

3.16.1 Vehicle Maintenance: General Operations

Tip Sheet #1

WASTE ORIGIN: Maintenance

WASTE TYPES: Spent Fluids (Oil, Coolant, Transmission Fluids), Rebuildable Parts, Batteries, CFC-12, and Catalytic Converters

WASTE REDUCTION AND RECYCLING METHODS:

- ! **Separate** to promote potential for recycling (e.g., store used oil in separate oil storage tank; don't contaminate it with degreasers or absorbents).
- ! Use recyclable brand of **radiator fluid** and collect flushing liquid for reuse.
- ! Use brake fluid, transmission fluid, etc., which do not contain **chlorinated hydrocarbons**.
- ! Install **collection/drip pans** under vehicles.
- ! If unbroken, sell **batteries** to an off-site recycler.
- ! Use **longer-life batteries**.
- ! Purchase state and locally **approved recycling equipment** to recover refrigerant (e.g., an air-tight machine that collects refrigerant as liquid, then reuse on-site or recycle off-site).
- ! Recycle for **precious metal recovery**.

Sources:

Best Management Practices for Automotive Related Industries, Santa Clara Valley Pollution Control Program, CA.

Guides to Pollution Prevention: The Automotive Repair Industry, U.S. EPA, October 1991, EPA/625/7-91/013.

Guides to Pollution Prevention: The Automotive Refinishing Industry, U.S. EPA, October 1991, EPA/625/7-91/016.

Guides to Pollution Prevention: The Mechanical Equipment Repair Industry, U.S. EPA, September 1992, EPA/625/R-92/008.

Vehicle Maintenance: A Self-Assessment Guide to Waste Prevention, Education and Management, Wisconsin Department of Natural Resources, Hazardous Waste Minimization Program, 2nd ed., 1993, PUBL-SW-188.

Vehicle Maintenance Pollution Prevention, Small Business Pollution Prevention Center, Iowa Waste Reduction Center, University of Northern Iowa, 1995.

3.16.1 Vehicle Maintenance: General Operations

Tip Sheet #2

WASTE ORIGIN: Parts Cleaning

WASTE TYPES: Solvent Baths, Air Emissions, and Carburetor Cleaner

WASTE REDUCTION AND RECYCLING METHODS:

- ! Minimize **surfaces exposed** to grease and oil.
- ! Determine **how clean** parts need to be.
- ! Use **less hazardous solvents** (e.g., water-based binders).
- ! Increase **cleaning efficiency**.
- ! Use **liquid spray compositions** rather than bars for better control.
- ! **Pre-rinse parts** using hot tank or jet spray washers.
- ! Use **enclosed parts washers** with filters which use hot water and detergents.
- ! Use **solvents** properly (e.g., don't use to clean floors).
- ! Minimize **amount of cleaning solution** used.
- ! Monitor **solvent composition**.
- ! Operate **solvent sinks** properly and keep plugged when not in use.
- ! Use **drip trays** and allow for more drainage time.
- ! Keep **lids closed** when not in use.
- ! Don't leave **solvent stream** running.
- ! Contract with a service company to **maintain solvent sinks**.
- ! Install on-site **solvent recovery** equipment.
- ! Use **re-formulated carburetor cleaner** compound without 1,1,1-Trichloroethane (TCA).
- ! Use **drip pans** to collect excess cleaning fluids and drain into containers to allow particles to settle out. Reuse excess fluids.

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Guides to Pollution Prevention: The Automotive Refinishing Industry, U.S. EPA, October 1991, EPA/625/7-91/016.

Guides to Pollution Prevention: The Mechanical Equipment Repair Industry, U.S. EPA, September 1992, EPA/625/R-92/008.

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Tip Sheet #3

WASTE ORIGIN: Parts Cleaning

WASTE TYPES: Aqueous Baths

WASTE REDUCTION AND RECYCLING METHODS:

- ! Use **detergent-based cleaning** solutions instead of caustic cleaners.
- ! Install **lids** on tanks.
- ! Use **dry pre-cleaning methods** such as wire brushing.
- ! Maintain **solution quality** by monitoring composition.
- ! **Maintain equipment** in proper working order.
- ! **Filter solids** from the bath on a continuous basis.
- ! Use filter bag on slipstream from **jet spray washes**.
- ! **Screen solids** before they reach the waste sump.
- ! Use **two-stage parts cleaning** sequence.
- ! Install or convert free-running rinses to **still rinse**.
- ! Use a hot tank or jet spray **washer lease service**.
- ! Switch to **bake-off ovens** (e.g., high temperature ovens used with dry abrasive "shot blast" cleaners).

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Guides to Pollution Prevention: The Automotive Refinishing Industry, U.S. EPA, October 1991, EPA/625/7-91/016.

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Tip Sheet #4

WASTE ORIGIN: Shop Cleanup

WASTE TYPES: Outdated Supplies, Dirty Rags, Sawdust, Alkaline Floor Cleaner, and Clarifier Sludges

WASTE REDUCTION AND RECYCLING METHODS:

- ! Computerize **inventory control**; use first-in, first-out inventory management.
- ! Minimize **storage quantities**.
- ! Perform routine storage area **inspections**.
- ! Use **good housekeeping** measures to reduce leaks and spills.
- ! Lease rags from a **laundry cleaning service**.
- ! Use **rags or other absorbents** to their limit.
- ! Use good **housekeeping incentives** to reduce spills and leaks such as an award program for the worker with the cleanest bay.
- ! Use **drip trays** under leaking cars and removed parts.
- ! Properly store **waste materials** (use pallet/containment systems and install self-closing non-leak safety faucets on portable waste oil drums).
- ! Don't flush **dust or floor sweepings** to a clarifier unit.

Sources:

Vehicle Maintenance Pollution Prevention, Small Business Pollution Prevention Center, Iowa Waste Reduction Center, University of Northern Iowa, 1995.

Vehicle Maintenance: A Self-Assessment Guide to Waste Prevention, Education and Management, Wisconsin Department of Natural Resources, Hazardous Waste Minimization Program, 2nd ed., 1993, PUBL-SW-188.

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