E-Series® Contact Cleaner/Degreaser 2000
ES1202, ES2202

IDENTIFICATION
Name: Contact Cleaner 2000

Manufacturer: Chemtronics, Inc.
8125 Cobb Center Drive
Kennesaw, GA 30144

PHYSICAL DATA
Boiling Point: 90°F
Vapor Pressure: 10 mm Hg @ 70°F
Vapor Density >1 (Air=1)
Solubility in Water: Negligible
Specific Gravity (Water=1): 1.23

INGREDIENTS
Material(s): CAS Registry No.(s):
1,1-Dichloro-1-fluoroethane 1717-00-6
Denatured Alcohol 64-17-5
Methylenechlorohexane 108-87-2
Nitroethane 79-24-3
Chlorodifluoromethane 75-45-6
Carbon Dioxide 124-38-9

HAZARDOUS REACTIVITY
Stability: Material is stable. Product vapor is flammable. Use only in adequately ventilated areas. Avoid spraying near open flames or red hot surfaces. Do not heat containers above 120°F.

Decomposition or By-products: Thermal decomposition may evolve hydrogen chloride, hydrogen fluoride, and chlorine gas. Oxides of carbon and incompletely combusted hydrocarbons may also evolve.

Incompatibility: Reacts with caustic and certain molecular sieves, slowly releasing vinyl chloride, which can form explosive peroxides on exposure to air.

Polymerization: Will not occur.

FIRE AND EXPLOSION DATA
Flash Point: None
Method: TCC
Autoignition Temperature: Unknown
Flammable Limits in Air, % by Vol.: Lower: Unknown Upper: Unknown

Autodecomposition Temperature: Unknown

Fire and Explosion: Containers may develop pressure under fire conditions and may vent, rupture or explode and add to flying or falling debris. Decomposition may occur producing toxic gases.

Extinguishing Media: Dry chemical, carbon dioxide, alcohol foam or water spray.

Special Fire Fighting Instructions: Self-contained breathing apparatus (SCBA) may be required if containers rupture and contents are released under fire conditions. Water spray may be effective in cooling fire exposed containers and in dispersing product vapor. Avoid spreading burning liquid with water used

HEALTH HAZARD INFORMATION
Principal Health Hazards—Routes of Entry:
Inhalation: Vapors are heavier than air and can displace oxygen available for breathing.
1,1-Dichloro-1-fluoroethane ALC/Rats 50,200 ppm/6 hr
LC50/Rats 62,000 ppm/4 hr
Ethyl Alcohol LC50/Rats 20,000 ppm/10 hr
Methylcyclohexane LC50/Mouse 41,500 mg/m3/24 hrs
No toxic effects noted.
Chlorodifluoromethane LC50/Mouse 28 ppm/30 min.
Change in motor activity, muscle weakness.
Carbon Dioxide LCLo/Human 9 ppm/ 5 min.
No toxic effects noted.

Eye: Contact with liquid product may cause temporary discomfort.
Ethyl Alcohol Rats 100 mg/24 hr Moderate
Ingestion: Ingestion of this product may result in irritation of the lining of the GI tract.
1,1-Dichloro-1-fluoroethane LD50/Rats > 5gm/kg
Ethyl Alcohol LDLo/Human 1400mg/kg
Methylcyclohexane LDLo/Mouse 2,250mg/kg
No toxic effect noted.

Nitroethane LD50/Rats 1,100 mg/kg General anesthetic, tremors, excitement

Skin: Product is a skin irritant.
1,1-Dichloro-1-fluoroethane LD50/Rats > 2 m/kg
Ethyl Alcohol LDLo/Rabbits 20 mg/kg

Exposure Limits:

Material: TWA (ACGIH): STEL (ACGIH): PEL (OSHA):
1,1-Dichloro-1-fluoroethane NA 100 ppm NA
Denatured Alcohol 1,000 ppm NA 1,000 ppm
Methylenechlorohexane 400 ppm NA 400 ppm
Nitroethane 100 ppm NA 100 ppm
Chlorodifluoromethane 1,000 ppm NA 1,000 ppm
Carbon Dioxide 5,000 ppm 30,000 ppm 10,000 ppm

Signs and Symptoms of Over-Exposure:
Inhalation: Inhalation of large concentrations of product vapor may result in dizziness, headache, loss of coordination and loss of consciousness. May also cause heart irregularities, with temporary alteration of the heart's electrical activity, irregular pulse, palpitations or inadequate circulation, in some individuals. (See note on medical conditions aggravated by use).

