

MATERIAL SAFETY DATA SHEET

SECTION I - PRODUCT INFORMATION

Product: ZERODRAFT Insulating Air Seal Kit
Z2-200, Z2-600 A Component and B Component

Manufactured in the U.S. for: ZERODRAFT
125 Traders Blvd. East, Unit 4
Mississauga, Ont,
L4Z 2H3, Canada

Emergency Number: 1-800-424-9300 (Chemtrec)
Information Number: 1-877-272-2626 (Zerodraft)

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

A Component

| CHEMICAL NAME | CAS NO. | OSHA PEL | ACGIH TLV | PERCENTAGE |
|--|-----------|-----------------|--------------|------------|
| Polymeric Diphenylmethane Diisocyanate (MDI) | 9018-87-9 | NE* | NE* | 40-50 |
| 4,4-Diphenylmethane Diisocyanate | 101-68-8 | 0.02ppm CEIL | 0.005ppm TWA | 25-35 |
| Chlorodifluoromethane (HCFC-22) | 75-45-6 | 1,000ppm TWA | 1,000ppm TWA | 5-30 |

B Component

| CHEMICAL NAME | CAS NO. | OSHA PEL | ACGIH TLV | PERCENTAGE |
|---|----------------------------|-----------------|--------------|------------|
| | | | | |
| Polyol Blend | Proprietary Mixture NE* | NE* | NE* | 35-75 |
| Flame Retardant | Proprietary Mixture NE* | NE* | NE* | 3-30 |
| Catalyst | Proprietary Mixture NE* | NE* | NE* | < 1 |
| 1,1-Dichloro-1-Fluoroethane (HCFC-141b) | 1717-00-6 | NE* | NE* | 2-18 |
| Chlorodifluoromethane (HCFC-22) | 75-45-6 | 1,000ppm TWA | 1,000ppm TWA | 5-30 |

*Not established

None of the ingredients in both A and B component are listed by IARC, NTP, OSHA, or ACGIH as a carcinogenic substance.

| | | | | |
|----------------------|--------------------|-----------------|-----------------------|---------------------|
| Hazard Rating : HMIS | A Component | Health 2 | Flammability 1 | Reactivity 1 |
| | B Component | Health 1 | Flammability 1 | Reactivity 0 |

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

| | A Component | | B Component | |
|--|--|--------------------------------------|---|--|
| Boiling Point | HCFC-22 MDI | -41.4°F at 1 ATM 392°F at 5 mm Hg | HCFC-22 HCFC-141b Polyol Blend | -41.4°F at 1 ATM 89.6°F NE* |
| Vapor Pressure | HCFC-22 MDI | 136 psia at 70°F 0.00016mmHg@68°F | HCFC-22 HCFC-141b Polyol Blend | 136 psia at 70°F 10 psia at 68°F NE* |
| Vapor Density (AIR = 1) | HCFC-22 | 2.98 at 1 ATM | HCFC-22 HCFC-141b | 2.98 at 1 ATM 4.0 at 1 ATM |
| Specific Gravity (H ₂ O = 1) | HCFC-22 MDI | 1.17 at 86°F 1.2 | HCFC-22 HCFC-141b Polyol Blend | 1.17 at 86°F 1.25 at 50°F 1.1 |
| Flash Point | HCFC-22 MDI | None > 400°F closed cup | HCFC-22 Polyol Blend | None NE* |
| Solubility in Water | Insoluble | | Soluble | |
| Appearance and Odor | Dark brown color with earthy, musty odor | | Clear, off yellow viscous liquid with slight odor | |

*Not established

SECTION IV - FIRE AND EXPLOSION HAZARD DATA**Extinguishing Media****Z2 units in boxes:** Water fog, foam, CO₂, or dry chemical**Cured foam:** Water fog, foam, CO₂, or dry chemical**Fire Fighting Procedures****Z2 units in boxes:** Keep containers cool. Wear self-contained breathing apparatus and turnout gear.Hazardous decomposition products include CO, CO₂, oxides of nitrogen, and traces of HCN, HF, HCl, Tin Oxide, Cl, PO & Silicon Dioxide.**Cured foam:** Wear self-contained breathing apparatus. Hazardous decomposition products include CO, CO₂, oxides of nitrogen, and traces of HCN, HF, HCl, Tin Oxide, Cl, and PO.**Unusual Hazards****Units in boxes:** High temperatures will increase the pressure in the tanks, which may lead to rupturing.**Cured foam:** This product is combustible. Do not expose to high heat, sparks, or open flame.**SECTION V - REACTIVITY DATA****Stability**

Z2 units in boxes are considered stable under normal storage and handling conditions. Do not store above 120°F. The mixing of the "A" Component and "B" Component during use produces heat and expansion.

Cured foam will slowly deteriorate when exposed to UV light.

Incompatibility

| | |
|---------------------|--|
| A Component: | Water, alcohols, strong bases, finely powdered metal such as aluminum, Magnesium or zinc, and strong oxidizers. |
| B Component: | Strong alkali or alkaline earth metals, finely powdered metals such as Aluminum, magnesium, or zinc, strong oxidizers, and strong acids. |

Conditions/Hazards to Avoid:Avoid high heat; i.e., flames, extremely hot metal surfaces, heating elements, combustion engines, etc. Contaminated A component with water may form CO₂. Do not dispense only one tank at a time. Both A & B components must be used together.

SECTION VI – TOXICOLOGICAL INFORMATION

Concentration of ingredients (section II) must be considered to determine effects of the "A" component mixture and "B" component mixture. Although these mixtures have not been tested, it is assumed that the mixture presents the same health hazards as do the ingredients present at 1% or higher level. Proper personnel protection and adequate ventilation should be provided to avoid exceeding the exposure limits listed in section II.

