR 1910.1000 subpart 7.
OSHA CARCINOGEN	Not listed.
CLEAN WATER 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 MSDS document meets the requirements of OSHA and Cal/OSHA hazard communication standards. Refer to Section VIII for regulatory exposure limits.
IARC	The international Agency for Research on Cancer does not list or categorize this product as a carcinogen.
NTP ANNUAL REPORT OF CARCINOGENS	Not Listed

SECTION XII TRANSPORT INFORMATION

May be shipped normally as a non-hazardous material.

SECTION XIII OTHER INFORMATION

ALL INFORMATION, RECOMMENDATIONS AND SUGGESTIONS APPEARING HEREIN CONCERNING OUR PRODUCTS ARE BASED UPON TESTS AND DATA BELIEVED TO BE RELIABLE. HOWEVER, IT IS THE USER'S RESPONSIBILITY TO DETERMINE THE SAFETY, TOXICITY AND SUITABILITY FOR HIS/HER OWN USE OF THE PRODUCT DESCRIBED HEREIN. SINCE THE ACTUAL USE BY OTHERS IS BEYOND OUR CONTROL WE MAKE NO GUARANTEE, EXPRESSED OR IMPLIED, AS TO THE EFFECTS OF SUCH USE, THE RESULTS TO BE OBTAINED OR THE SAFETY AND TOXICITY OF THE PRODUCT: NOR DO WE ASSUME ANY LIABILITY ARISING OUT OF USE, BY OTHERS, OF THE PRODUCT REFERRED TO HEREIN. THE INFORMATION HEREIN IS NOT TO BE CONSTRUED AS ABSOLUTELY COMPLETE SINCE ADDITIONAL INFORMATION MAY BE NECESSARY OR DESIRABLE WHEN PARTICULAR OR EXCEPTIONAL CONDITIONS OR CIRCUMSTANCES EXIST OR BECAUSE OF APPLICABLE LAWS OR GOVERNMENT REGULATIONS.