

Solvent Distillation at EDCO Saves Money, Reduces Waste, and Makes Cleaning Quick and Efficient!



"I highly recommend anyone using solvent cleaning chemicals to recycle them."

- Michael Bergeson, EDCO Plant Manager

Background:

EDCO is the largest manufacturer of residential steel roofing and siding in the U.S. It is also among the oldest steel/metal companies in America. EDCO was founded in 1946 by the Edwards family. Today, EDCO produces steel roofs, steel siding, aluminum soffit, steel fascia, shingles, gutters, and other siding accessories. The company uses eco-friendly steel that is 25% - 30% recycled content, and aluminum that is 90-95% recycled content. Additionally, the metals used in their roofing products are 100% recyclable. Most EDCO products are EnergyStar rated by the Environmental Protection Agency and U.S. Department of Energy. Energy Star ratings show product efficiency and annual fuel utilization efficiency, providing information on how EDCO products will save energy by reducing heating costs. Additionally, EDCO is able to install their steel roofing over an existing roof, saving the asphalt from becoming waste, and improving insulation.

Process:

The major solvent using operation running in the EDCO facility in Hopkins is a paint line where galvanized steel is washed, painted and dried before being processed into siding and roofing. When the color or type of paint needs to be changed on this line, solvent is used to clean the paint tins, pumps, and rollers. This cleaning process uses solvent which is then disposed of as hazardous waste. EDCO has chosen to install a solvent distillation machine to allow for the reuse of this solvent. Solvent distillation reduces waste by separating good solvent from waste material. The good solvent is then transferred to a barrel and used for continued cleaning. This process reduces the amount of solvent EDCO needs to purchase, and it also decreases the amount of waste solvent generated, which saves the company money on waste disposal.

Motivation:

EDCO was motivated by a variety of factors to reduce their solvent. "Reducing waste is the right thing to do; it is good for the environment, and it saves money." – Michael Bergeson, EDCO Plant Manager. Installing a solvent distillation machine resulted in a payback period of 2 years on the \$25,000 investment, along with the environmental benefits associated with using less solvent and producing less waste.

Reduction Process:

In December of 2012, the EDCO facility in Hopkins installed the 30 gallon CBG Biotech solvent distillation machine. This machine has allowed EDCO to decrease their cleaning solvent use by 51.6% in 2013 alone. It makes the process of solvent cleaning significantly less wasteful, as used solvent is now distilled and recycled. This allows EDCO to get maximum value out of their solvent, and reduces their waste processing costs. It also has made the cleaning process faster, as employees are no longer overly concerned about solvent conservation; operators can use as much solvent as they need to clean quickly and efficiently, knowing that the excess solvent will be reused.

Furthermore, EDCO uses a thermal oxidizer to destroy the solvents released within their painting process, combusting them into carbon dioxide and water. The thermal oxidizer at EDCO was last tested to be running at a 99.3% destruction efficiency. Paint fumes from the paint drying process, as well as those from the paint application room are vented into the thermal oxidizer, where the vast majority of the VOC's produced by this painting line are then destroyed.

EDCO has also recorded significant toluene waste reductions over the past 10 years. From 2001 to 2012, their toluene waste is down 47.2%. This reduction is attributed to their paint supplier reducing the toluene content of the paint EDCO purchases.

Sunoco 150 reductions from the distillation machine, and toluene waste reductions from more environmentally friendly paint can be seen below:

YEAR	SUNOCO 150 (GAL)
2012	1275
2013	617
% REDUCTION	51.6%

YEAR	TOLUENE WASTE (LB)
2001	28020
2012	14802
% REDUCTION	47.2%

