Cellulose Insulation with Boric Acid and Ammonium Sulfate

SAFETY DATA SHEET

EFFECTIVE DATE: August 29, 2022

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **Cellulose Insulation with Boric Acid and Ammonium Sulfate**
CHEMICAL NAME/SYNONYM: **Cellulose Insulation with Boric Acid and Ammonium Sulfate**

MANUFACTURER: **InCide® Technologies, Inc.**
ADDRESS: **50 N 41st Ave**
Phoenix, AZ 85009

EMERGENCY PHONE: **(602) 233-0756**
CHEMTREC PHONE: **(800) 424-9300**

RECOMMENDED USE: **Insulation**

SECTION 2: HAZARDS IDENTIFICATION

No classification under OSHA HCS/HazCom 2012 Final Rule.

OTHER HAZARDS WHICH DO NOT RESULT IN CLASSIFICATION: None.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT	CAS NO.	% WT
Cellulose fiber	**65996-91-4**	**86%**
Ammonium sulfate	**7783-20-2**	**9.8%**
Boric acid	**10043-35-3**	**4.2%**

SECTION 4: FIRST AID MEASURES

EYES: Use eye wash fountain or fresh water to cleanse eye. If irritation persists for more than 30 minutes, seek medical attention.

SKIN: No treatment necessary because non-irritating.

INGESTION: Swallowing small quantities (less than one teaspoon) will cause no harm to healthy adults. If larger amounts are swallowed, give two glasses of water to drink and seek medical attention.

INHALATION: No specific treatment is necessary since the product is not likely to be hazardous by inhalation. Prolonged exposure to dust levels in excess of regulatory limits should always be avoided.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: Observation only is required for adult ingestion of a few grams of the product. For ingestion in excess of larger amounts, maintain adequate kidney function and force fluids. Gastric lavage is recommended for symptomatic patients only. Hemodialysis should be reserved for massive acute ingestion or patients with renal failure. Boron analyses of urine or blood are only useful for documenting exposure and should not be used to evaluate severity of poisoning or to guide treatment.

SECTION 5: FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: Use extinguishing media that are appropriate to local circumstances and the surrounding environment.

SPECIAL FIRE FIGHTING PROCEDURES: Not applicable. The product itself is a flame retardant.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None. The product is not flammable, combustible or explosive.

SECTION 6: ACCIDENTAL RELEASE MEASURES

GENERAL: The product contains water-soluble salts that may cause damage to trees or vegetation by root absorption. Avoid contamination of water bodies.

LAND SPILL: Vacuum, shovel or sweep up and place in containers for disposal in accordance with applicable local regulations. Avoid contamination of water bodies during clean up and disposal. No personal protective equipment is needed to clean up land spills.

WATER SPILL: The product will cause localized contamination of surrounding waters depending on the quantity dissolved in these waters. At high concentrations some damage to local vegetation, fish and other aquatic life may be expected. The 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). (Refer to Regulatory Information for additional references and information regarding EPA and California regulations.)

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Good housekeeping procedures should be followed to minimize dust generation and accumulation. Avoid spills. Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES: No special handling precautions are required, but dry, indoor storage is recommended. To maintain package integrity, bags should be handled on a "first-in first-out" basis.

Storage temperature: Ambient
Storage pressure: Atmospheric
Special sensitivity: None known

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

OSHA PEL-TWA: 15 mg/m^3 total dust and 5 mg/m^3 respirable dust

ACGIH TLV-TWA-OEL: 2 mg/m^3 inhalable particles

ACGIH STEL: 6 mg/m^3

Cal OSHA PEL-TWA: 10 mg/m^3 total dust

ENGINEERING CONTROLS AND VENTILATION: Use local exhaust ventilation to keep airborne concentrations of cellulose insulation dust below permissible exposure limits.

RESPIRATORY PROTECTION: Where airborne concentrations are expected to exceed exposure limits, NIOSH/MSHA certified respirators must be used.

EYE PROTECTION: Eye protection according to ANSI Z.87.1 or other national standards may be warranted if environment is excessively dusty.

SKIN PROTECTION: Standard work gloves (cotton, canvas or leather) may be warranted if environment is excessively dusty.

