

### **3.4.1 Garment Cleaning: Dry Cleaning**

*Tip Sheet #1*

**WASTE ORIGIN:** Chemical Storage

**WASTE TYPES:** Petroleum-based Solvents and Volatile Organic Compound (VOC) Air Emissions

**WASTE REDUCTION AND RECYCLING METHODS:**

- ! **Tightly seal** bungs and lids on containers.
- ! **Properly label** containers.
- ! Use **spigots or pumps** to dispense new materials.
- ! Use **funnels** when transferring wastes to storage containers.

**Sources:**

*Preventing Pollution in the Drycleaning Business*, Fall 1991, U.S. EPA.

*Hazardous Waste Reduction Facts: Commercial Dry Cleaners*, City of Santa Monica, Dept. of General Services. (WP, Cleaner, Manual), Industrial Waste Section, County Sanitation Districts of Los Angeles County, Whittier, CA, September 1990.

### **3.4.1 Garment Cleaning: Dry Cleaning**

*Tip Sheet #2*

**WASTE ORIGIN:** Wet-to-Dry or Dry-to-Dry Cleaning Processes

**WASTE TYPE:** Machine Lint and Dust, Sludges, Solvent-Contaminated Rags, Solvent Emissions, Spent Cartridge Filters, and Spent Solvents

**WASTE REDUCTION AND RECYCLING METHODS:**

- ! Regularly **replace gaskets/seals** on dryer dampers, deodorizers, and aeration valves.
- ! **Inspect equipment** for leaks from gasket and hose couplings, flanges, pumps.
- ! Replace faulty or worn **gaskets on button trap** and around cleaning machine door.
- ! adjust in-and-out **condensing coil temperatures** to within 10° F of each other.
- ! Check **air vents** for drippage.
- ! Check **air relief valves** for proper closure.
- ! Repair holes in air and exhaust **ducts**.
- ! After a **filter change**, check gaskets and sealing of new filter.
- ! Monitor **equipment efficiency** (e.g., pounds of clothes cleaned per drum of solvent).
- ! Size loads (neither over- or under-loading) to **maximize solvent efficiency**.
- ! Make sure **cycle is complete** before removing clothes from dryer; do not hang-dry clothes.
- ! Clean **lint screens** regularly to avoid clogging fans and condensers.
- ! Open **button traps and lint gaskets** only long enough to clean.
- ! **Substitute low temperature** laundering for dry cleaning for applicable fabrics.
- ! **Redesign separator** with baffles and decant traps.
- ! Only allow **batch discharge of decant water** from separator after visual inspection.
- ! Consider using some **separator water as a pre-spotter**.
- ! Consider a **refrigerated "dry-to-dry" unit** to replace a wet-to-dry unit to avoid solvent loss in the transfer process.
- ! **Steam out carbon absorber** frequently and allow carbon bed to dry completely before reuse.
- ! **Recover solvents from filter cartridges** by draining the filters (24 hours) and heating/stripping the cartridges to vaporize and capture additional solvent.
- ! Install or retrofit a **solvent recovery system** (either carbon adsorption, refrigeration/condenser).
- ! Add water to **still bottoms** before final boil down to recover additional solvent.
- ! Install solvent **leak detectors**.
- ! Check with **equipment and solvent suppliers** for tips on reducing solvent loss.
- ! Inspect the following areas regularly for leaks:
  - ! hose and pipe connections, valves, fittings, pump, water separator, muck cooler, still; and, cartridge filter housing.

**Sources:**

*Preventing Pollution in the Drycleaning Business*, U.S. EPA, Fall 1991.

*Hazardous Waste Reduction Facts: Commercial Dry Cleaners*, City of Santa Monica, Dept. of General Services.

*Dry Cleaning Industry Pollution Prevention Option Checklist* (WP, Cleaner, Manual), Industrial Waste Section,

County Sanitation Districts of Los Angeles County, Whittier, CA, September 1990.

*Clearing the Air on Clean Air — Strategies For Perc Drycleaners: Compliance, Risk Reduction and Pollution Prevention*, University of Tennessee Center For Industrial Services, Tennessee Department of Environment and Conservation, 1993.

*Source Reduction of Chlorinated Solvents: Dry Cleaning of Fabrics*, California Department of Toxic Substances Control, Alternative Technology Division, June 1991.

Proceedings: *EPA Design for the Environment International Roundtable: Pollution Prevention and Control in the Dry Cleaning Industry*; U.S. EPA, Office of Pollution Prevention and Toxics; Economics, Exposure, and Technology Division; November 1992, EPA/774/R-92/002