MATERIAL SAFETY DATA SHEET

IDENTIFICATION

Name: **Otis Cleaner No. 6**
Chemtronics TF

Chemical Family:
Halogenated Hydrocarbon

Synonyms:
Trichlorotrifluoroethane, TF
R-113, Refrigerant 113

Formula:
CCl_2FCClF_2

CAS Name:
Ethane, 1,1,2-Trichloro-1,2,2-Trifluoro

CAS Registry No.
76-13-1

Manufacturer/Distributor:

Chemtronics, Inc.

Medical Emergency Phone:

(516) 582-3322

Address:

681 Old Willets Path
Hauppauge, NY 11788

PHYSICAL DATA

Boiling Point(°F): 117.6

Density: 1.57 g/cc @/77°F

Vapor Density (Air = 1): 6.5

pH Information: Neutral

Form: Liquid

Color: Colorless

Percent Volatile by Volume: 100%

Vapor Pressure: 334mm Hg @/77°F

Solubility in H_2O: 0.02% by wt. @ 77°F

Evaporation Rate (CCl_4 = 1): 0.1

Appearance: Clear

Odor: Slight Ethereal Odor

HAZARDOUS COMPONENTS

Material(s):
Trichlorotrifluoroethane

Approximate % :
100

HAZARDOUS REACTIVITY

Stability: Material is stable. However, avoid open flames and high temperatures.

Incompatibility: Alkali or alkaline earth metals - powdered Al, Zn, Be, etc.

Decomposition: This compound can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids - possibly carbonyl halides.

Polymerization: Will not occur

FIRE AND EXPLOSION DATA

Flash Point:
None

Method:
TOC

Autoignition Temperature:
Not Determined

Flammable Limits in Air, % by Vol.
Lower: Nonflammable
Upper: Nonflammable

Autodecomposition Temperature:
Not Determined

Fire and Explosion:
Drums may rupture under fire conditions. Decomposition may occur.

Extinguishing Media:
Nonflammable

Special Fire Fighting Instructions:
Self-contained breathing apparatus (SCBA) may be required if drums rupture and contents are spilled under fire conditions.

HEALTH HAZARD INFORMATION

Principal Health Hazards:

Inhalation: Vapor is heavier than air and can cause suffocation by reducing oxygen available for breathing. Breathing high concentrations of vapor may cause light-headedness, giddiness, shortness of breath, and may lead to narcosis, cardiac irregularities, unconsciousness or death. LC50 Rat 52,000 ppm/4 hr.

Note: In screening studies with experimental animals, exposure at approximately 5000 ppm (v/v) and above, followed by a large intravenous epinephrine challenge, has induced serious cardiac irregularities.

Skin: Not a corrosive or irritant; however, liquid contact can cause defatting of tissue. ALD rabbit >11,000 mg/kg.

Eye: Liquid contact can cause discomfort, usually no extended effect.

Oral: Ingestion of FC-113 is to be avoided. LD 50 Rat 43000 mg/kg.

Exposure Limits:

PEL (OSHA) 1,000 ppm

TLV®-TWA (ACGIH) 1,000 ppm

Safety Precautions:
Avoid breathing vapors and prolonged skin exposure. Use only in well ventilated area.

First Aid:

Inhalation: Remove to fresh air, call a physician. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Do not give epinephrine or similar drugs.

Note to Physicians: Because of a possible increased risk of eliciting cardiac dysrythmias, catecholamine drugs, such as epinephrine, should be considered only as a last resort in life threatening emergencies.

Eye: Flush with water.

Skin: Flush with water. Get medical attention if irritation is present.

Oral: Get medical attention immediately. Do not induce vomiting as the hazard of aspirating the material into the lungs is a greater hazard than allowing it to progress through the intestinal tract.

Medical Conditions Possibly Aggravated by Exposure:

Skin disease - TF is a defatting agent and can cause dermatitis on prolonged exposure. Persons with pre-existing skin disorders may be more susceptible to the effects of this agent.

Cardiovascular disease - See Principal Health Hazards: Inhalation Section.

Other Health Hazards:

TF is not listed as a carcinogen by IARC, NTP or OSHA. Based on animal studies and human experiences this fluorocarbon poses no hazard to man relative systemic toxicity, carcinogenicity, mutagenicity, or teratogenicity when occupational exposures are below its TLV®.

PROTECTION INFORMATION

Generally Applicable Control Measures:
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.

Personal Protective Equipment:

Butyl gloves should be used to avoid prolonged or repeated exposure. Chemical splash goggles should be available for use as needed to prevent eye contact. Under normal manufacturing conditions no respiratory protection is required when using this product. Self-contained breathing apparatus (SCBA) is required if a large spill occurs.

DISPOSAL INFORMATION

Spill, Leak or Release:
Ventilate area. Do not flush into sewers. Dike spill. Collect on absorbent material and transfer to steel drums for recovery or disposal. Comply with federal, state and local regulations on reporting releases.

Waste Disposal: Comply with federal, state and local regulations. Remove to a permitted waste disposal facility. EPA Hazardous Waste Nos. F001 and F002 may apply to waste materials.