Eye: Direct contact with liquid may cause mild discomfort.

Ingestion: Ingestion of this product may result in irritation of the lining of the GI tract and lead to symptoms of CNS depression such as headache, drowsiness, dizziness, loss of coordination.

Skin: Prolonged or repeated contact with liquid product may result in defatting of the skin and lead to reddening, drying, burning and general irritation.

Medical Conditions Possibly Aggravated by Exposure:
Persons with pre-existing conditions of the skin and cardiac system may be more susceptible to the toxic effects of this product. (See Inhalation section)

First Aid:

Inhalation: Remove victim to fresh air. If not breathing or if breathing is difficult, administer artificial respiration or oxygen. Seek medical attention.

Eye: Immediately flush with water for at least 15 minutes. If irritation occurs or persists, seek medical attention.

Ingestion: DO NOT induce vomiting as the hazard of aspirating the material into the lungs is a greater hazard than allowing it to pass through the intestinal tract. Seek medical attention.

Skin: Flush with water. After flushing, wash the area with warm water and detergent. If irritation occurs or persists, seek medical attention. Launder contaminated clothing before reuse.

Carcinogenicity:
Components are not listed as carcinogens by IARC or NTP. OSHA regulated - yes; OSHA air contaminant.

Toxic - yes, low toxicity. (See Inhalation and Ingestion sections)
E-Series® Contact Cleaner/Degreaser 2000
ES1202, ES2202

CONTROL/PPE MEASURES

Respiratory Protection: No
Ventilation: No
Protective Gloves: Yes
Eye Protection: Yes
Other Protection: Yes

PPE ID: Good ventilation/H.C. Resp.
Impermeable Safety glasses, goggles, shield
Eye bath & Protective clothes

Work/Hygienic Practices: Normal ventilation for standard manufacturing procedures is generally adequate. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low places.

NFPA Codes: Health: 2, Flammability: 2, Reactivity: 0.

DISPOSAL INFORMATION

Spill, Leak or Release: Ventilate area. Remove open flames or other sources of ignition. Collect spilled product with absorbent material and place in closed steel drums for proper disposal.

SARA 311 Quantity: NA
Units of Measure: Lb.

Waste Disposal: Comply with all Federal, State and Local regulations. Reclaim by distillation or arrange for disposal with a licensed TSD facility.

OTHER INFORMATION

Storage Conditions: Product vapor is flammable. Use only in adequately ventilated areas. Do not store near sources of heat, in direct sunlight, or where temperatures exceed 120° F. Do not store near acids or other oxidizing materials. Wash hands after handling and before eating and smoking. Rotate stock.

SECTION 313 SUPPLIER INFORMATION

Other Precautions: This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372).

CAS#: CHEMICAL PERCENT BY NAME: WEIGHT:
75-45-6 Chlorodifluoromethane 10 - 12%

This information should be included in all MSDSs copied and distributed for this material.

Contains chemicals listed on the TSCA Inventory: Yes
Date Revised: 6/92
Person Responsible: M. Watkins, Quality Control Manager

ENVIRONMENTAL IMPACT DATA

<table>
<thead>
<tr>
<th>ENVIRONMENTAL IMPACT DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFC  0.0%   VOC  5.0%</td>
</tr>
<tr>
<td>HCFC 92.5%  HFC  0.0%</td>
</tr>
<tr>
<td>C1 Solv. 0.0%  ODP  0.10</td>
</tr>
</tbody>
</table>

For more information call: 1-800-645-5244

To the best of our knowledge, the information contained herein is accurate. However, all materials may present unknown hazards and should be used with caution. In particular, improper use of our products and their inappropriate combination with other products and substances, may produce harmful results which cannot be anticipated. Final determination of the suitability of any material is the sole responsibility of the user. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that may exist.