POLLUTION PREVENTION

IN RHODE ISLAND

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

Boat Builder
Acetone

Fiberglass boat builder switches solvents from acetone to Shipshape Resin Cleaner and Thermaclean Gun Flush and implements solvent reclamation.

Industry \ Contact
SIC Code: 3732 Fiberglass Boat Builder, Rhode Island
Contact: RI Port Authority Marine Trade Pollution Prevention Research Project
Client #5

Technology Description
The Company manufacturers fiberglass sail boats from 20' to 45' long. The Company has 1 part-time and 38 full-time employees.

The cleaning operation for fiberglassing tools and spray guns utilized approximately 55 gallons of acetone per week. As much as 50% of the acetone was lost due to evaporation, and this volatile substance (flashpoint of –15 degrees Fahrenheit) constituted a static ignition hazard in the work area. Waste acetone was shipped through a hazardous waste hauler.

The Company switched to Shipshape, an NMP (N-methyl pyrrolidone) based solvent with a flashpoint of 201 degrees Fahrenheit for general cleaning. For gun flushing, Thermaclean, another NMP-based solvent is used. Both solvents are recycled via a commercial recycling service, Engov, which conducts distillation on-site. Very little Shipshape and Thermaclean are lost due to volatilization, and the Company estimates a 90% recovery rate.

Feedstock Materials
2,250 gallons per year of virgin acetone purchased. 1,260 gallons per year of waste acetone manifested.

Costs
No equipment purchase required.

For more information, contact: RI Department of Environmental Management, Office of Technical and Customer Assistance, 235 Promenade Street, Providence, RI 02908    Phone: (401) 222-6822
**Operation \ Maintenance**

No change from acetone usage.

**Savings**

2,520 gallons of annual acetone purchase ($8,820) vs. 80 gallons of Shipshape and 40 gallons of Thermaclean purchased annually ($2,225).

1,260 gallons of waste acetone manifested per year ($2,860) vs. 80 gallons of Shipshape and 40 gallons of Thermaclean still bottom residue manifested annually ($568).

990 gallons total of Shipshape & Thermaclean reclaimed on-site by a commercial recycler at an annual cost of $3,960 ($4.00 per gallon).

Six gallons of Shipshape Add Back Package added to reclaimed Shipshape per year ($200).

Acetone usage yearly costs: $11,500  
Shipshape/Thermaclean yearly costs: $6,953  
Difference: $4,547

**Impact**

The Company has eliminated the use of 2,520 gallons of acetone and the associated waste disposal costs. The ignition hazards associated with widespread acetone usage have also been removed. Because of reclamation, purchase amounts and total costs of Shipshape and Thermaclean are far less than that for acetone, and waste disposal costs are subsequently lower as well.