

POLLUTION PREVENTION

IN RHODE ISLAND

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

Die Caster Mineral Spirits

Die caster eliminates use of mineral spirits for parts cleaning.

Industry \ Contact

SIC Code: 3369 Precision Zinc Die Caster, Rhode Island.

Contact: Company #6

Technology

The company is engaged in the production of precision zinc die casts. The average employment of the company is 10.

The company originally used mineral spirits to pre-clean zinc parts – prior to the vibratory process- that were heavily contaminated with oil and ash. Approximately 90 % of the zinc die casts were satisfactorily cleaned with Oakite M3 aqueous cleaner. The remaining 10% of the zinc die casts required more vigorous cleaning with mineral spirits. The mineral spirits was supplied by an outside service contractor. This service included a 30-gallon drum, the wash basin, and the replacement of used mineral spirits with fresh chemical every six weeks. After consulting with DEM's Pollution Prevention Section, the company found that by increasing the concentration of the aqueous cleaner the need for mineral spirits could be eliminated. A more concentrated aqueous cleaning solution sufficiently cleaned all zinc parts prior to the vibratory process without any adverse affects on product quality.

Feedstock Materials

30 gallons of mineral spirits replaced every 6 weeks by Safety-Kleen

Wastes

Approximately 30 gallons of mineral spirits removed every 6 weeks by Safety Kleen (A small amount of mineral spirits is lost to evaporation).

Costs

None

Operation \ Maintenance

None

Savings

Mineral spirits was eliminated from the process for a total annual savings of \$1,015.

Payback Period

Immediate

Impact

The company has eliminated the use of mineral spirits to pre-clean die cast zinc parts prior to the vibratory process. The company has found that, by simply increasing the concentration of the aqueous soap used to clean all parts, mineral spirits was no longer required to pre-clean the heavily contaminated zinc parts.