

Revised 5/5/2000

# Material Safety Data Sheet

## ThermaDry® Insulating Drainage Panels

The **THERMADRY®** is a composite of **STYROFOAM®** RM brand extruded polystyrene foam thermal insulation with an attached spunbonded geotextile filtration fabric. We submit this MSDS as follows.

### 1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

**COMPANY:** T. CLEAR CORPORATION, # 800-544-7398

**PRODUCT:** THERMADRY® INSULATING DRAINAGE PANELS

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

**Polystyrene foam** 83.5-88.5%

**Polystyrene foam is composed of:**

**Polystyrene** CAS# 009003-53-6 84.0-93.3%

**Ethyl chloride** CAS# 000075-00-3 0-4.0%

**Chlorodifluoroethane** CAS# 000075-68-3 6-10%

**Hexabromocyclododecane** CAS# 025637-99-4 0.7-2.0%

**Polyester fabric** 10-14%

**Styrene butadiene rubber adhesive** 1.5-2.5%

### 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

**Color:** Blue

**Appearance:** Rigid board

**Odor:** None. Toxic fumes are released in fire situations.

**POTENTIAL HEALTH EFFECTS** (See Section 11 for toxicological data.)

**EYE:** Solid or dust may cause irritation or corneal injury due to mechanical action.

**SKIN:** Mechanical injury only. Product is essentially nonirritating to skin. Skin absorption is unlikely due to physical properties.

**INGESTION:** Ingestion is unlikely due to physical state. Physical injury can result from eating. May cause choking if swallowed.

**INHALATION:** Dust may cause irritation to upper respiratory tract.

Excessive exposure to high concentrations of the ethylchloride and chlorodifluoroethane (blowing agents) may cause central nervous system depression, anesthetic effects and irregular heartbeats (cardiac sensitization). In animals, excessive exposure to chlorodifluoroethane has caused low blood pressure, respiratory stimulation and tightness in the chest (bronchoconstriction). Concentrations of the above blowing agent anticipated, incidental to proper handling, are expected to be below those which cause the acute inhalation effects listed above, as well as below the OSHA PEL and DOW Industrial Hygiene Guide.

**SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:** Repeated exposures to dusts of this material are not anticipated to result in systemic toxicity or permanent lung injury; however, excessive exposures may cause less severe respiratory effects. Hexabromocyclododecane (HBCD) may increase tissue levels of bromine.

**CANCER INFORMATION:** Neither polystyrene foam dust, nor chlorodifluoroethane caused cancer in long-term animal studies. Uterine tumors seen in female mice given high doses of ethyl chloride for their life times are believed to be unique to female mice. Such tumors did not occur in rats similarly exposed. These results are not believed to be relevant to humans.

**TARATOLOGY (BIRTH DEFECTS):** No birth defects were seen in animal studies with ethyl chloride or chlorodifluoroethane.

#### 4. FIRST AID

**EYE:** Flush eyes with plenty of water; mechanical effects only.

**SKIN:** Wash off in flowing water or shower.

**INGESTION:** No adverse effects anticipated by this route of exposure incidental to proper industrial handling.

**INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

**NOTE TO PHYSICIAN:** Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs unless absolutely necessary. There is no specific antidote, administer supportive care. Treatment may be based on judgment of the physician in response to reactions of the patient.

#### 5. FIRE FIGHTING MEASURES

**Flammable Properties:**

**FLASH POINT:** Foam portion: 670°F, 354°C Flash Ignition Temperature

**METHOD USED:** ASTM D1929 Proc. B

**Flammability Limits:** LFL: Not applicable. UFL: Not applicable.

**Hazardous Combustion Products:** Hazardous combustion products may include and are not limited to carbon dioxide and carbon monoxide. Studies have found that products of combustion of this polystyrene foam insulation are no more acutely toxic than the products of combustion of other common building materials such as wood.

