

Salt Partners

Salt Partners Ltd.
Carl Spitteler Str. 102
CH-8053 Zurich
Tel.: +41 (44) 422 26 82
Fax: +41 (44) 422 26 83
www.salt-partners.com

MD Recycling salt recovery plant goes on stream

A new flux salt recovery plant was commissioned at MD Recycling, Inc. in Midway, Tennessee, USA.

MD Recycling operates a secondary aluminum smelting facility with one reverberatory and two rotary natural gas fired furnaces that recover aluminum from scrap and waste. Molten flux salts, mainly sodium chloride (NaCl) and potassium chloride (KCl), float on molten aluminum, protecting the metal from oxidation and collecting impurities. After the aluminum is poured off, the salt cake is discharged.

Previously, fresh flux salt mixtures were used and the salt cake was sent for landfill. Recently, the price of flux salts and the cost of landfill disposal have multiplied. Besides natural gas and electric power, flux salts and landfill disposal account for a significant percentage of the cost of running rotary furnaces. Substantial savings can be achieved by cutting the cost of flux salts and salt cake disposal. In addition, land filling of salt cake became an environmental issue and the industry is facing landfill closures.

Responding to this challenge, MD Recycling built a flux salt recovery plant. In the new plant, hot salt cake is cooled, crushed and screened to recover aluminum and iron. Crushed salt cake is desalted with recycled condensate and flux salts are recrystallized by thermal evaporation. Recovered aluminum metal and flux salts are returned to smelting.

HYDROSAL[®] hydroextraction process was selected for desalting. This counter-current process achieves high desalting efficiency and high brine concentration, minimizing energy consumption for evaporation and crystallization. The fully desalted slag is used as cement additive. It is virtually a “zero discharge” process.

L. Haberny Co., Inc., Chagrin Falls, Ohio, USA, built the plant. Salt Partners provided the proprietary technology and basic design, optimized the plant operation and tested the process performance. The tests proved that all performance criteria, such as production capacity, quality and consumption figures, fulfill expectations.



Salt Partners HYDREX-4 hydroextractor for slag desalting co-invented by Vladimir M. Sedivy, Patent No. CH690840

Salt Partners are an independent firm of consultants and engineers, active in the field of salt production, processing and hypersaline biotechnology. Salt Partners' reputation is based on almost 4 decades of experience with projects implemented worldwide.

For further information contact:
vladimir.m.sedivy@salt-partners.com



Left to right: Don Johnson, President, MD Recycling; Dr. Vlad Vanek, Salt Partners Representative; Mike Gill, General Manager, MD Recycling; Vladimir M. Sedivy, President, Salt Partners; Dale Haberny, President, L. Haberny Co. In the background: Evaporation, crystallization, hydroextraction and salt cake processing units.