

# 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 manufactures 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.

## **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.