

Equipment Cleaning and Line Flushing

Finishing equipment cleaning is usually needed when a process is completed, for changes in coating materials or colors, and when maintenance is required. The more cleaning that takes place, the more waste that is usually generated. Also, solvents are often used to clean equipment and lines, generating waste solvents and VOC emissions.

Here are some ideas that can help you reduce waste from equipment cleaning:

- ! clean only as necessary rather than by schedule only
- ! minimize the number of cleanings of the equipment by finishing with a light coating first, then progressively use darker coatings whenever possible
- ! flush equipment first with dirty solvent, then with clean solvent
- ! reuse cleaning solvent until solvency is lost
- ! use clean solvent as final equipment cleaning, then use as coating reducer
- ! use air to blow lines free of coating back to pots
- ! use bubble injection and pigs to aid line flushing
- ! centralize solvent cleaning operations to reduce losses and standardize cleaning methods and type of solvent used
- ! use mechanical cleaning such as scraping and wiping before solvent cleaning
- ! utilize Teflon® lined tanks to improve drainage and minimize waste coating build-up on tank walls
- ! use rubber wipers to remove coatings off tank walls instead of rags

Inventory and Scheduling Management

Too much inventory or lack of inventory control for materials can result in waste in the form of material never used (inventoried more than needed) or material that deteriorates before use (exceeding shelf life). Work closely with material suppliers to provide just-in-time (JIT) material delivery and order accurate amounts needed for the job.

Managing production schedules to reduce color changes by grouping parts requiring the same finish can eliminate substantial amounts of waste from gun cleaning and line flushing. Efficient production scheduling can maximize the usage of coatings with short pot life.

Benefits

- ! prevent costs for unneeded materials
- ! prevent waste disposal costs
- ! increase floor space
- ! store less hazardous materials
- ! reduce waste from color changes

If you end up with an excess of coating material:

- ! return unused materials to the vendor (make arrangements with the vendor up-front before purchase)
- ! trade or give to other finishers to use
- ! contact a waste exchange to see if someone might be able to use the material

Boling Company Case Study *Mt. Olive, North Carolina*

Until January 1993, Boling was burning spent solvents from the finishing process for fuel. Boling installed a "Little Still" to recycle spent thinners from the plant's wash off operations. Even though the quality of the solvent product from the distillation process was not the quality necessary for reuse as wash off, by mixing one part acetone with three parts reclaimed solvent, the mixture could be used as a thinner in the spray coat operation. The stills operated four times a week and generates 40 - 60 gallons per week.

The cost of the still was \$4825, and operating costs are about \$0.12 per gallon of solvent reclaimed. The net savings is about \$ 100 per week, not including reduced waste disposal costs. The still paid for itself in one year.