SECTION 8 NOTES: PEL: Permissible Exposure Limit, TLV: Threshold Limit Value, TWA: Time Weighted Average, STE: Short Term Exposure Limit

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Gray fiber

ODOR: Odorless

ODOR THRESHOLD: Not applicable

pH AT 25°C: 7.2 (2.0% solution)

MELTING POINT/ FREEZING POINT: Not applicable

BOILING POINT AND BOILING RANGE: Not applicable

FLASH POINT: Not applicable; non-volatile

EVAPORATION RATE: not applicable; non-volatile

FLAMMABILITY: Non-flammable; used as a flame retardant

UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS: Not applicable; non-flammable

VAPOR PRESSURE: Negligible at 20°C

VAPOR DENSITY: Not applicable

RELATIVE DENSITY: 0.7 compressed

SOLUBILITY IN WATER: Fiber is not soluble; chemical additive is soluble at a rate of 7.46% at 25°C

AUTO-IGNITION TEMPERATURE: Not applicable; not self-heating

DECOMPOSITION TEMPERATURE: Not applicable

VISCOSITY: Not applicable; solid substance

EXPLOSIVE PROPERTIES: Not explosive; does not contain chemical groups associated with explosive properties

OXIDIZING PROPERTIES: Not oxidizing; does not contain chemical groups associated with oxidizing properties

MOLECULAR WEIGHT: Not applicable

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: None known.

STABILITY: The product is stable and does not change under normal storage conditions.

POSSIBILITY OF HAZARDOUS REACTIONS: Reaction with strong reducing agents such as metal hydrides or alkali metals will generate hydrogen gas which could create an explosive hazard.

CONDITIONS TO AVOID: Avoid contact with strong reducing agents by storing according to good industrial practice.

INCOMPATIBLE MATERIALS: Strong reducing agents.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: None.

SECTION 11: TOXICOLOGICAL INFORMATION

ROUTES OF EXPOSURE: Inhalation is the most significant route of exposure in occupational and other settings. Dermal exposure is not usually a concern because product is poorly absorbed through intact skin. Cellulose insulation is not intended for ingestion.

SYMPTOMS RELATED TO THE PHYSICAL, AND CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS: Small amounts (e.g. a teaspoonful) swallowed accidentally are not likely to cause effects; swallowing larger amounts may cause gastrointestinal symptoms.

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 inorganic borate dust. Human epidemiological studies indicate no effect on fertility in occupational populations with chronic exposures to borate dust and indicate no effect to the general population with high exposures to borates in the environment.

ACUTE TOXICITY:

Cellulose:
- **Oral LD_{50} (rat) :** >5,000 mg/kg of body weight
- **Dermal LD_{50} (rabbit) :** >2,000 mg/kg of body weight
- **Inhalation LC_{50} (rat) :** >5.8 mg/L
- **Dermal irritation/corrosivity:** Nonirritating, nonsensitizing
- **Eye irritation:** No information found.

Boric acid:
- **Oral LD_{50} (rat):** 2,550 mg/kg of body weight
- **Dermal LD_{50} (rabbit) :** >2,000 mg/kg of body weight
- **Inhalation LC_{50} (rat) :** >2.01 mg/L
- **Dermal irritation/corrosivity:** Nonirritating, nonsensitizing
- **Eye irritation:** Nonirritating

Ammonium sulfate:
- **Oral LD_{50} (rat) :** >5,000 mg/kg of body weight
- **Dermal LD_{50} (rabbit) :** >2,000 mg/kg of body weight
- **Inhalation LC_{50} (rat) :** >5.8 mg/L
- **Dermal irritation/corrosivity:** Nonirritating, nonsensitizing.
- **Eye irritation:** No information found.

CHRONIC HEALTH HAZARDS: No chronic effects from cellulose, boric acid, or ammonium sulfate were found in the literature. Human epidemiological studies show no increase in pulmonary disease in occupational populations with chronic exposures to inorganic borates and sodium borate dust.

REPRODUCTIVE EFFECTS: No reproductive effects from ammonium sulfate were found in the literature. 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/m^3 (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.

Classification: No classification

CARCINOGENICITY: Cellulose, boric acid, or ammonium sulfate are not listed as known or suspected carcinogen by OSHA, ACGIH, NTP, or IARC.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY (AQUATIC AND TERRESTRIAL, WHERE AVAILABLE):

Cellulose: No information found.

Boron: No information specific to boric acid was found in the literature. The following information is based on other boron compounds and normalized for boron.

