



PROJECT BRIEF

Specialty Metals Producer Optimizes Cadmium Recovery, Leveraging SAMCO Ion Exchange Technology for Wastewater Treatment

PROJECT OVERVIEW

When a specialty metals producer in the Midwest needed an efficient solution for capturing cadmium from its wastewater streams, it looked to SAMCO for an ion exchange (IX) solution to maximize its resources.

OBJECTIVE

Recover cadmium from wastewater streams resulting from solar panel recycling processes. Project specifications:

- 10,000 GPD process rate

SCOPE OF SERVICE

SAMCO delivered an IX-based recovery and purification system, with services encompassing detailed process, mechanical, and electrical design and engineering, controls integration, and system fabrication.

CHALLENGES

- Complex contaminant streams
- High-purity cadmium solution critical for production

SOLUTION

In line with the client's needs, SAMCO designed and delivered an IX system for treatment of wastewater resulting from solar panel recycling operations. To maximize yields, the design included a pretreatment system for pH adjustment, as well a dual IX pressure vessels arranged in lead-lag configuration. Making use of a prepackaged, skid-mounted design, SAMCO was able to simplify and expedite delivery and installation, while included programmable logic controllers (PLC) ensured minimal operational demands through automated process monitoring and control.

TECHNOLOGY

SAMCO delivered a single packaged skid unit, including:

- IX pressure vessels and internals
- Auxiliary tanks
- Effluent and influent pumps
- Multimedia filters
- Instruments and valves
- PLC controls

OVERVIEW

Industry
Chemical

Location
Midwestern US

Objective
Recover cadmium from solar panel recycling wastewater

Solution
10,000 GPD Ion Exchange System for Wastewater Treatment