

# **Kastech® AL750**

*Investment Removal Process for Aluminum Castings*

## **I: INTRODUCTION**

With the introduction of Kolene's Kastech AL750 process for leaching ceramics from aluminum investment castings, foundries now have the potential to produce more complex and sophisticated aluminum castings. Utilizing molten salt to leach silica-based shell and core residues, delicate castings can now be produced that were not possible to clean with mechanical methods alone.

## **II: BENEFITS**

The benefits of salt bath leaching have long been recognized for cleaning ferrous and alloy castings. While mechanical cleaning has been effective in removing much of the shell and core, salt bath leaching provides the final cleaning necessary to produce quality castings. The advantages of salt bath processing are amplified when cleaning aluminum castings that are susceptible to damage from aggressive mechanical cleaning.



Castings courtesy of Aerotec Alloys - Norwalk, California

Cleaning your aluminum castings with AL750 produces potential benefits on a number of different levels:

- produce more complex castings with respect to internal passages where ceramic residues have traditionally been a problem, thereby expanding your potential market

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**II: BENEFITS** (continued)

- since salt bath cleaning is a simple immersion process, multiple castings can be processed at one time, effectively multiplying production throughput; this contrasts favorably with mechanical or water blast methods which are commonly one-at-a-time discrete operations
- provides you with a valuable new tool which allows cleaning process optimization between traditional sand and water blast, and final scavenging with molten salt. Use each to its best advantage and optimize quality, throughput, and profits
- allows the potential for purely chemical ceramic removal from extremely fragile castings where even controlled water blast may cause unacceptable distortion and/or damage

AL750 enables you to pour castings that you couldn't clean before, at higher production rates, while providing improved quality and increased profit potential.

**III: PROCESS EQUIPMENT**

Kolene Corporation has been engineering and designing salt bath furnaces for nearly 70 years. The equipment is sized based on casting dimensions and required production throughput. Depending on the overall dimensions of the required process line, equipment ranges from small unitized equipment shipped on a common steel frame, to large discrete modules that are interconnected in the field.

The basic equipment consists of a salt bath furnace, byproduct or sludge dumping zone, and rinse tanks. The multiple tanks are located under a common hood structure which is power ventilated to contain any steam that is formed during the water rinsing of hot workloads. To complement AL750 molten salt, Kolene recommends Kastech Alpha 400 for adjusting and buffering the pH of rinse waters during casting processing.



*Kastech® AL750 Case History*  
*Carley Foundry • Blaine, Minnesota*

2008 AFS/ECS "Casting of the Year" Winner



equipment footprint:	30' long X 8' wide X 16' tall
usable work envelope:	2.5' long X 2.5' wide X 3' deep
workload capacity:	500# / hour gross (castings + fixture + ceramic)

- 60% reduction in per-piece manual blast times
- 20% of new business directly attributable to AL750 cleaning process
- also used for final cleaning on select ferrous castings
- approximate increase in throughput has been 5-10%
- total savings on those parts processed in AL750 varies from 10-60%

***“The Kastech AL750 process has improved our shell removal efficiencies and allowed us to win more complex casting work.”***

*--- Mike Carley*



For further information about Kastech AL750 or to arrange for complimentary sample processing of your aluminum castings, please contact Kolene Corporation.

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