

3.7.1 Manufacturing Common Operations: Coating/Painting

Tip Sheet #1

WASTE ORIGIN: **Paint and Varnish Stripping** (Coating removal from parts before applying a new coat)

WASTE TYPES: Spent Stripper and Waste Abrasives

WASTE REDUCTION AND RECYCLING METHODS:

- ! Avoid adding **excess stripper**.
 - ! Use **spent stripper** as rough pre-strip on next item.
 - ! Use **abrasive media** for paint stripping.
 - ! Use **plastic media** paint stripping.
 - ! Use **cryogenic** paint stripping.
 - ! Use **wheat starch** media blasting paint stripping.
 - ! Use **laser or flash lamp** paint stripping.
 - ! Use **thermal** paint stripping.
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WASTE ORIGIN: **Coating Application**

WASTE TYPES: Oversprayed Coating Materials. Volatile Organic Compound (VOC) Air Emissions, Solvents, Paint Filters, Masking, and Protective Clothing

WASTE REDUCTION AND RECYCLING METHODS:

- ! **Re-examine** the need for coating, as well as available alternatives.
- ! Use **plastic coatings** instead of paint.
- ! Use **high-solids coating** formulations.
- ! Use **low-VOC powder coatings**.
- ! Use **water-based** coating formulations.
- ! Use **radiation-curable** (UV or IR) coating formulations.
- ! **Pre-inspect** parts to avoid coating obvious rejects.
- ! **Overspray Reduction:**
 - ! Maintain 50 percent overlap between spray patterns.
 - ! Maintain 6- to 8-inch distance **between spray gun and work piece**.
 - ! Maintain **gun speed** of about 250 feet per minute.
 - ! Hold **gun perpendicular** to surface.
 - ! **Trigger gun** at beginning and end of each pass.
 - ! Properly **train operators**.
 - ! Use **robots** for spraying.
 - ! Avoid **excessive air pressure** for coating atomization.
 - ! Use **electrostatic spray** systems.

- ! Use turbine disk or bell air-assisted **airless spray guns** in place of air-spray guns.
 - ! Make sure spray **gun air supply** is free of water, oil, and dirt.
 - ! Install **on-site paint mixers** to control material use.
 - ! Recycle **overspray**.
 - ! Keep **solvent soak tanks** away from heat sources and covered.
 - ! Control bake **oven temperature**.
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WASTE ORIGIN: Paint Equipment Cleanup

WASTE TYPES: Petroleum-based Solvents and Cleaning Wastes

WASTE REDUCTION AND RECYCLING METHODS:

- ! Use light-to-dark **batch sequencing** to reduce cleanup waste.
- ! Coat **large batches** of similarly coated objects instead of small batches of differently coated objects.
- ! Isolate **solvent-based paint spray booths** from water-based paint spray booths.
- ! **Reuse** cleaning solution or solvent.
- ! Use only **one cleaning solvent**.
- ! **Clean** coating equipment after each use.
- ! **Wipe clean** before solvent cleaning.

Sources:

Auto Body Surface Coating: A Practical Guide to Reducing Air Emissions, Small Business Pollution Prevention Center, Iowa Waste Reduction Center, University of Northern Iowa, 1994.

Facility Pollution Prevention Guide, U.S. EPA, May 1992, EPA/600/R-92/088.

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