



## CASE STUDY - CONTINUOUS MIXER/REACTOR

### The Process Challenge

A major international chemical manufacturer needed to replace an existing reactor with one that could double capacity and reduce maintenance. The process continuously blended a dry granular material with a hot strong acid solution and discharged it horizontally into a kiln. The chemical reaction allowed the evolution of an acid gas that could not mix with air.

### The Solution

S. Howes proposed a specially modified version of the C-121 continuous mixer with standard, independently adjustable, replaceable paddles along with several adaptations:

- Alloy-20 construction to stand up to the high temperature acid
- Replaced the traditional U-style body with a Tubular body to eliminate covers
- Eliminated discharge end bearing to allow direct discharge into the kiln
- Supported shaft with twin drive-end bearings and custom hanger bearing
- Custom mechanical shaft seal using engineered resins selected for compatibility
- Incorporated spray nozzles to provide highly efficient distribution of the acid

### The Result

S. Howes successfully achieved the goals of the customer.

- The desired increase in production rate was achieved using the combination of the spray nozzles with the superior mixing performance of the S. Howes traditional and time-proven design.
- The customer can now replace individual paddles with basic tools instead of continually swapping entire repaired agitator assemblies.
- The mixer actually had a slightly smaller footprint and required no increase in power to achieve the desired results.



Photos and drawings are not intended to show or suggest use or non-use of any operator protection systems



Member



PROCESS EQUIPMENT  
MANUFACTURERS' ASSOCIATION

Phone: (716) 934-2611  
Toll Free: (888) 255-2611  
Fax: (716) 934-2081  
sales@showes.com

S. Howes, Inc.  
25 Howard St.  
Silver Creek, NY 14136  
www.showes.com