

MATERIAL SAFETY DATA SHEET
Brodi Specialty Products Ltd.

SECTION 1

Product Name: CTD 10960 (all grades)
(NOT FOR USE IN DRY CLEANING)

Supplier's Name: Brodi Specialty Products Ltd.
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Date: January 1, 2010
WHMIS Classification: Class D, Division 1, Subdivision B
Class D, Division 2, Subdivision A
Class D, Division 2, Subdivision B

SECTION 2 - HAZARDOUS INGREDIENTS

Perchloroethylene (Tetrachloroethylene) 100%
CAS NO. 127-18-4

SECTION 3 - PHYSICAL/CHEMICAL PROPERTIES

Boiling Point: 250 Deg. F (121.1C)
Vapour Pressure: 13 mmHg @ 20C
Vapour Density (air =1): 5.8
Solubility in Water: 0.015g/100g @ 25C
Specific Gravity: 1.62 @ 25/25C
% Volatile by Volume: 100
Appearance and Odour: Colourless Liquid, mild, sweet odor

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

Flash Point: None
Method Used: TCC
Flammable LFL: None UFL: None
Extinguishing Media: Non-flammable material.
Special Fire Fighting Equipment and Hazards: Wear positive
pressure self-contained respiratory equipment. No
autoignition temperature.

SECTION 5 - REACTIVITY DATA

Stability: (Conditions to Avoid): Avoid open flames, welding
arcs, or other high temperature sources which induce
thermal decomposition.
Incompatibility: (Specific Materials to avoid): Strong acids
and oxidizing materials.
Hazardous Decomposition Products: Involvement in fire forms

hydrogen chloride and small amounts of phosgene and chlorine.

Hazardous Polymerization: Will not occur.

SECTION 6 - HEALTH HAZARD DATA

Inhalation: Major potential route of exposure. 100 ppm for 7 hours causes mild irritation to eyes, nose, throat; flushing of face and neck; headache, slurred speech, and drowsiness. 200 ppm for 1 hour causes the same symptoms, plus dizziness and lightheadedness. 600 ppm for 10 minutes causes sensation of numbness around mouth, dizziness, and incoordination; 2,000 ppm causes mild narcosis within 5 minutes. 5,000 ppm cannot generally be tolerated and causes vertigo, nausea, and mental confusion. Unconsciousness or death can occur at extremely high concentrations or on prolonged exposures above 500 ppm.

Skin: Prolonged or repeated contact of liquid can cause irritation, defatting of skin, and dermatitis. Prolonged single exposure can result in progressively severe burning sensation and redness. Absorption through intact skin is possible if contact with liquid is prolonged.

Eyes: Liquid in eyes produces pain and irritation with mild temporary damage possible. Vapor can irritate eyes.

Ingestion: Single dose toxicity is moderate and causes severe gastrointestinal irritation with nausea, vomiting, stomach cramps, and diarrhea likely. If vomiting occurs, perchloroethylene can be aspirated into lungs, which can cause chemical pneumonia and systemic effects.

Chronic Toxicity: The finding of chronic toxic effects in laboratory animals may indicate toxicity to humans.

Overexposure should be avoided, failure to do so could result in injury, illness or even death. Perchloroethylene has caused liver and kidney toxic effects in chronically overexposed experimental animals.

Carcinogenicity: Three studies have been conducted to assess the carcinogenic potential of perchloroethylene in laboratory animals. In one study, rats and mice were exposed by gavage(force-fed) at levels of 500 and 1000 mg/kg/day.

Increased incidence of liver tumors were observed in mice. The results of the rat study were inconclusive due to an excess in animal deaths. The second study involved rats exposed to concentrations up to 600 ppm via inhalation, six hours per day, 5 days per week for one year. The animals were observed until the time of death or until the 31st month and studies indicate no statistically significant increase in tumors. The significance of the second study has been questioned, since exposure lasted for only one year. A third study involved exposure of mice to 100 or 200 ppm and rats to 200 and 400 ppm for six hours per day, 5 days per week for 2 years. Increased incidence of liver tumors were observed in mice. In rats an increase in a rare kidney tumor was observed in the male rat, and both males and females had an increased incidence of mononuclear cell leukemia.

