

Sulfuric Acid Recovery Systems

Low Temperature Systems

Sustainable Solutions for Industry



Beta's sulfuric acid recovery process combines the best in environmental technology with the best return on investment. We provide sustainable solutions to meet both environmental & financial goals.

We design our systems with unique features such as automatic cleaning, efficiency monitoring, & modular maintenance. Our experience is reflected in our unsurpassed operating software which is customized for every installation.

Maintains pickle tank

Beta Control Systems, Inc. developed the Sulfuric Acid Recovery System to answer the waste disposal and process control needs of industry. The acid pickle solution becomes inactive when the iron, copper, or other metal impurities reach the point of saturation. As the impurities increase in the pickling solution, the pickling action decreases, thus slowing down production or potentially contaminating the process. The Sulfuric Acid Recovery System continuously recycles acid by removing impurities and maintaining a high quality, high speed pickling solution. The impurities are collected as crystals and are usually sold.



Minimizes environmental impact

Reduces acid consumption

Maintains quality pickling acid

Quick return on investment

Long life expectancy

Compact design

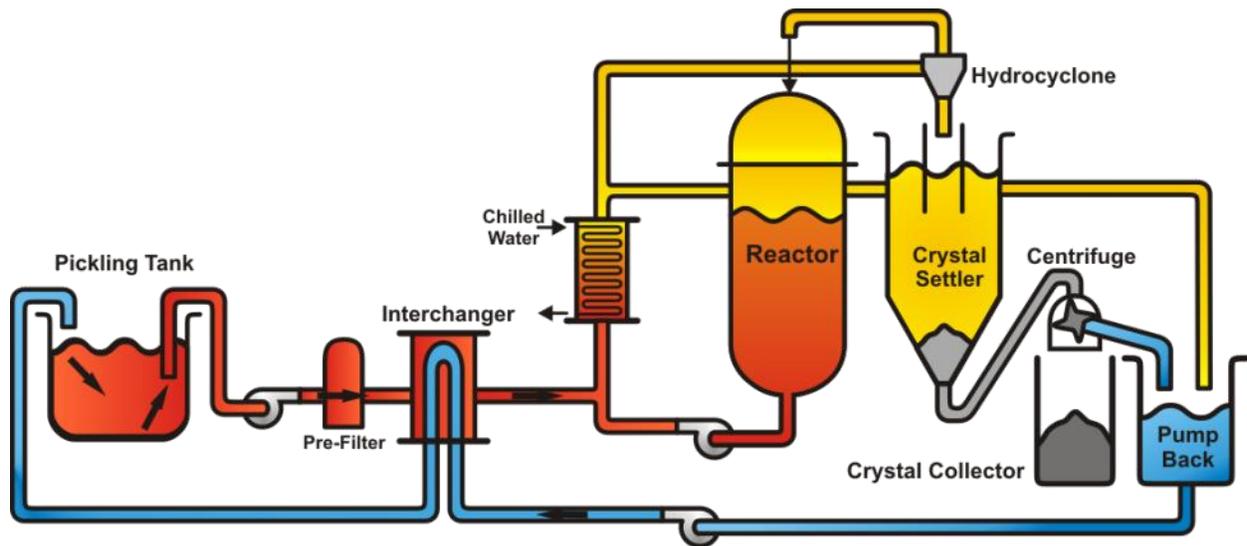
Unique heat exchange saves energy

15 minute self-cleaning cycle

Marketable crystal product

Microprocessor control





Operation

Pickling acid is fed through a Pre-filter to remove gross particles. The filtered solution enters an Interchanger where the temperature is reduced by chilled acid traveling counter-currently through the Interchanger. This reduces the energy demand by greater than 30%.

The pre-chilled inactive, metals-laden acid then enters the Reactor where the acid is blended with the circulating chilled acid. The external chilling loop uses a centrifugal pump to force the acid through a specially designed heat exchanger and return the super-chilled solution to the Reactor. The pump maintains a violent and thorough agitation to minimize the formation of crystals on the surface of the exchanger.

A portion of the super-chilled acid solution from the loop is diverted through a Hydrocyclone to the Crystal Settler. The crystals accumulate in the conical bottom of the tank and are pumped to a Centrifuge to yield a mostly dry product. The solution without iron crystals rises to the overflow port which cascades to the Pump Back station. It is pumped back to the pickling tank through the Interchanger where the recovered, chilled acid is heated by the hot, metals-laden acid coming in. Energy is utilized in each direction, significantly reducing the operating cost.



Sustainable Solutions

Beta designs, manufactures, installs, and supports its own resource recovery equipment. We provide cost effective, robustly engineered systems that recover your assets and help you attain your company's environmental and financial goals.

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