SULFURIC ACID ANALYZER

Continuous measurement 0 - 100 wt% H_2SO_4

PROCESS OPTIMIZATION PRODUCT CONCENTRATION PROCESS SAFETY

www.southforkinstruments.com
info@southforkinstruments.com

H_2SO_4 DETECTION

BENEFITS

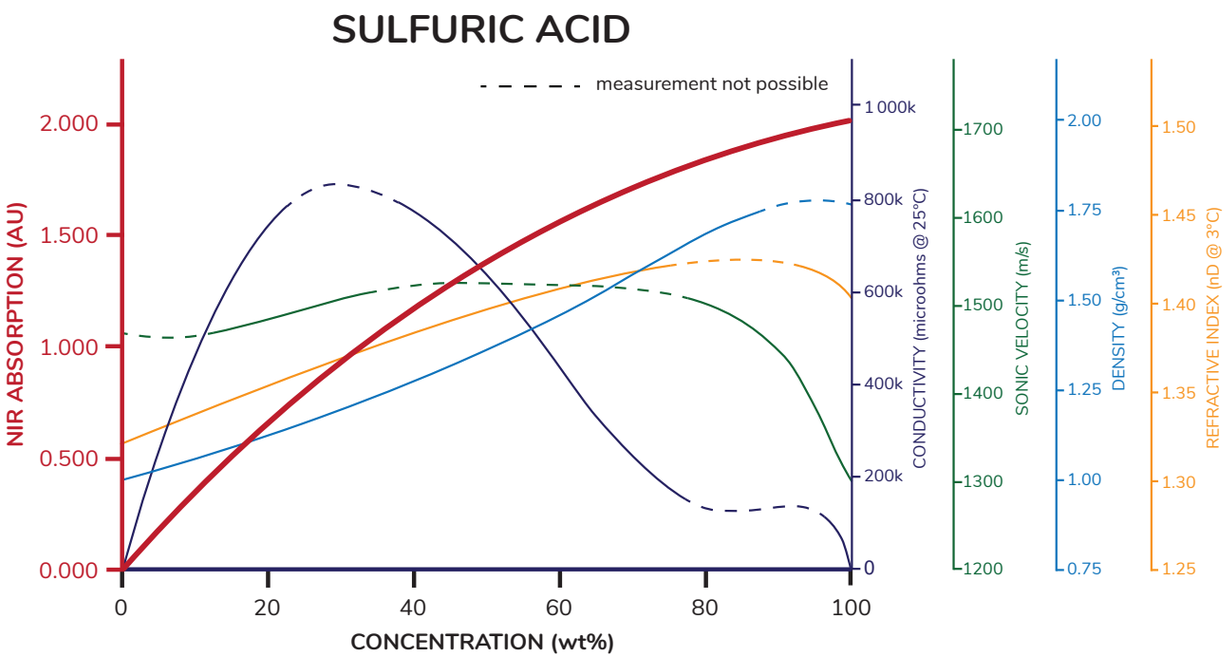
01 / 0 - 100 wt% sulfuric acid measurement over the entire concentration range.

02 / Measurement resolution: ± 0.01 wt% (80 - 100%), ± 0.05 wt% (0 - 100%).

03 / Real-time continuous measurement.

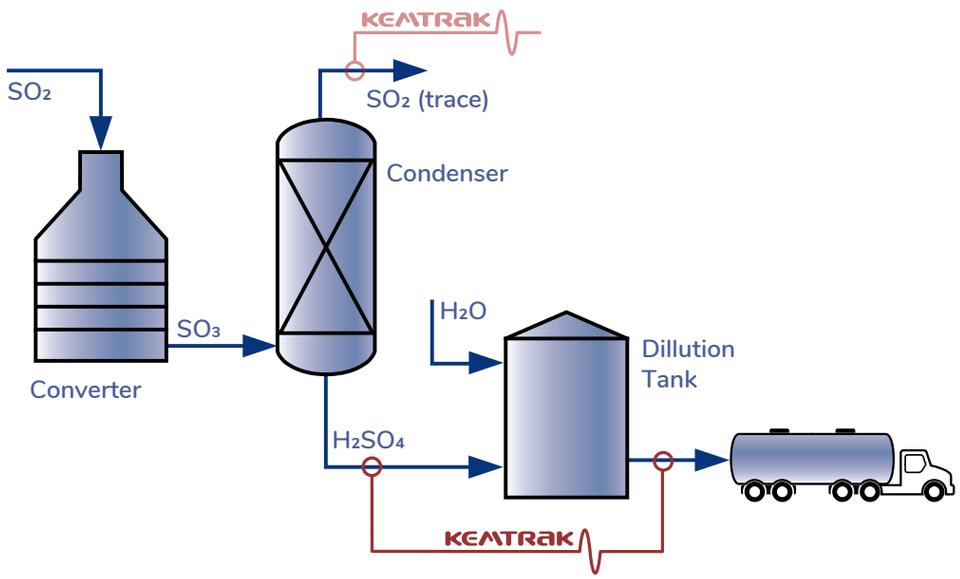
04 / No drift and low maintenance. Robust UV-LED process analyzer with wetted parts constructed from corrosion-resistant PTFE.