The International Agency for Research on Cancer (IARC) has concluded that, with respect to perchloroethylene there is sufficient evidence of the carcinogenicity to experimental

animals, and inadequate evidence of the carcinogenicity to humans, resulting in a classification as a 2B animal carcinogen. The NTP has identified perchloroethylene as an animal carcinogen. Perchloroethylene is listed on the IARC and the NTP carcinogen lists, but not by OSHA. The State of California has listed perchloroethylene under Proposition 65 as a chemical known to the state to cause cancer. Epidemiologic studies have been inconclusive in determining whether perchloroethylene is associated with increased incidences of cancer in humans. Reproductive Toxicity: Clinical studies on mice, rats and rabbits have been conducted to evaluate the potential reproductive effects of perchloroethylene exposures. Perchloroethylene exposure by inhalation was found to cause transitory delays in the skeletal development of fetal rats and mice. Perchloroethylene has not caused teratogenic effects (birth defects) in experimental animals.

SECTION 7 - PERSONAL PROTECTION AND CONTROLS

Exposure Guideline(s): Perchloroethylene: ACGIH TLV is 25 ppm. TWA; STEL is 100 ppm; OSHA TWA, 100 ppm. Respiratory Protection: Where vapor concentration exceeds or is likely to exceed 25 ppm, a NIOSH/MSHA approved organic vapor type half-mask respirator is acceptable. A NIOSH/MSHA approved self-contained breathing apparatus or air line respirator, with full face piece, is required for vapor concentrations above 250 ppm and for spills and/or emergencies. Follow any applicable respirator use standards or regulations.

Ventilation: Do not use in closed or confined space. Open doors and/or windows. Use ventilation to maintain exposure levels below 25 ppm (TWA).

Skin Protection: Wear solvent-resistant gloves such as Viton, polyvinyl alcohol, or equivalent. Solvent-resistant boots, apron, headgear and/or faceshield should be worn where splashing is a possibility.

Eye Protection: Wear safety glasses. Contact lenses should not be worn. Chemical goggles and/or face shields should be worn where splashing is a possibility.

Hygiene: Avoid contact with skin and avoid breathing vapors. Do not eat, drink, or smoke in work area. Wash hands prior to eating, drinking, or using restroom. Any clothing or shoes which become contaminated with perchloroethylene should be removed immediately and thoroughly laundered before wearing again.

Other Control Measures: To determine exposure level(s), monitoring should be performed regularly. Safety shower and eyewash station should be available.

NOTE: Protective equipment and clothing should be selected, used, and maintained according to applicable standards and regulations. For further information, contact the clothing or equipment manufacturer.

SECTION 8 - EMERGENCY FIRST AID PROCEDURES

Inhalation: Remove to fresh air. If breathing has stopped, administer artificial respiration. Call a physician.
Skin: Remove contaminated clothing and shoes. Wash exposed area thoroughly with soap and water for at least 15 minutes. Wash contaminated clothing before reuse.
Eyes: Flush eyes immediately with water for at least 15 minutes. If irritation persists, call a physician.
Ingestion: Do not induce vomiting. Contact physician or emergency medical facility immediately.
NOTE TO PHYSICIAN: Adrenalin should never be given to persons overexposed to perchloroethylene.

SECTION 9 - STORAGE AND HANDLING PRECAUTIONS

Follow protective controls set forth in Section 7 when handling this product. Store in labeled, sealed containers in a cool, dry, well-ventilated area. Prevent water or moist air from entering storage tanks or containers. Do not cut or weld on empty or full drums. Aluminum equipment should not be used for storage and/or transfer. Vapors are heavier than air and will collect in low areas. Do not enter confined spaces such as tanks or pits without following proper entry procedures as required by 29 CFR 1910.146. Do not remove or deface label. Do not reuse drum without recycling or reconditioning in accordance with any applicable federal, state or local laws.
SARA Title III Hazard Categories: Immediate Health, Delayed Health.

SECTION 10 - SPILL, LEAK AND DISPOSAL PRACTICES

Steps To Be Taken In Case Material Is Released Or Spilled: Evacuate the area, ventilate, and avoid breathing vapors. Dike area to contain spill. If spill occurs indoors, turn off heating and/or air conditioning systems, to prevent vapors from contaminating entire building. Clean up area (wear protective equipment—refer to Section 7) by mopping or with absorbent material and transfer to closed containers for disposal. Avoid contamination of ground surface waters. Do not flush to sewer. Reportable Quantity (RQ) is 100 lbs. Notify National Response Center (800-424-8802) of uncontained releases to the environment in excess of the RQ.
Waste Disposal Method: Recovered liquids may be sent to a licensed reclaimer or incineration facility. Contaminated material must be disposed of in a permitted waste management facility. Consult federal, state, or local disposal authorities for approved procedures.

SECTION 11 - TRANSPORTATION

Dangerous Goods Classification:
Shipping Name: Tetrachloroethylene

CLASS: 6.1
UN NUMBER: UN1897
Packing Group: III

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