MATERIAL SAFETY DATA SHEET
EFFECTIVE DATE: May 1, 2011

CELL-PAK SUPREME PLUS®

CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name:	CELL-PAK SUPREME PLUS®	**MANUFACTURER:** **Cell-Pak, LLC.**
Chemical Formula:	$(C_{11}H_{15}O_5)$-Na_2SO_4•H_3BO_3 + H_3BO_3	645 McIntire Lane
Chemical Name/Synonyms:	Cellulose Insulation	Decatur, Alabama 35603
Chemical Family:	Cellulose Treated with Inorganic Salts	**EMERGENCY PHONE NUMBERS:**
TSCA Inventory Number:	Not Established	**Cell-Pak (Information) 256-260-2151**
		Cell-Pak (Emergency) 256-260-2151

CELL-PAK SUPREME PLUS® Cellulose Insulation is a registered trademark of Cell-Pak LLC.

COMPOSITION/INFORMATION ON INGREDIENTS OSHA HAZARDS

This product contains on average recycled shredded-paper (83%) with less than 17 percent (%) boric acid (H_3BO_3) CAS No. 10043-35-3 and sodium polyborate (CAS# 183290-63-3). Boric acid and sodium polyborate are the active ingredients in this product and are used as flame retardants. Trace amounts of light weight oil (CAS# 64741-88-4 or 64742-65-0) are added for dust suppression. Additionally, wheat or corn starch (CAS# 9005-25-8) are added in trace amounts for adhesion purposes. Boric acid is hazardous under the OSHA Hazard Communication Standard based on animal chronic toxicity studies.

HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:
CELL-PAK SUPREME PLUS® is a gray, odorless cellulosic fiber insulation material treated with inorganic salts imparting flame retardant properties. The product is not flammable, combustible, or explosive, and it presents no unusual hazard if involved in a fire. CELL-PAK SUPREME PLUS® is considered "relatively harmless" via oral ingestion and "slightly toxic" via dermal exposure (see Toxicological Details section for more information). Care should be taken to minimize the amount of CELL-PAK SUPREME PLUS® released to the environment to avoid ecological effects.

POTENTIAL ECOLOGICAL EFFECTS:
Large amounts of CELL-PAK SUPREME PLUS® can be harmful to boron-sensitive plants and other ecological systems.

POTENTIAL HEALTH EFFECTS:
Routes of Exposure: Inhalation is the most significant route of exposure in occupational and other settings. Dermal exposure is not usually a concern because CELL-PAK SUPREME PLUS® is not absorbed through intact skin.
Inhalation: Occasional mild irritation of nose and throat may occur from inhalation of CELL-PAK SUPREME PLUS® dusts at levels greater than 2 mg/m^3.
Eye Contact: CELL-PAK SUPREME PLUS® is non-irritating to eyes in normal industrial use.
Skin Contact: CELL-PAK SUPREME PLUS® under the Hodge and Sterner Scale[1] of acute toxicology it is consideredto be "slightly toxic" via the dermal route of exposure.
Ingestion: CELL-PAK SUPREME PLUS® is not intended for ingestion. CELL-PAK SUPREME PLUS® is considered "relatively harmless" on the Hodge and Sterner Scale[1] via oral ingestion. Small amounts (e.g. 3 teaspoonfuls or 10 grams) swallowed accidentally are not likely to cause effects; swallowing amounts larger than that may cause gastrointestinal symptoms.
Cancer: CELL-PAK SUPREME PLUS® is not considered a carcinogen.
Reproductive: Long-term, high dose animal ingestion studies of similar inorganic borate chemicals at significantly higher concentrations have demonstrated reproductive effects in male animals. A human study of occupational exposure to borate dust showed no adverse effect to reproduction.
Developmental: High dose animal ingestion studies of similar inorganic borate chemicals at significantly higher concentrations have demonstrated developmental effects in fetuses of pregnant animals, including fetal weight loss.
Target Organs: No target organ has been identified in humans. Multiple high dose animal ingestion studies of similar inorganic borate chemicals at concentrations higher than from typical occupational exposures indicate the testes are the target organs in male animals.
Signs and Symptoms of Exposure: Symptoms of accidental over-exposure to borate products have been associated with ingestion or by absorption through large areas of damaged skin. Exposure via either route, given a sufficient dose, might result in signs and symptoms such as central nervous system effects, kidney effects, nausea, vomiting, and diarrhea, with delayed effects of skin redness and peeling (via the dermal route). Refer to Toxicology Information Section for details on Toxicological Data.