LC_{50} (Water flea, *D. magna*): 101.2 mg/L (48-hr)
NOEC (Water flea, *D. magna*): 5.7 mg/L (21-d)
LC_{50} (Rainbow trout, *O. mykiss*): 351.7 mg boron/L (96-hr)
LC_{50} (Bluegill, *L. macrochirus*): 4.6 mg boron/L (24-hr)

Ammonium sulfate:

LC_{50} (Water flea, *D. magna*): 423 mg/L (25-hr)
LC_{50} (Water flea, *D. magna*) : >100 mg/L (96-hr)
LC_{50} (Rainbow trout, *O. mykiss*): 1.56 mg/L (24-hr)
LC_{50} (Channel catfish, *I. punctatus*): 36.7 mg/L (96-hr)

PHYTOTOXICITY: Boron is an essential micronutrient for healthy growth of plants. It can be harmful to boron sensitive plants in higher quantities. Care should be taken to minimize the amount of borate product released to the environment.

PERSISTENCE AND DEGRADABILITY: Biodegradation is not an applicable endpoint since the product is an inorganic substance.

BIOACCUMMULATIVE 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 (based on boric acid).

MOBILITY IN SOIL: The product is soluble in water and is leachable through normal soil. Adsorption to soils or sediments is insignificant.

OTHER EFFECTS: None

SECTION 12 NOTES: The information in this section is based on other borates and is normalized to boron content. Boron is the element in boric acid which is used to characterize borate product ecological effects.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Small quantities of Cellulose Insulation can usually be disposed of at municipal landfill sites**.** No special disposal treatment is required, but refer to state and local regulations for applicable site-specific requirements. Tonnage quantities of Cellulose Insulation are not recommended to be sent to landfills. Such product should, if possible, be re-used for an appropriate application. Product packaging should be recycled where possible. Avoid spillage into water and cover drains.

RCRA HAZARD CLASS: Cellulose insulation is not listed under any section of the Federal Resource Conservation and Recovery Act (RCRA).

CALIFORNIA HAZARDOUS WASTE DESIGNATION: California identifies substances with acute oral, acute dermal, or acute inhalation LD_{50}s less than 2,500, 4,300, or 10,000 mg/kg, respectively as “hazardous wastes." Additionally, the aquatic LC_{50} is less than 500 mg/L, the chemical is considered a “hazardous waste.” Cellulose Insulation is therefore a "hazardous waste" if spilled in California, and should be handled in accordance with applicable state regulations. Refer to Regulatory Information for additional information.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: Cellulose Insulation is not a US Department of Transportation (DOT) Hazardous Material or Hazardous Substance.

OTHER AGENCIES: Cellulose Insulation has no UN Number and is not regulated under international rail, highway, water, or air transport regulations.

SECTION 15: REGULATORY INFORMATION

TSCA NO.: Cellulose Insulation does not appear on the EPA TSCA inventory list.

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

SUPERFUND: CERCLA/SARA. Cellulose Insulation is not listed under CERCLA (the Comprehensive Environmental Response Compensation and Liability Act) or its 1986 amendments, SARA, (the Superfund Amendments and Reauthorization Act), 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.

SAFE DRINKING WATER ACT: Cellulose Insulation 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.
Clean Water Act (Federal Water Pollution Control Act): 33 USC 1251 et seq.

a.) Cellulose Insulation is not itself a discharge covered by any water quality criteria of Section 304 of the CWA, 33USC 1314
b.) It is not on the Section 307 List of Priority Pollutants, 33 USC 1317, 40 CFR 129
c.) It is not on the Section 311 List of Hazardous Substances, 33 USC 1321, 40 CFR 116.

OSHA/CAL OSHA: This SDS document meets the requirements of both OSHA (29 CFR 1910.1200) and Cal OSHA (Title 8 CCR 5194(g)) hazard communication standards. Refer to Exposure Control/Personal Protection for regulatory exposure limits.

IARC: The International Agency for Research on Cancer (of the World Health Organization) does not list or categorize Cellulose Insulation as a carcinogen.

CALIFORNIA PROPOSITION 65: Cellulose Insulation is not listed on any Proposition 65 lists of carcinogens or reproductive toxicants.

SECTION 16: OTHER INFORMATION

OTHER INFORMATION: This SDS was finalized on August 29, 2022 and is compliant with OSHA HCS/HazCom 2012 Final Rule. It replaces the previous SDS finalized on January 01, 2020.

DISCLAIMER: Information presented herein has been compiled from sources considered dependable and is accurate and reliable to the best of our knowledge and belief, but it is not guaranteed to be so. Nothing herein is to be construed as recommending any practice or any product in violation of any law or regulation. It is the user's responsibility 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.