



MATERIAL SAFETY DATA SHEET

Effective March 16, 2010

Supersedes March 30, 2007



Section 1 – Chemical Product and Company Information

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|----------------------------|--|-------------------------|--|
| PRODUCT IDENTIFIER: | Cellulose Fibre Insulation (spray-applied) | PRODUCT NAME: | K-13™ Insulation |
| Synonyms: | CFI, cellulose insulation | MANUFACTURER: | Can-Cell Industries Inc. 14735-124 Avenue Edmonton, Alberta, T5L 3B2 |
| Description: | paper fibres treated with fire retardants | Emergency Phone: | 1-800-661-5031 |
| Product Type: | spray-applied insulation (thermal / acoustical) | | |

Section 2 – Composition / Information on Ingredients

| <u>Component</u> | <u>CAS Number</u> | <u>Percent by Weight</u> | <u>Exposure Limits</u> |
|--|-------------------|--------------------------|--|
| Cellulose fibres (recycled paperstock) | #65996-61-4 | Not more than 81% | PEL/TWA = 15 mg/m ³ total dust (PNOC) PEL/TWA = 5 mg/m ³ respirable fraction TLV/TWA = 10 mg/m ³ inhalable (PNOC) TLV/TWA = 3 mg/m ³ respirable |
| Boric acid (orthoboric acid) H ₃ BO ₃ | #10043-35-3 | Not more than 17% | TLV/TWA = 10 mg/m ³ inhalable (PNOC) |
| Sodium tetraborate pentahydrate Na ₂ B ₄ O ₇ · 5H ₂ O | #12179-04-3 | Not more than 3% | PEL/TWA = 10 mg/m ³ total dust (PNOC) TLV/TWA = 1 mg/m ³ inhalable (PNOC) |
| Ultramarine blue (pigment) (CI Pigment Blue 29) | #57455-37-5 | ≤ 0.02% (white only) | PEL/TWA = 15 mg/m ³ total dust (PNOC) TLV/TWA = 10 mg/m ³ inhalable (PNOC) |

Section 3 – Hazard Identification

Emergency Overview

Avoid contact with extreme heat sources and open flame – may emit carbon monoxide and other toxic decomposition products when burned. Although treated to be fire resistant, service temperature should not exceed 90°C continuously. K-13™ Insulation presents no unusual hazard if involved in a fire.

Potential Health Effects

Inhalation is the most significant route of exposure in occupational and other settings. Mild irritation of the respiratory tract is possible. The National Toxicology Program has classified CFI products like K-13™ a “nuisance dust” (PNOC, Particulate Not Otherwise Classified) – respiratory protection is recommended during installation or other handling of the product. Chemically sensitive individuals should avoid dust exposure during installation periods.

K-13™ Insulation is non-irritating to eyes and intact skin under normal industrial conditions. Even though K-13™ exhibits relatively low acute toxicity, it is not intended for consumption. Ingestion of a small amount is not likely to cause harm – larger quantities can cause gastrointestinal symptoms such as nausea, vomiting and diarrhea.

K-13™ Insulation (fibres and additives) is not considered a carcinogen by any authority.

Animal studies suggest that high-level exposure to borates can produce reproductive effects in male animals. Similar studies showed developmental effects in fetuses of pregnant animals. Human studies of occupational exposure to borates showed no adverse effect to reproduction. No target organ has been identified in humans.

Section 4 – First Aid Measures

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| Inhalation: | If irritation or difficulty in breathing occurs, remove person to fresh air. If irritation persists, seek medical attention. |
| Skin Contact: | K-13™ is non-irritating to intact skin. If broken skin is exposed, wash with soap and plenty of water. If irritation persists, seek medical attention. |
| Eye Contact: | For severe dust exposure, flush eyes with warm water for a minimum of 15 minutes. If irritation persists, seek medical attention. |
| Ingestion: | Although ingestion of significant amounts is unlikely, symptoms can include diarrhea, nausea and vomiting. Give two glasses of water and seek medical attention. |

Note to Physicians: Severe exposure to dust may produce symptoms in sensitive persons or those with pre-existing respiratory conditions.



Section 5 – Fire-Fighting Measures

Although K-13™ Insulation is treated to be fire resistant, thermal decomposition can occur when in prolonged contact with extreme temperatures and open flame.

Suitable Extinguishing Media: Any available media (Type A fire condition)
Unsuitable Extinguishing Media: None
Special Hazards in Fire: None (fire resistant)
Required special PPE for Fire Fighters: Standard protective equipment

Section 6 – Accidental Release Measures

Personal Precautions: Nuisance dust. Avoid prolonged exposure to small children, pets and plants.
Environmental Precautions: K-13™ contains water-soluble inorganic salts that can cause damage to vegetation via root absorption when exposed in sufficient quantity. Avoid contamination of bodies of water during cleanup and disposal – additives can be hazardous to aquatic life (see Section 12).
Methods for Cleaning: Sweep, shovel and/or vacuum up K-13™ and place in containers for disposal in accordance with applicable regulations.