**Extinguishing Media:** Water fog, carbon dioxide, and dry chemical.

**Fire Fighting Instructions:** This polystyrene foam plastic product is combustible. This product contains a flame-retardant additive to inhibit accidental ignition from small fire sources. However, once ignited, this product will burn, emitting a dense black smoke. Highly toxic fumes are released in fire situations. During shipping, storage, and use, this product must be protected from flame or other high heat sources. During certain fabrication operations such as cutting and grinding, blowing agents contained in the foam, and dust, may be released. Accumulation of blowing agents or dust in air could present flammability and explosion concerns. Provide adequate ventilation, and appropriate dust handling systems where needed. This product should not be shipped, stored or used in virtually airtight spaces to prevent the build-up of combustible vapors.

**Protective Equipment for Fire Fighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves).

**6. ACCIDENTAL RELEASE MEASURES** (See Section 15 for Regulatory Information)

**Protect The Environment:** Firewater runoff may be toxic.

**Cleanup:** Pick up, or if dust or in small pieces, sweep up and place in suitable container for disposal.

**7. HANDLING AND STORAGE**

**Handling:** Mechanical handling equipment can cause formation of dusts. Maintain good housekeeping techniques. Layers of flammable dusts should not be permitted to accumulate.

**Storage:** Flammable vapors may accumulate in some storage situations. Storage, use and handling areas should be 'No Smoking' areas. Limited industrial hygiene measurements of ethyl chloride in ventilated warehouses and production facilities indicate that ethyl chloride present in the air is below the current 150 ppm IHG for ethyl chloride.

Gas fired recirculating air furnaces or heaters, gas water heaters, etc. drawing air from areas where there may be a presence of ethyl chloride and chlorodifluoroethane gases from storage or fabrication of extruded polystyrene foam can be subjected to rust and corrosion problems as a result of thermal decomposition of the blowing agents to hydrogen chloride.

**Notice:** This polystyrene foam plastic product is COMBUSTIBLE and should be protected from flame and other high heat sources. It should be installed with code-acceptable thermal barriers or used in approved alternative constructions. For more information, contact T. Clear Corporation at 800-544-7398.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Engineering Controls:** Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

**Personal Protective Equipment**

**Eye/Face Protection:** Use safety glasses. If there is a potential for exposure to particles, which could cause mechanical injury to the eye, wear chemical goggles.

**Skin Protection:** No precaution other than clean body-covering clothing should be needed.

**Respiratory Protection:** Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, including but not limited to saw, router, or hot wire cutting, use an approved air-purifying respirator. In dusty atmospheres, use an approved dust respirator.

**Exposure Guidelines:** Ethyl chloride: ACGIH TLV is 100 ppm, skin, A3. OSHA PEL is 1000 ppm. Chlorodifluoroethane (HCFC 142b): AIHA WEEL is 1000 ppm, TWA.

PELs are in accord with those recommended by OSHA, as in the 1989 revision of PELs.

A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance/Physical State:** Rigid cellular foam board with channels and a filter fabric adhered to channeled surface.

**Odor:** No odor.

**Vapor Pressure:** Not applicable

**Vapor Density:** Not applicable

**Boiling Point:** Not applicable

**Solubility in Water/Miscibility:** None

**Specific Gravity Or Density:** Composite: 0.03

**10. STABILITY AND REACTIVITY**

**Chemical Stability:** Stable.

**Conditions to Avoid:** Avoid fire and high temperatures. Temperatures over 300°C (572°F) will release combustible gases.

**Incompatibility With Other Materials:** Aromatic hydrocarbons, higher (>C5) aliphatic hydrocarbons, esters, amines, higher aldehydes.

**Hazardous Decomposition Products:** Does not normally decompose. In smoldering or flaming conditions, carbon monoxide, carbon dioxide, and carbon are generated. Evolution of small amounts of hydrogen bromide, hydrogen chloride and hydrogen fluoride occur when burned or heated over 250°C (482°F); under high heat, non-flaming conditions, small amounts of aromatic hydrocarbons such as styrene and ethylbenzene are generated.

**Hazardous Polymerization:** Will not occur.

**11. TOXICOLOGICAL INFORMATION:** (See Section 3 for Potential Health Effects.)

**Mutagenicity:** For the minor component(s) ethyl chloride and chlorodifluoroethane. In vitro mutagenicity studies were negative in some cases and positive in other cases. For the minor component(s) chlorodifluoroethane, Animal mutagenicity studies were negative. For the minor components HBCD, In vitro mutagenicity studies were negative.