05 / Pre-calibrated with effortless validation using a verification accessory.



The Kemtrak DCP007-NIR sulfuric acid analyzer is the only in-line industrial analyzer that can measure from 0 to 100 wt% sulfuric acid. Other techniques have complex calibrations with limited measurement ranges, areas of low (or no) resolution and response curves that invert.

The Kemtrak DCP007-NIR sulfuric acid analyzer assures process safety by never reporting the same measured value for different concentrations.



Optimize the condensation process of H_2SO_4 generation, control the desired concentration of the product and increase process safety.

Sulfuric acid is one of the most widely produced chemicals globally, valued for its versatility in manufacturing various products. However, due to its highly corrosive nature, it requires precise handling, especially when monitoring its concentration before and after dilution processes. Ensuring accurate measurement across the full concentration range is crucial, and having a single analyzer capable of covering this entire range is a necessity.

Traditional strategies for measuring sulfuric acid concentration have required multiple analyzers using different measurement techniques to cover the full range of 0 to 100% because their measurement curves exhibit “flat spots” where output does not change with changing concentration. Worse, these curves invert, resulting in the possibility of two different concentrations for the same analyzer output. For example, both the refractive index and density techniques exhibit very poor or no resolution at high concentrations. In contrast, the Kemtrak sulfuric acid analyzer stands out as the only device capable of measuring the entire 0-100% range, simplifying the process of analyzing both concentrated and diluted sulfuric acid solutions.

The Near Infra-Red (NIR) absorption method adopted by the Kemtrak DCP007 analyzer is an effective and precise analytical technique for determining sulfuric acid concentration in water. This method is widely used in industries such as chemical manufacturing, textiles, and pharmaceuticals due to its instantaneous and accurate results.

The Kemtrak NIR acid analyzer utilizes advanced high-performance, long-life LED technology, which offers exceptional stability and consistency over time, eliminating the need for periodic recalibration and adjustment for measurement drift. The analyzer measures at two optical wavelengths simultaneously, ensuring precise and reliable readings that are unaffected by window fouling, entrained particulates, or suspended solids. The DCP007 provides continuous in-line concentration analysis you can depend upon.

APPLICATIONS

01 /

Chemical Industry

Precise monitoring of sulfuric acid production using processes such as Double Contact Double Absorption (DCDA) and Wet Sulfuric Acid (WSA) is efficiently achieved by using Kemtrak sulfuric acid analyzers in applications such as the drying tower feed and return lines, the intermediate absorption tower, and before and after the dilution unit.

