**PFSI, a Division of Demilec Inc.**

**440 CONESTOGO ROAD**

**WATERLOO, ONTARIO N2L 4E2**

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**PRODUCT: POLARFOAM™ PF-7211-0+** 

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| **MATERIAL SAFETY DATA SHEET** |
| **SECTION 1: PRODUCT & COMPANY INFORMATION** |
| **MANUFACTURER OF CHEMICAL COMPONENTS**DEMILEC Inc. Distr. PFSI, a Div. Of Demilec Inc.870 Curé Boivin 440 Conestogo RoadBoisbriand, QC Waterloo, Ontario N2L 4E2Canada Ph. 519 884-0688J7G 2A7 Fax : 519 884-7300Phone 1-866-437-0223Fax (450) 437-2338E-mail: demilec@demilec.com pfsi@on.aibn.com | **PRODUCT**Trade name: PF7211-0+ Resin COMPONENTChemical name: Mix of polyols, blowing agents , catalysts and others additives.Chemical family: Rigid Polyurethane FoamProduct use: Component B of a spray  Polyurethane System |
| **EMERGENCY TELEPHONE**CANUTEC (613) 996-6666 |

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| **SECTION 2: HAZARDS IDENTIFICATION** |
| Physical State / Odor | Liquid **/** Ester |
| **Emergency Overview / Warning** |
| Physical / Chemical Hazards | Acute Health Hazard / Chronic Health Hazard / Fire Hazard: Toxic vapors may be released during burning or thermal decomposition. |
| Routes of Entry | Eye contact, skin contact, inhalation, ingestion. |
| Eye Contact | Product liquids, aerosols or vapors are irritating. Vapors may cause a transient condition known as glaucopsia, resulting in blurred vision and appearance of halos around bright objects. |
| Skin Contact | May cause irritation and dermatitis. |
| Ingestion | May cause irritation to throat, esophagus and stomach (nausea, abdominal pains, vomiting and diarrhea). May cause liver and kidney damage. |
| Inhalation | May cause headaches, dizziness, drowsiness and other central nervous system effects. |

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| **SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS** |
| INGREDIENTS | CAS # | % |
| Polyol blend | Trade Secret | 30 – 60  |
| Tris-iso-chloropropyl phosphate | 13674-84-5 | 10 – 30  |
| Blowing Agent Blend | Trade Secret | 10 – 30 |
| Amine Catalyst Blend | Trade Secret | 1 – 5  |

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| **SECTION 4: FIRST AID MEASURES** |
| Eye Contact | Immediately flush eyes with running water for a minimum of 15 minutes. Hold eyelids open during flushing. Obtain medical attention immediately. |
| Skin Contact | In case of contact, immediately remove contaminated clothing and shoes. Immediately flush skin with plenty of soap and cold water. Do not use hot water. Wash contaminated clothing and shoes thoroughly before reuse. For severe exposures, immediately get under safety shower and start rinsing. If the irritation develops, obtain medical attention. |
| Inhalation | Move exposed person to fresh air. Keep person warm and at rest. If not breathing, breathing irregularly, or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Obtain medical attention if adverse health effects persist. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |
| Ingestion | Wash out mouth with water. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water (250 ml). Stop if the exposed person feels sick, as vomiting may be dangerous. Obtain medical attention if symptoms occur. **DO NOT induce vomiting** unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter lungs. Get immediate medical attention if adverse health effects persist or are severe. **Never give anything by mouth to an unconscious person.** If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as collar, tie, belt or waistband. |
| Protection of First-aiders | No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. |
| Notes to Physician | Following severe exposure the patient should be kept under medical review for at least 48 hours.  |