**12. ECOLOGICAL INFORMATION:****Environmental Fate**

**Movement & Partitioning:** No bioconcentration is expected because of the high molecular weight (MW greater than 1000). In the terrestrial environment material is expected to remain in the soil. In the aquatic environment, material will sink and remain in the sediment.

**Degradation & Persistence:** This water insoluble polymeric solid is expected to be inert in the environment. Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

**Ecotoxicity:** Not expected to be acutely toxic.

**13. DISPOSAL CONSIDERATIONS:** (See Section 15 for Regulatory Information)

**Disposal:** Do not dump into any sewers, on the ground, or into any body of water. All disposal methods must be in compliance with all Federal, State/provincial and local laws and regulations. Regulations may vary in different locations. Waste characterization and compliance with applicable laws are the responsibility solely of the waste generator. The T. Clear Corporation 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 intended condition as described in MSDS Section 2 (Composition / Information on Ingredients).

For unused and uncontaminated product, the preferred options include sending to a licensed, permitted: recycler, reclaimer, incinerator, or landfill.

For additional information, refer to Handling & Storage Information, MSDS section 7.

**14. TRANSPORTATION INFORMATION:**

Department Of Transportation (D.O.T.): This Product is not regulated by the D.O.T. when shipped domestically by land.

Canadian TDG Information: This product is not regulated by TDG when shipped domestically by land.

**15. REGULATORY INFORMATION:** (Not meant to be all inclusive, selected regulations represented).

**Notice:** The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, expressed or implied, is given. Regulatory requirements are subject to change and may differ from one location to another: it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See other sections for health and safety information.

**U.S. REGULATIONS:**

**SARA 313 INFORMATION:** This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

Chemical Name	CAS Number	Concentration
CHLOROETHANE (ETHYL CHLORIDE)	000075-00-3	<4%
CHLORODIFLUOROETHANE	000075-68-3	6%-10%

**SARA HAZARD CATEGORY:** This product has been reviewed according to the EPA "Hazard Categories" promulgated under sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA- Title 111) and is considered, under applicable definitions, to meet the following categories:

**Exempt article**

This product has been determined to be an article under the definition included in the OSHA Hazard Communication Standard (29 CYR 1910.1200).

**California Proposition 65:** The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986.

**Warning:** This Product contains a chemical known to the State of California to cause Cancer.

**State Right-To-Know:** The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

Chemical Name	CAS Number	List
CHLOROETHANE (ETHYL CHLORIDE)	000075-00-3	NJ3 PA1 PA3
CHLORODIFLUOROETHANE	000075-68-3	NJ2 NJ3 PA1

NJ2= New Jersey Environmental Hazardous Substance present at greater than or equal to 1.0%

NJ3= New Jersey Workplace Hazardous Substance present at greater than or equal to 1.0%

PA1= Pennsylvania Hazardous Substance present at greater than or equal to 1.0%

PA3= Pennsylvania Environmental Hazardous Substance present at greater than or equal to 1.0%

**Canadian Regulations:**

**WHMIS Information:** The Canadian Workplace Hazardous Materials Information System Classification for this product is: This product is not a "Controlled Product" under WHMIS.

**Other Information:****National Fire Protection Association (NFPA) Ratings:**

Health 0

Flammability 1

Reactivity 0

**DOCUMENTARY INFORMATION**

The information presented here is based on the testing data available to us at the time of publication and is believed to be correct. Since this information may have been obtained in part from independent laboratories or other sources not under our direct supervision, no representation is made that the information is accurate, reliable, complete or representative. We have made no effort to conceal or to censor deleterious aspects of this product. Since we cannot anticipate all conditions which may arise during use of this product, we make no guarantee that the health and safety precautions for all individuals and/or situations involving its handling and use. Likewise, we make no guarantee or warranty of any kind that the use or disposal of this product is in compliance with all federal, state, or local laws. It is the obligation of the user of the product herein to determine and comply with the requirements on all applicable statutes.