02 /

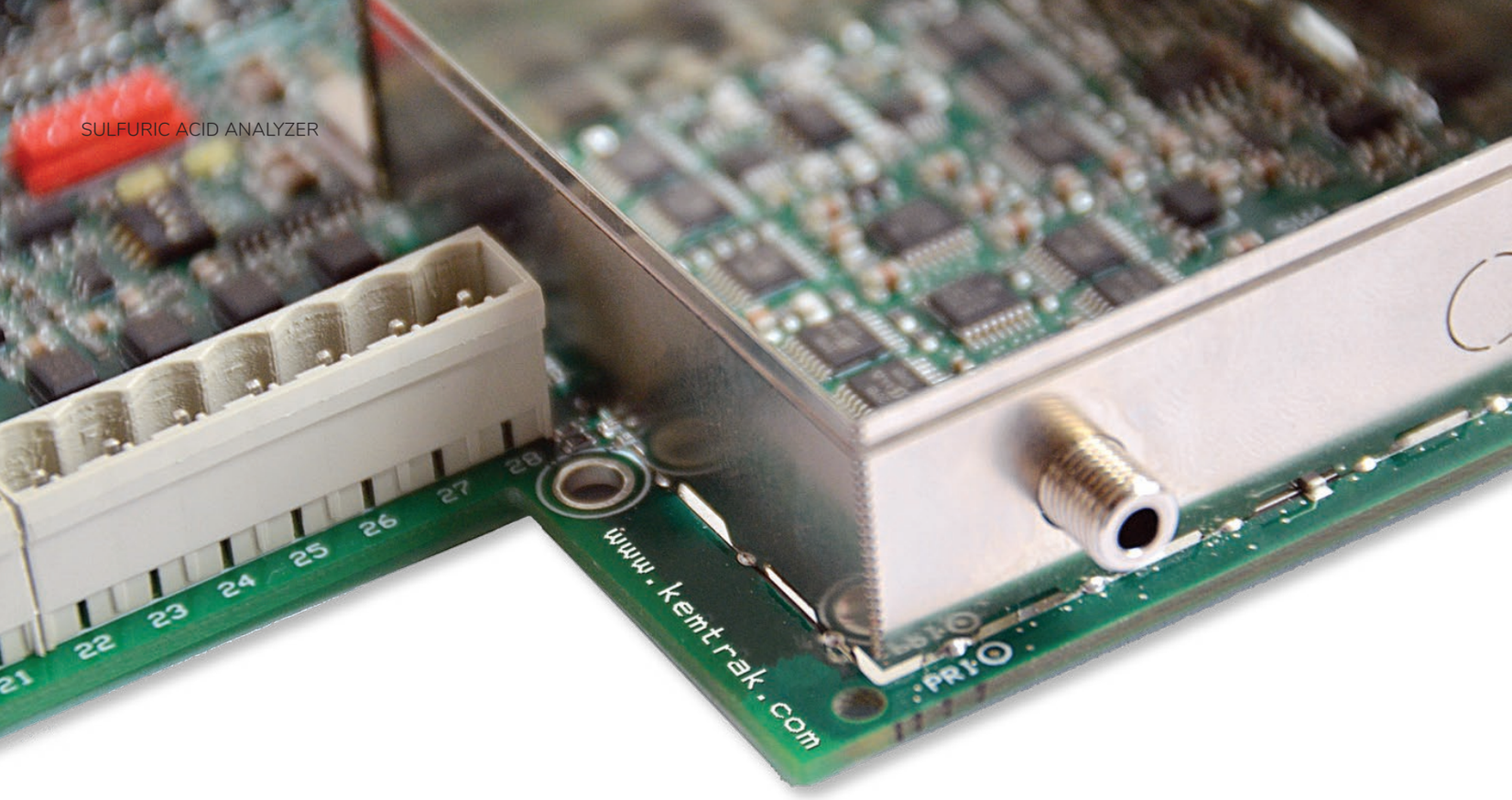
Textile industry

Caprolactam is produced in megaton quantities annually and is a key building block in the modern polyamide fiber industry, serving as a primary chemical for manufacturing Nylon 6 fibers. Significant amounts of sulfuric acid are used in the production process, and precise concentration monitoring can be achieved using a DCP007 sulfuric acid analyzer installed at the feed line.

03 /

Pharmaceutical Industry

Sulfuric acid serves as a catalyst in the production of paracetamol, and precise control of its concentration is crucial for ensuring product quality and process efficiency. Concentration can be efficiently monitored using a Kemtrak sulfuric acid analyzer.



ABOUT KEMTRAK

Founded in 2006, Kemtrak is the industry leader in LED-based industrial photometers. Low optical power and long lifetime provide dependable products with the highest performance and lowest cost of ownership available.

The Kemtrak 007 analyzer platform is a robust industrial analyzer designed to accurately measure and report specific properties of liquids and gases in-line and in real time. Based upon either absorbance, light scatter, or fluorescence, Kemtrak photometers are used in a wide range of industrial applications for measuring parameters like color, concentration, turbidity, and solids concentration.

Kemtrak is located in Stockholm, Sweden. Kemtrak products are distributed globally. No matter where you are in the world, Kemtrak has a motivated team of skilled engineers ready to help.

- Industrial liquid and gas concentration measurement
- Real-time, in-line
- State of the art with exceptional performance
- Low cost of ownership:
  - No / ultra-low maintenance
  - Long life LED light source
  - Robust and reliable
- Application experience and know-how
- Global sales and support
- ISO 9001:2015 Quality System

At Kemtrak, we believe efficient manufacturing processes are essential for a sustainable world. Our products empower our customers to increase profits by preventing or limiting waste. Kemtrak analyzers provide insight into the process enabling resources to be conserved, waste minimized, energy reduced, and harmful leaks detected.

Kemtrak technology delivers tangible, measurable, and substantial benefits. We help our customers make the transition to a greener future through process optimization.

Our philosophy is to focus on areas that are beneficial for people and the planet, and Kemtrak supports the societies where we conduct business. By leveraging the latest and greenest technologies, we ensure we are doing our best to create a more sustainable process industry for the coming generations.

TYPICAL APPLICATIONS:

1. **Gas Scrubber Optimization:** Kemtrak photometers continuously monitor exhaust gases such as ClO_2 and Cl_2 to limit harmful emissions and loss of product into the environment.

2. **Leak Detection:** Continuous monitoring of leaks is an essential part of any process and Kemtrak analyzers provide ultra-low (ppb) levels of detection.

3. **Distillation Optimization:** Reduce energy consumption in distillation processes through real time measurement of tray & distillate concentration.

4. **Centrifuge Control:** Kemtrak turbidimeters optimize separators used to remove SO_2 and particulates from wet scrubbers that clean marine exhaust gas.

5. **Interface Detection:** Kemtrak analyzers minimize product loss, process downtime, and waste through precise interface control, ensuring consistent performance at any concentration.

OUR APPROACH:

Eco-Friendly Products: Kemtrak products have a no/ultra-low service and maintenance requirement, helping companies lower their ecological footprint and reduce costs. Our products are mercury-free, comply with RoHS directives, and are made from durable materials like stainless steel.

Minimizing Carbon Footprint: Kemtrak promotes environmental awareness, has energy-efficient facilities with eco-friendly electricity, recycles waste, and encourages remote meetings and responsible travel.

Research & Development: Kemtrak invests in sustainable technologies and practices, and develops products used to create a more sustainable process industry.

KEMTRAK
Willys

Contact:

www.southforkinstruments.com
sales@southforkinstruments.com
Tel: 925 461 5059