FIRST AID MEASURES

Inhalation: No specific treatment is necessary since CELL-PAK SUPREME PLUS® is not likely to be hazardous by inhalation. Prolonged exposure to dust levels in excess of regulatory limits should always be avoided.
Eye Contact: Use eye wash fountain or fresh water to cleanse eye. If irritation persists for more than 30 minutes, seek medical attention.
Skin Contact: No treatment necessary because non-irritating.
Ingestion: Swallowing 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.
NOTE TO PHYSICIANS: Observation only is required for adult ingestion of a few grams of CELL-PAK SUPREME PLUS®. 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.

FIRE FIGHTING MEASURES

General Hazard: None, because CELL-PAK SUPREME PLUS® is not flammable, combustible or explosive. The product itself is a flame retardant.
Extinguishing Media: Any fire extinguishing media may be used on nearby fires.
Flammability Classification (29 CFR 1910, 1200): Non flammable solid.

ACCIDENTAL RELEASE MEASURES

General: CELL-PAK SUPREME PLUS® contains water-soluble inorganic salts that may cause damage to trees or vegetation by root absorption. (Refer to Ecological information for specific information)
Land Spill: Vacuum, shovel or sweep up CELL-PAK SUPREME PLUS® 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: CELL-PAK SUPREME PLUS® 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.
CELL-PAK SUPREME PLUS® 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 California regulations.)

HANDLING AND STORAGE

Storage Temperature: Ambient
Storage Pressure: Atmospheric
Special Sensitivity: None known
General: No special handling precautions are required, but dry, indoor storage is recommended. To maintain package integrity, bags should be handed on a "first-in first-out" basis. Good housekeeping procedures should be followed to minimize dust generation and accumulation.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use local exhaust ventilation to keep airborne concentrations of CELL-PAK SUPREME PLUS® dust below permissible exposure levels.
Personal Protection: Where airborne concentrations are expected to exceed exposure limits, NIOSH certified dust particulate respirators must be used. Eye goggles and gloves are not required for normal industrial exposures, but may be warranted if environment is excessively dusty.
Occupational Exposure Limits: CELL-PAK SUPREME PLUS® is listed/regulated by OSHA and Cal OSHA as "Particulate Not Otherwise Classified" or "Nuisance Dust". ACGIH has published exposure limits for "Borate Compounds, Inorganic".

OSHA: PEL*	15 mg/m^3 total dust and 5 mg/m^3 respirable dust
ACGIH: TLV**	2 mg/m^3
ACGIH: STEL***	6 mg/m^3
Cal OSHA: PEL*	10 mg/m^3 and 5 mg/m^3 respirable fraction

*PEL Permissible Exposure Limit
**TLV Threshold Limit Value
***STEL Short Term Exposure Limit

PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Gray, odorless fiber	**Boiling Point:**	Not Applicable
Specific Gravity:	0.7 compressed	**Melting Point:**	Not Applicable
Vapor Pressure:	Negligible @ 20°C	**Flash Point:**	Not Applicable
Solubility in Water:	Fiber is not soluble; Chemical additive is soluble at the rate of 4.7% @ 20° C.	**pH:**	7.1 (2.0% solution @ 25°C)
		Viscosity:	Not Applicable

STABILITY AND REACTIVITY

General: CELL-PAK SUPREME PLUS® is a stable product.
Incompatible Materials and Conditions to Avoid: Reaction with strong reducing agents such as metal hydrides or alkali metals will generate hydrogen gas which could create an explosive hazard.
Hazardous Decomposition: None