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| **SECTION 5: FIRE FIGHTING MEASURES** |
| Flash Point | > 93ºC (200ºF) |
| Auto-Ignition Temperature | Not Established |
| Upper Flammable Limit (% vol.) | Not Established |
| Lower Flammable Limit (% vol.) | Not Established |
| Suitable Extinguishing Media | Dry chemical, carbon dioxide (CO2), foam, water spray for large fires. |
| Hazardous Products of Thermal Decomposition | Combustion products may include carbon monoxide, carbon dioxide, nitrogen oxides, halogenated compounds, traces of ammonia vapors, aldehydes and ketones, low molecular weight organic products. |
| Special Fire Fighting Procedures | Firefighter should be equipped with self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode to protect against potentially toxic and irritating fumes generated by thermal decomposition or combustion during a fire. They should wear appropriate protective equipment such as PVC boots, gloves, safety helmet and protective clothing. Material supports combustion. |

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| **SECTION 6: ACCIDENTAL RELEASE MEASURES** |
| **Spill and Leak Procedures** |
| Personal Precautions | Avoid breathing vapors or mist. Provide adequate ventilation. Use suitable protective equipment. |
| Environmental Precautions | Avoid spreading of spilled material, runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution.  |
| Methods for Cleaning-up | Spread sawdust absorbent over the spill area and leave to react for at least 30 minutes in order to absorb as much of the remaining product as possible. Shovel into suitable metal containers for waste disposal. Contaminated absorbent material may pose the same hazard as the spilt product. Dispose via a licensed waste disposal contractor. The spill area should then be washed down with soap and warm water to dilute and remove remaining traces of material. Ventilate area to remove the remaining vapors. |

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| **SECTION 7: HANDLING & STORAGE** |
| Storage Temperature | 15 – 30oC (59 – 86oF) (minimum – maximum) |
| Storage Life | 6 months |
| Handling | Avoid breathing vapors and contact with eyes or skin. Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. |
| Storage | Store in tightly closed containers in a cool, dry and ventilated place away from incompatible materials, food and drink. Product is hygroscopic, keep it away from moisture. Store away from ignition sources. Protect containers against physical damage. Smoking in area is prohibited. |
| Precautions | If contamination with isocyanates is suspected, do not reseal containers. Employee education and training in safe handling of this product are required. |
| Packaging Containers | Original Container. |

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| **SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION** |
| **Exposure Limit Values** |
| For Product | Not evaluated |
| **For Ingredients** |
| Ingredients | WEEL (AIHA) (TWA) – 8 hr | OSHA PEL (TWA) – 8 hr |
| Polyol blend | N/A | N/A |
| Tris-iso-chloropropyl phosphate | Not Listed | Not Listed |
| Blowing Agent Blend | 1000 ppm | Not Listed |
| Amine Catalyst Blend | N/A | N/A |
| Eye Protection | Eye protection is required when directly handling liquid product. Use chemical goggles and face shields or full-faced air-supplied respirator. Persons who work with this product should not wear contact lenses. |
| Skin Protection | Use long-sleeves protective clothing impervious to chemicals, boots and chemical-resistant gloves such as Nitrile/butadiene rubber (“nitrile” or “NBR”), Butyl rubber, Polyvinyl chloride (“PVC” or “vinyl”), Polychloroprene (Neoprene\*). Protective gloves should be worn when handling freshly made polyurethane products to avoid contact with trace residual materials that may be hazardous in contact with skin. Wash hands, forearms and face thoroughly after handling chemical products, before eating, drinking, smoking and using the lavatory and at the end of the working period. |
| Respiratory Protection | An air-supplied respirator should be worn during applications and when the product is being heated or in environments of high concentrations well above TLV. |
| Environmental Exposure Controls / Ventilation Requirements | Local exhaust should be used to maintain a fresh supply of air. **Open-air well ventilated foam spraying area:** Use air-purifying respirator and eye protection goggles, chemical resistant gloves and long-sleeved protective clothing. Be sure to establish a safety zone to keep out nonessential personnel. Protect people, cars, etc., against airborne overspray. **Spraying foam in enclosed areas:** Use full-face air-supplied respirator, chemical resistant gloves and long-sleeved protective clothing. Make sure that others do not enter the area until residual vapors have been vented away. **On-line foam processing:** Permanent ventilation equipment is necessary for on-line processing. Efficiency of this equipment must be checked regularly, especially in foaming operations where fans, duct and filters can become blocked with over-processed foam. Relevant operators must use air-purifying respirator, chemical protective goggles and face shields, chemical-resistant gloves and long sleeved coveralls. |
| Additional Protective Measures | Safety showers and eye wash stations should be easily accessible to the work area. |

