

POLLUTION PREVENTION

IN RHODE ISLAND

Case studies of the Rhode Island On-Site Technical Assistance Program

Textile Printer Recycle of Wastewater \ Pigment Paste

Silk screen printer eliminates potential landfill discharge by reusing pigment paste.

Industry \ Contact

SIC Code: 2291 Textile Printer, Rhode Island.

Contact: Textile Grant Company

Technology Description

The company is engaged primarily in the silk screen printing of textiles for aprons, towels and kitchen linens. The print facility employs approximately 100 people.

Waste pigments are generated during the silk screen operation due to miscalculation of paste consumption and color shop production. Residual paste contained in feed lines to the print machines adds to the waste stream but is inherent to the operation. The pigments are composed of water, binders, latex, ammonia, and virgin pigments. The viscosity of the biodegradable pigments ranges from 15,000 to 30,000 cp and must be pumped using air operated diaphragm pumps.

Prior to 1996, the company had stockpiled its pigment pastes in its warehouse for future non-hazardous landfill disposal. The company contacted URI's Center for Pollution Prevention asking how it could minimize the volume of waste. With the technical assistance of URI's staff, the company purchased and installed a color reuse system. Waste pigment paste is pumped through a y- strainer and into a large 55-gallon drum with similarly colored paste. The mixture is blended and reshaded with virgin pigments to be used in future print jobs. Compromising the print quality by using excess paste was a concern for management. No print seconds have been generated due to the reuse of excess pigment paste since the project's inception.

Feedstock Materials

Approximately 300 5-gallon pails of various shades of pigment paste, annually

Wastes

Potential for disposal of 1500 gallons of waste paste, annually

Costs

Pump strainer: \$770

Operation \ Maintenance

Labor: \$12,000/year

Savings

225 5-gallons pails/year: \$4,500/year

6 pails per day generation: \$15,000/year

Payback Period

Immediate

Impact

Implementation of a color reuse system has eliminated a potential landfill disposal. The facility benefited from an immediate payback on its investment. Also, production quality has not suffered from the use of excess pigment.