TOXICOLOGICAL INFORMATION

INGESTION (ACUTE ORAL TOXICITY): "Relatively Harmless" acute oral toxicity the Hodge and Sterner Scale[1] ; LD_{50} of CELL-PAK SUPREME PLUS® in rats is 19,879 mg/kg of body weight.
SKIN (ACUTE DERMAL TOXICITY): "Slightly toxic" acute dermal toxicity the Hodge and Sterner Scale[1]; LD_{50} of CELL-PAK SUPREME PLUS® in rabbits is greater than 2000 mg/kg of body weight. CELL-PAK SUPREME PLUS® is not absorbed through intact skin.
PRIMARY SKIN IRRITATION INDEX: "0" which is considered non-irritating.
CELL-PAK SUPREME PLUS®is non-corrosive

[1] Hodge H.C. and Sterner J.H. Combined tabulation of toxicity classes. Handbook of toxicology, WB Saunders (1956)

EYE: Draize test in rabbits produced mild eye irritation effects. Many years of occupational exposure history reflects no indication of human eye injury from exposure to CELL-PAK SUPREME PLUS®.

NOTE: CELL-PAK SUPREME PLUS® contains on average 15% boric acid with sodium polyborate and 85% inert cellulosic fiber. The boric acid data discussed in this section relates to 100% pure boric acid, borax, or other borates.

INHALATION: Human epidemiological studies show no increase in pulmonary disease in occupational populations with chronic exposures to boric acid dust and sodium borate dust.

CARCINOGENICITY: A Technical Report issued by the National Toxicology Program showed "no evidence of carcinogenicity" from a full 2-year bioassay on boric acid in mice at feed doses of 2500 and 5000 ppm in the diet. No mutagenic activity was observed for boric acid in a recent battery of four short-term mutagenicity assays.

REPRODUCTIVE/DEVELOPMENTAL TOXICITY: Animal studies indicate boric acid reduces or inhibits sperm production, causes testicular atrophy, and, when given to pregnant animals during gestation, may cause developmental changes. These feed studies were conducted under chronic exposure conditions leading to doses many times in excess of those that could occur through inhalation of dust in occupational settings.

Reproductive Toxicity (Fertility): Dietary boric acid levels of 6,700 ppm in chronic feeding studies in rats and dogs produced testicular atrophy, while dogs and rats receiving 2000 ppm did not develop testicular changes ([2] Weir, Fisher, 1972). In chronic feeding studies of mice on diets containing 5000 ppm (550 mg/kg/d) boric acid, testicular atrophy was present while mice fed 2500 ppm (275 mg/kg/d) boric acid showed no significant increase in testicular atrophy ([3] NTP, 1987). In another boric acid chronic study, in mice given 4500 ppm (636mg/kg/d), degeneration of seminiferous tubules was present together with a reduction of germ cells, while at 1000 ppm (152 mg/kg/d) no effect was seen ([4] Fail et al., 1991). In a reproduction study on rats, 2000 ppm of dietary boric acid had no adverse effect on lactation, litter size, weight and appearance ([2] Weir, Fisher, 1972). In a continuous breeding study in mice there was reduction in fertility rates for males receiving 4500 ppm (636 mg/kg/d) boric acid, but not for females receiving 4500 ppm boric acid ([3] Fail et al., 1991)

Developmental Toxicity: Boric acid at dietary levels of 1000 ppm (78 mg/kg/d) administered to pregnant female rats throughout gestation caused a slight reduction in fetal weight, but was considered to be close to the NOAEL. Doses of 2000 ppm (163 mg/kg/d) and above caused fetal malformations and maternal toxicity. In mice the no effect level for fetal weight reduction and maternal toxicity was 1000 ppm (248 mg/kg/d) boric acid. Fetal weight loss was noted at dietary boric acid levels of 2000 ppm (452 mg/kg/d) and above. Malformations (ageneses or shortening of the thirteenth rib) were seen at 4000 ppm (1003 mg/kg/d), ([5] Heindel et al., 1992).

ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

Phytotoxicity: Although boron is an essential micronutrient for healthy growth of boron-sensitive plants, it can be harmful to plants in higher quantities. Plants and trees can easily be exposed by root absorption to toxic levels of boron in the form of water-soluble borate leached into nearby soil or waters. Care should be taken to minimize the amount of borate product released to the environment.