Section 7 – Handling & Storage

Handling: No special handling is required. Handling on a “first in, first out” basis is recommended to maintain package integrity.
Storage: Dry, indoor storage is recommended (ambient temperature and pressure).

Section 8 – Exposure Controls / Personal Protection

Engineering Measures: No specific controls needed. Use good housekeeping practices to minimize potential dust generation and accumulation.
Control Parameters: Nuisance dust.
Personal Protective Equipment: Use NIOSH-approved N95 particle mask (e.g. 3M 8210) when dust levels exceed exposure limits.
Eye Protection: Generally not required – goggles may be warranted if environment is excessively dusty.
Hand Protection: Generally not required – gloves are recommended if skin is broken or sensitive.
Hygiene Measures: Standard hygienic practices are recommended.

Section 9 – Physical and Chemical Properties

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| Physical State: | Solid | Vapour Pressure: | N/A |
| Appearance and Odour: | Grey, brown or white fibrous mass, low odour | Vapour Density: | N/A |
| Odour Threshold: | N/A | Evaporation Rate: | N/A |
| Specific Gravity: | <1 | pH: | 8.0 – 8.5 |
| Boiling Point: | N/A | Coefficient of water / oil | |
| Melting/Freezing Point: | N/A | Distribution: | Not established |
| Water Solubility: | paper fibre negligible, additives slight/moderate | | |

Section 10 – Stability and Reactivity

Stability of Product: K-13™ Insulation is a stable product.
Conditions / Materials to Avoid: Strong reducing agents and strong oxidizing agents.
Hazardous Decomposition Products: None.
Hazardous Polymerization: Will not occur.

Section 11 – Toxicology Information

Acute toxicity: K-13™ is considered to exhibit relatively low acute toxicity.
Local effects: K-13™ is non-irritating to eyes and intact skin under normal industrial conditions. Although K-13™ is not intended for consumption, ingestion of a small amount is not likely to cause harm – larger quantities can cause gastrointestinal symptoms such as nausea, vomiting and diarrhea.
 K-13™ Insulation (fibres and additives) is not considered a carcinogen by any authority. Mutagenic activity seen in microorganisms (E. Coli) at extreme levels of 17000 ppm/24H of boric acid exposure.



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Animal studies suggest that high-level exposure to borates can produce reproductive effects in male animals. Similar studies showed developmental effects in fetuses of pregnant animals. All animal doses administered were many times in excess of those to which humans would normally be exposed.

Human studies of occupational exposure to borates showed no adverse effect to reproduction. No target organ has been identified in humans.

Excessive exposure may affect human health as follows:

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| Skin contact: | Non-irritant | LD _{Lo} (boric acid, human): | 1200 mg/kg. |
| Eye contact: | possible irritant | positive Draize test in rabbits, no irritation reported for humans | |
| Ingestion: | (unlikely) | LD _{Lo} (boric acid, human): | 429 mg/kg. |
| Inhalation: | possible irritant | LC _{Lo} (boric acid, rat): | 28 mg/m ³ /4H |

Human studies show no increase in pulmonary disease in occupational populations with chronic exposures to borate dust.

Section 12 – Ecological Information

Ecotoxicity: Although an essential micronutrient for many plants, boron (borates) can be harmful in higher quantities. Plants and trees can receive toxic levels via root absorption of soluble borates leached into nearby soil or waters. Care should be taken to minimize the amount of borate chemicals released into the environment.

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| Fish Toxicity | (Coho salmon): | 40 mg B / litre | (LC ₅₀ –96H, sodium metaborate) |
| | (Rainbow trout): | 150 mg B / litre | (LC ₅₀ –24D, boric acid) |
| | (Carassius goldfish): | 178 mg B / litre | (LC ₅₀ –72H, boric acid) |
| Invertebrates | (Daphnids): | 133 mg B / litre | (LC ₅₀ –48H, boric acid) |

Environmental Fate: Boron compounds are naturally occurring and ubiquitous in the environment. Boric acid decomposes in alkaline soil to form natural borates. The borates in K-13™ are soluble in water and can be leached through normal soil.

Section 13 – Disposal Considerations

K-13™ may be disposed of as a non-hazardous waste in accordance with applicable regulations.

Section 14 – Transport Information

K-13™ is not classified as a hazardous material for transport.

Section 15 – Regulatory Information

K-13™ Insulation has been classified in accordance with the hazard criteria of the Controlled Products Regulations and this MSDS contains all the information required by the Controlled Products Regulations.

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.

Sources of Key Data Used to Compile MSDS:

- American Conference of Government Industrial Hygienists (www.acgih.org)
- Guide to Occupational Exposure Values, TLVs and other Occupational Exposure Values
- Canadian Centre for Occupational Health and Safety (www.ccohs.ca) - Hazardous Substances Data Bank
- Health Canada, WHMIS website / Product Safety Bureau
- National Institute of Occupational Safety and Health (www.niosh.org) – Registry of Toxic Effects of Chemical Substances
- US Environmental Protection Agency, website – Integrated Risk Information
- US Public Health Service, Agency for Toxic Substances and Disease Registry – Toxicological Profiles

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