Inhalation MDI vapors from A component or spray mist may cause irritation of the mucous membranes of the nose, throat or trachea, which may cause chest discomfort, coughing, and allergic asthma-like sensitivity. Air-borne overexposure well above the PEL may result additionally in eye irritation, headache, chemical bronchitis, asthma-like findings or pulmonary edema. Inhaling concentrated fluorocarbons from A component and/or B component can cause unconsciousness, drowsiness, respiratory depression, rapid heartbeat and other symptoms. Persons with preexisting heart disease may be at increased risk from exposure.

Skin Contact: with both A component and B component may result in localized irritation, reddening or swelling. Prolonged or repeated exposure may lead to sensitization and/or dermatitis. Uncured foam forms a quick bond with skin and hard to remove after it is cured.

Eye Contact: with MDI of A component may result in eye irritation and mild corneal opacity due to adhesive character. B component may have irritating effect to eyes.

Ingestion: A component may cause irritation of mucous membranes in the mouth and digestive tract. B component may have slight effect of such.

Emergency and First Aid Procedures

A component or B component material

Skin - If frostbitten, warm skin slowly with water; otherwise, wash affected areas with soap and water for at least 15 minutes. Remove contaminated clothing and launder before reuse. Get immediate medical attention.

Eyes - Immediately flush with large quantities of water for a minimum of 15 minutes. Use fingers to assure that eyelids are separated and that eye is being irrigated. Get immediate medical attention.

Ingestion - If swallowed, dilute with water. DO NOT INDUCE VOMITING. Never give fluids or induce vomiting if the victim is unconscious or having convulsions. Get immediate medical attention.

Inhalation - Remove to fresh air. Get immediate medical attention.

Foam

Skin - Remove wet foam immediately from skin with soft cloth, then clean with acetone or nail polish remover. If irritation persists get medical attention. Dried foam is hard to remove from skin. If foam dries on skin, apply generous amounts of petroleum jelly or lanolin, leave on for one hour, wash thoroughly, and repeat process until foam is removed. Do not attempt to remove dried foam with solvents.

Eye - In case of eye contact, flush with water for 15 minutes. Get immediate medical attention.

Ingestion - In case of ingestion, get immediate medical attention.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

"A" Side

Spills/Leaks - Evacuate and ventilate spill area, dike spill to prevent entry into water system, wear full protective equipment including respiratory equipment during clean up.

If transportation spill involved, call CHEMTREC @ 1-800-424-9300. If temporary control of isocyanate vapor is required, a blanket of protein foam (available at most fire departments) may be placed over the spill. Transfer as much liquid as possible via pump or vacuum device into closed but not sealed containers for disposal. Absorb the isocyanate with saw dust or other absorbent and shovel into open top containers. Do not make pressure tight. Transport to a well-ventilated area (outside) and treat with neutralizing solution consisting of a mixture of 90% water, 3-8% ammonia and 2-7% detergent. Add about 10 parts of neutralizer per part of isocyanate with mixing. Allow to stand for 48 hours letting evolved carbon dioxide

escape. Decontaminate spill area using neutralizing solution and letting stand over affected areas for at least 10 minutes.

Waste Disposal - Dispose according to federal, state, and local regulations. - Do not discharge into waterways or sewer systems.

Container Disposal - Dispose according to federal, state, and local regulations.

"B" Side

Spills/Leaks - Evacuate and ventilate spill area, dike spill to prevent entry into water system, wear full protective equipment including respiratory equipment during clean up. If transportation spill involved, call CHEMTREC @ 1-800-424-9300. Transfer as much liquid as possible via pump or vacuum device into closed but not sealed containers for disposal. Absorb the material with saw dust or other absorbent and shovel into containers and transport to a well-ventilated area.

Waste Disposal - Do not discharge into waterways or sewer systems. Dispose according to federal, state, and local regulations.

Container Disposal - Dispose according to federal, state, and local regulations

Storage: Store in a cool, dry place. Ideal storage temperature is 60°F - 80°F. Storage above 90°F will shorten the shelf life. Since the containers are pressurized, do not store above 120°F (49°C) in order to avoid excessive pressure build up and possible container rupture. Protect containers from physical abuse.

SECTION VIII - PERSONAL PROTECTION

Respiratory Protection Use only in well-ventilated areas. Wear NIOSH / MSHA approved, positive pressure, supplied air respirator when vapor level is exceed the guideline listed in section II in this MSDS.

Clothing Wear rubber butyl or nitrile rubber gloves, coveralls, long sleeve shirts, and head covering to avoid skin contact. Contaminated equipment / clothing should be cleaned after each use or disposed.

Eye Protection Wear face shield and goggles, or safety glasses.

Ventilation If ventilation is not enough to maintain P.E.L. exhaust area.

SECTION IX - OTHER REGULATORY INFORMATION

SARA - This product contains a toxic chemical that may be subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR 372).

| NAME | CAS NO. | AMOUNT |
|------------------------------|----------|--------------------|
| Diphenylmethane Diisocyanate | 101-68-8 | 25-35% of "A" Side |

DOT Proper Shipping Name

Z2-200 & Z2-600 Compressed gas, NOS (Chlorodifluoromethane, Nitrogen)

Diphenylmethane Diisocyanate (cas# 101-68-8) is cited on certain state lists as follow:

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=New Jersey environmental hazardous substance (present at greater than or equal to 1.0%)

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