Fish Toxicity: Boron naturally occurs in sea water at an average concentration of 5 mg B/liter. In laboratory studies the acute toxicity (96-hr LC_{50}) for under-yearling Coho salmon (OPest Controlhorhynchus kisutch) in sea water was determined as 40 mg B/L (added as sodium metaborate). Boron concentrations in fresh surface waters are generally less than 1 mg B/L. Laboratory studies on the toxicity of freshwater fish were determined using early life (embryo-larval) stages in natural water and Boric Acid as a test substance. The results were:

Rainbow Trout (S. gairdneri
- 24-day LC_{50} = 150. 0 mb B/L
- 36-day NOEC-LOEC = 0. 75-1 mg B/L

Goldfish (Carassius auratus
- 7-day NOEC-LOEC = 26.50 mg B/L
- 3-day LC_{50} = 178 mg B/L

Invertebrate Toxicity: The acute toxicity (48-hour LC_{50}) to Daphnids (Daphnia magna Straus) in natural water is reported to be 133 mg B/L (added as Boric Acid). Estimated chronic toxicity (21-day NOEC-LOEQ) values of 6-13 mg B/L (added as Boric Acid) have also been reported.

ENVIRONMENTAL FATE DATA:

Persistence/Degradation: Boron is naturally occurring and ubiquitous in the environment. Boric acid decomposes in the environment to natural borate.

Soil Mobility: The boric acid additive in CELL-PAK SUPREME PLUS® is soluble in water and is leachable through normal soil.

NOTE: Boron (B) is the element in CELL-PAK SUPREME PLUS® which is used to characterize borate ecological effects. To convert CELL-PAK SUPREME PLUS® data to Boron (B), multiply by 0.0235.

DISPOSAL CONSIDERATIONS

Disposal Guidance: Small quantities of CELL-PAK SUPREME PLUS® 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 product are not recommended to be sent to landfills. Such product should, if possible, be re-used for an appropriate application.

RCRA (40 CFR 261): CELL-PAK SUPREME PLUS® is not listed under any sections of the Federal Resource Conservation and Recovery Act (RCRA).

[1] Hodge H.C. and Sterner J.H. Combined tabulation of toxicity classes. Handbook of toxicology, WB Saunders (1956)
[2] (Weir, R.J. and Fisher, R.S., Toxicol. Appl. Pharmacol., 23:351-364 (1974))
[3] (National Toxicology Program (NTP)-Technical Report Series No. TR324, NIH Publication NO. 88-2580 (1987), PB88-213475/XAB)
[4] (Fail et al., Fund. Appl. Toxicol. 17, 225-239 (1991))
[5] (Heindel et al., Fund Appl. Toxicol. 18, 266-277 (1992))

TRANSPORT INFORMATION

DOT Hazardous Material Classification: CELL-PAK SUPREME PLUS® is not a U.S. Department of Transportation (DOT) Hazardous Material.

DOT Hazardous Substance Classification: CELL-PAK SUPREME PLUS® is not a DOT Hazardous Substance.

International Transportation: CELL-PAK SUPREME PLUS® has no U.N. Number, and is not regulated under international rail, highway, water, or air transport regulations.

REGULATORY INFORMATION

TSCA No.: CELL-PAK SUPREME PLUS® does not appear on the EPA TSCA inventory list. Boric Acid appears on the EPA TSCA inventory list under the CAS No. 10043-35-3.

RCRA: CELL-PAK SUPREME PLUS® 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. CELL-PAK SUPREME PLUS® 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: CELL-PAK SUPREME PLUS® 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.) CELL-PAK SUPREME PLUS® 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 MSDS 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 CELL-PAK SUPREME PLUS® as a carcinogen.

NTPAnnual Report on Carcinogens: CELL-PAK SUPREME PLUS® is not listed.

OSHA Carcinogen: CELL-PAK SUPREME PLUS® is not listed.

California Proposition 65: CELL-PAK SUPREME PLUS® is not listed on any Proposition 65 lists of carcinogens or reproductive toxicants.

OTHER INFORMATION

National Fire Protection Association (NFPA) Classification:
Health - 0, Flammability - 0, Reactivity 0*

Hazardous Materials Information Systems (HMIS):
Red: (Flammability) - 0, Yellow: (Reactivity) - 0, Blue: (Acute Health) - I*

*Chronic Effects

Replaces all previous MSDS for CELL-PAK SUPREME PLUS®

For more information about Cell-Pak LLC's complete product line go to www.cellpak.com.