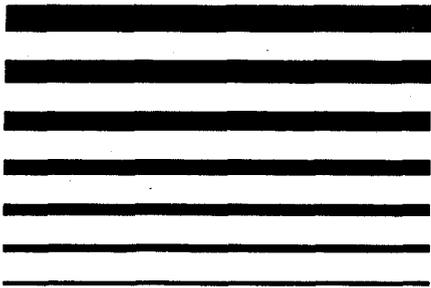


Pollution Prevention



GE Medical Systems

Replacing 1,1,1-Trichloroethane
with Citrus-Based Solvents

case study

Industry/SIC Code

Medical Diagnostic Imaging Equipment/3679

Process

Parts Degreasing

Type of Waste

1,1,1-Trichloroethane (TCA)

Strategies

Material Substitution - Citrus-based (terpene) solvent
Process Modification

Background

GE Medical Systems, headquartered in Waukesha, Wisconsin, manufactures medical diagnostic imaging equipment. General Electric has a well established corporate environmental program known as POWER (Pollution, Waste, & Emission Reduction).

Workers at GE Medical Systems; 3000 North Grandview Plant in Waukesha degreased parts with the solvent trichloroethane (TCA). Workers sprayed the TCA on to the parts to clean them. Degreasing by this method resulted in fugitive TCA air emissions.

Motivation

Reducing fugitive TCA emissions was the primary motivation for GE Medical Systems.

Changes Implemented

GE Medical Systems replaced the solvent TCA with a citrus-based (terpene) cleaner. In addition to being non-hazardous, the terpene cleaner can also be recycled.

Problems Encountered

None

Material/Energy Balance

Original Process

Feedstock

1,1,1-Trichloroethane (TCA) 800 gallons/year

Waste

TCA air emissions

Disposal

Fugitive air emissions

Pollution Prevention Approach

Feedstock

30 gallons virgin citrus-based solvent must be purchased each year. The remainder of citrus-based solvent needed is recycled solvent.

Waste

Spent solvent

Disposal

The citrus-based solvent is recycled.

Economics

Capital Cost

None

Operating/Maintenance Cost

No change

Payback Period

Not applicable

Company Address

GE Medical Systems
3000 N. Grandview Blvd.
Waukesha, WI 53188

Contact Person

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***Additional Publications
available from
Pollution Prevention
Clearinghouse****

Aqueous Industrial Cleaning Chemicals
DNR Publication #SW-147-91

Aqueous Parts Washing Equipment
DNR Publication #SW-148-91

CFC Alternatives: Aqueous Cleaning

Northern Precision Casting Case Study
DNR Publication #SW-161-92

***Pollution Prevention
Resources***

University of Wisconsin-Extension
Solid & Hazardous Waste Education Center
610 Langdon Street - Room 529
Madison, WI 53703-1195
Phone: (608) 262-0385

*Pollution Prevention Clearinghouse
Wisconsin Department of Natural Resources
Hazardous Waste Minimization Program - SW/3
P.O. Box 7921; Madison, WI 53707-7921
Phone: (608) 267-9523 or (608) 267-3763



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