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| **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES** |
| Appearance  | Liquid |
| Odor | Ester odor |
| Viscosity @ 25ºC (77ºF), cps | 150 – 250 |
| Specific Gravity @ 25ºC (77ºF) | 1.20 – 1.24 |
| Flash Point | > 93ºC (200ºF) |
| Auto-Ignition Temperature | Not established |
| Boiling Point | Not established |
| Freezing / Melting Point | Not Established |
| Vapor Pressure  | 9.6 PSIg @ 25ºC (77ºF), Static. |
| Vapor Density (Air = 1) | Not available |
| Solubility in Water | Moderate |

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| **SECTION 10: STABILITY AND REACTIVITY** |
| Stability | This product is considered stable under normal and anticipated storage and handling conditions. |
| Conditions to Avoid | Avoid exposure to moisture and high temperatures to protect product quality. |
| Materials to Avoid | Strong oxidizing materials, strong acids and alkali or alkaline earth metals (aluminum, zinc, beryllium and copper). Avoid unintended contact with isocyanates. |
| Hazardous Polymerization | Will not occur. |
| Hazardous Products of Decomposition | Combustion products may include carbon monoxide, carbon dioxide, nitrogen oxides, halogenated compounds, traces of ammonia vapors, aldehydes and ketones, low molecular weight organic products. |
| Decomposition Temperature | Not Established  |

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| **SECTION 11: TOXICOLOGICAL INFORMATION** |
|  | Acute Oral Toxicity, LD50 (Rat) | Acute Inhalation Toxicity, LC50(Rat) | Acute Dermal Toxicity, LD50 (Rabbit) | Repeated Dose Toxicity(Rat) |
| Polyol blend | 1370 mg/kg | N/A | 12 800 mg/kg | N/A |
| Tris-iso-chloropropyl phosphate | < 2000 mg/kg | > 4.6 mg/l aerosol (4 hrs) | > 2000 mg/kg(24 hrs) | 90 Days, oral: NOAEL: 36 mg/kg |
| Blowing Agent Blend | >2000 mg/kg  | > 10 000 ppm (4 hrs) | N/A | N/A |
| Amine Catalyst Blend | 1630 mg/kg | 290 ppm(6 hrs) | 280 mg/kg | 14 days, inhalation: 12 ppm |
| \*Tertiary Amine: can cause severe eye and skin irritation; prolonged contact may result in chemical burns and permanent damage of liver, stomach, lungs. |
| **Potential Acute Health Effects** |
| Eye Contact | Product liquids, aerosols or vapors are irritating. Vapors may cause a transient condition known as glaucopsia, resulting in blurred vision and appearance of halos around bright objects. |
| Skin Contact | May cause irritation and dermatitis. |
| Ingestion | May cause irritation to throat, esophagus and stomach (nausea, abdominal pains, vomiting and diarrhea). |
| Inhalation | May cause headaches, dizziness, anesthesia, drowsiness and other central nervous system effects. |
| **Potential Chronic Health Effects** |
| Sensitization | Not known or reported |
| Carcinogenic Effects | The components of this product are not listed. |
| Mutagenic Effects | No known significant effects or critical hazards. |
| Reproductive Effects | No known significant effects or critical hazards. |
| Developmental Effects | No known significant effects or critical hazards. |

