

WMRC Factsheet

Reducing Paint Waste

Large or small, businesses can reduce paint wastes, from half-congealed paint to paint/solvent sludge without an investment. Most often, money is saved, efficiency improves, and the workplace is made safer. Here are a few examples of Illinois businesses that have cut down on paint usage and related wastes. Several of the businesses cited are winners of the annual Governor's Pollution Prevention Award competition.

The Marvel Group, Inc.—Chicago

An office furniture manufacturer, Marvel was buying 17,000 gallons of paint a year and disposing of 200,000 pounds of paint and solvent sludge. The paint released about 51,000 pounds of volatile organic compounds (VOCs) each year. The company decided to switch to powder coating. This technique sprays electrostatically charged (positive) paint powder. The paint sticks to the object to be painted because it is negatively charged. The object then moves into an oven where the powder melts and flows into a smooth, uniform coating.

The Marvel Group's paint usage has been reduced to about 4,545 gallons each year. Wastes, and therefore waste disposal costs, have been cut by about 60%. The company reuses about 98% of its paint overspray.

The new powder coated finishes are superior to the old ones. For example, they exhibit seven times more abrasion resistance, are more resistant to chemicals, solvents, and scratches, and have a smoother finish. All these performance gains are obtained using a material that releases no VOCs.

Justrite Manufacturing—Mattoon

Justrite makes containment systems for flammable and hazardous materials. They invested over \$250,000 to switch to powder coating for their safety cans. As a result, their paint waste and VOC emissions dropped to zero. Justrite now produces a better product at a lower cost and no longer has to buy, store, and dispose of hazardous materials.

Eaton Corporation—Lincoln

Eaton has also switched from dip coating to electrostatic powder coating. It has reduced VOC emissions by 70,000 pounds a year and waste paint by 3,000 gallons a year. The switch has provided the additional benefit of eliminating the need for 1,1,1-trichloroethane, zinc phosphate, and hexavalent chrome sealer.

The Interlakes Companies, Inc.—Pontiac

Working with their paint supplier, Interlake eliminated toxic lead and chrome from their paint without sacrificing the high quality finish of its storage rack products. Interlake improved operations in the paint department and cut paint waste by 90% while reducing employee exposure to the toxic metals. Overall, Interlake has cut its volume of hazardous waste in half and its waste disposal costs by \$189,000, or 79%, over 4 years.

Harris Corporation, Broadcast Division—Quincy

Harris Corporation had been using methyl ethyl ketone (MEK) as a paint reducer for more than 20 years. It is cheap, easy to use, and can be used as a clean-up solvent. However, MEK is on the EPA's

list of targeted hazardous air pollutants. The company, therefore, tried Polane. Though it improved the paint finish, Polane cost an additional \$12,500 per year.

The increase in raw material expenditure was offset by better paint management. The company had been producing one drum of waste paint a week mostly because they were mixing too much paint for each job. By eventually controlling the amount of paint mixed, the company now produces a drum of waste paint every 3 or 4 weeks. Although they have reduced their annual waste drums, the disposal costs remain the same because the new waste is heavier, the company has saved \$36,000 a year in paint purchases.

Navistar International–Melrose Park

Like the Harris Corporation, Navistar stopped using methyl ethyl ketone in its paint. In 1991, Navistar saved \$280 per drum in waste disposal costs, for a total of \$32,000 for the year.

Chrysler Corporation–Belvidere

Because Chrysler started using more galvanized metal (zinc plated) in its car bodies, it no longer needs to apply zinc-rich primers. This move saved the company \$7,000 and eliminated 150 gallons of waste paint. The company received a Governor's Pollution Prevention Award in 1992 and 1993 for this and other pollution prevention achievements.

Today the company is also using more water-borne paints in its Neon model production line. Both VOC emissions and waste paint totals are down. Chrysler is also drying its paint sludge to 98% solids making it fit for use in road asphalt. This saves landfills 1,300 cubic yards of sludge a year.

Caterpillar, Inc.–East Peoria

Caterpillar has also found an alternative solution to paint sludge. The company formed a team to see what could be done to minimize the paint sludge the plant produced. The team was able to make a paint from the sludge that passes accelerated corrosion tests. The company has also expanded the uses of the paint, from painting simple line

markings to painting bins and interior walls, and is working with Moline Paint Manufacturing Company to develop better coatings. Caterpillar used to send out 32,000 gallons of sludge for disposal; now it sends out none.

Case Corporation–East Moline

Case has substituted all paints containing lead and chrome to coatings free of heavy metals, reducing 150,000 pounds of hazardous waste annually and has continuously upgraded paint technologies to reduce solvent content and increase transfer efficiency. These modification reduced SARA 313 emissions by 51% per year.

Hevi-Duty Electric–Mt. Vernon

Employee suggestions helped eliminate enamel and other high VOC-based paint. The company worked with suppliers to eliminate all solvent-based paints in five spray booths. Through continuous reformulation of the coatings, the supplier came up with new water-based green and gray paints that reduced VOCs by approximately 60%. This provided employees with a safer breathing environment, reduced annual volatile organic material air emissions by 15.64 tons per year, and saved \$890 per year on respirators and other personal protective equipment.