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| **SECTION 12: ECOLOGICAL INFORMATION** |
| Ecological testing has not been conducted for this product. Available toxicological data for individual ingredients are summarized below. |
| **Aquatic Toxicity Data For Components Toxicity** |
| Polyol blend | N/A |
| Tris-iso-chloropropyl phosphate | LC50: 51 mg/l (96 hrs) (fish: fathead minnow); 180 mg/l (96 hrs) (fish: bluegill sunfish);LC50: 131 mg/l (96 hrs) (Daphnia magna) |
| Blowing Agent Blend | LC50: > 200 mg/l (96 hrs) (fish: Brachydanio rerio); EC50: > 200 mg/l (48 hrs) (Daphnia);IC50: 114 mg/l (75 hrs) (Algen) |
| Amine Catalyst Blend | LC50 (96 hrs): 220 mg/l (golden orfe); EC50 (48 hrs): 76 mg/l (Daphnia magna) |

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| **SECTION 13: DISPOSAL CONSIDERATION** |
| Waste Disposal Method | The generation of waste should be avoided or minimized whenever possible. Waste must be disposed of in compliance with federal, state or local environmental control regulations. Dispose of surplus and non-recyclable products via licensed waste disposal contractor. Incineration is the preferred method. If incinerated, toxic and corrosive combustion gases must be properly handled. |
| Empty Container Precautions | Empty containers retain product residue (liquid and / or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. |
| Demilec Inc. has no control over the management practices or manufacturing processes of parties handling or using this material. The information presented here pertains only to the product as shipped in its original condition as described in MSDS Section 3 (Ingredients). |

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| **SECTION 14: TRANSPORTATION INFORMATION** |
| Technical Shipping Name | PF7211-0+ B-SIDE COMPONENT |
| Land Transport / DOT Classification | Non-regulated |
| Sea Transport / IMDG Classification | Non-regulated |
| Air Transport / ICAO / IATA Classification | Aviation regulated liquid, n.o.s (contains Hydrofluorocarbon)UN 3334 / Hazard Class or Division: 9 / Packaging Group IIIHazardous Label: Miscellaneous |
| TDG Classification | Non-regulated |
| Emergency Telephone Number |  CANUTEC (613) 996-6666 |

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| **SECTION 15: REGULATORY INFORMATION** |
| **Canada** |
| WHMIS | Class D-2B Material causing other toxic effects (toxic) |
| CEPA (DSL) | All components are listed. |
| **U.S. Federal Regulations** |
| OSHA Hazcom Standard Rating | This material is classified hazardous under OSHA Hazard Communication Standard (29 CFR 1910.1200) |
| HSC Classification | Irritant |
| U.S. Toxic Substances Control Act / TSCA | All ingredients are listed on the TSCA Inventory |
| U.S. EPA CERCLA Hazardous Substances (40CFR 302) | None |
| SARA Section 311/312 Hazard Categories | Acute Health Hazard; Chronic Health Hazard; Fire Hazard |
| U.S. EPA EPCRA SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A) | None  |
| U.S. EPA EPCRA SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required | None |
| U.S. EPA RCRA Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40CFR 261) | If discarded in its purchased form, this product will not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24) |
| State Regulations | Check individual state requirements. |

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| **SECTION 16: OTHER INFORMATION** |
| HMIS Rating 0-Minimal; 1- Slight; 2- Moderate; 3- Serious; 4- Severe;\* - Chronic Health Hazard | **Health** | **2** |
| **Fire Hazard** | **1** |
| **Reactivity** | **0** |
| NFPA Rating 0- Insignificant; 1- Slight; 2- Moderate; 3- High; 4- Extreme | Health Hazard: 2Flammability Hazard: 1Instability Hazard: 0 |
| This product does not contain nor is it manufactured with ozone depleting substances. |
| ***Notice:****The information herein is presented in good faith and believed to be accurate as of the effective date shown bellow. However, no warranty expressed or implied is given. Regulatory requirements are subject to change and may differ from one location to another; it is user’s responsibility to ensure that its activities comply with country, provincial and local laws.**This product may present hazards and should be used with caution. While certain hazards are described in this publication, no guarantee is made that these are only hazards that exist. Hazards, toxicity and behavior of the products may differ when used with other materials and are dependent upon manufacturing circumstances or other processes. Such hazards, toxicity and behavior should be determined by the user and made known to handlers, processors and end users.* |
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