Elessent™
MECS® TECHNOLOGIES

MECS® ACID COOLERS
ZECOR®, ANODICALLY PROTECTED & SEAWATER

MATERIALS SCIENCE, DESIGN AND EXPERIENCE DEFINE MECS® ACID COOLERS

MECS, Inc. (MECS) provides a full range of acid coolers in ZeCor®-Z, a high-performance MECS® alloy. When constructed of other alloys, MECS® acid coolers employ the Filmgard 5™ anodic protection system to control corrosion.

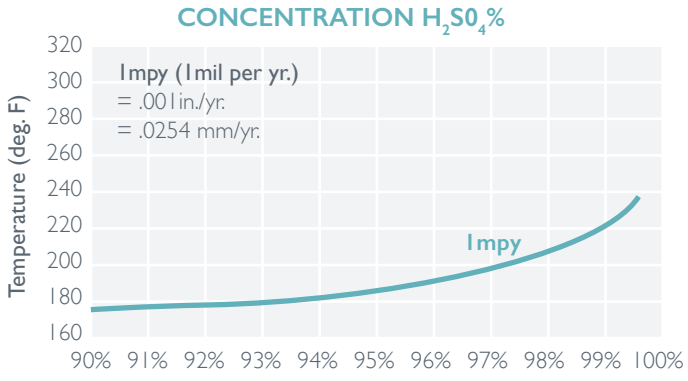
Every MECS® acid cooler is custom designed and fabricated for your acid plant's specific application. Materials of construction are selected according to process conditions to maximize the effective life of the acid cooler and to minimize life cycle costs as well as avoid unscheduled maintenance shutdowns. MECS® acid coolers are robustly designed and built to deliver the highest reliability. Every MECS® acid cooler meets or exceeds the TEMA "C" and ASME standards for heat exchanger and pressure vessels. Seasoned acid plant engineers rely on nearly four decades of MECS® acid cooler design/build experience. Only the highest-quality materials and craftsmanship are acceptable in these critical sulfuric acid processes, and MECS delivers.

FEATURES AND BENEFITS OF ZECOR®-Z COOLERS

No anodic protection required:

- Constructed using MECS® ZeCor® high-performance alloys for long cooler life
- Simple operation and low maintenance
- Corrosion rates demonstrated at less than 1 mpy (.025 mm/yr)

ZECOR®-Z ISO CORROSION CURVE



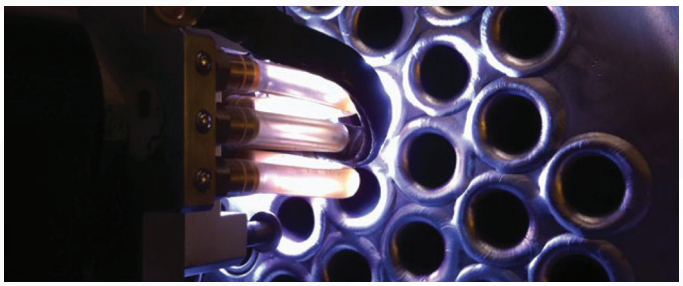
Anodically protected acid coolers:

- Employs Filmgard 5™, the newest and most advanced anodic protection system to reduce corrosion rates in ferrous metal coolers
- MECS® Filmgard 5™ system can be integrated to function off any DCS system or operate as a stand-alone system equipped with a separate HMI and PLC
- Allen-Bradley* controls and a single power-pac for high reliability in heavy-duty use

**Allen-Bradley is a division of Rockwell Automation*

SeaMax™ sea and brackish water acid coolers:

- SeaMax™ acid coolers use a proprietary duplex stainless steel; its corrosion resistance is far superior to super austenitic stainless steels on both seawater and acid sides
- It handles upset conditions better than other commonly used materials on the market
- Composition and heat treatment are tightly controlled in accordance to MECS specifications; all alloy materials are supplied by world-class mills
- The material is highly resistant to stress corrosion cracking
- Tube to tube sheet stress corrosion cracking due to high chlorides is virtually eliminated
- This material is much stronger than typical austenitic stainless steels
- SeaMax™ acid coolers are manufactured using the highest manufacturing standards and are inspected by highly experienced professional inspectors using state-of-the-art technology and equipment
- Manufacturers are strategically positioned in key geographic locations to best serve our customers



ZeCor® materials of construction and robotic weld uniformity ensure trouble-free reliability and long service life.

Elessent Clean Technologies
MECS® Technologies
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MECS® ACID COOLERS
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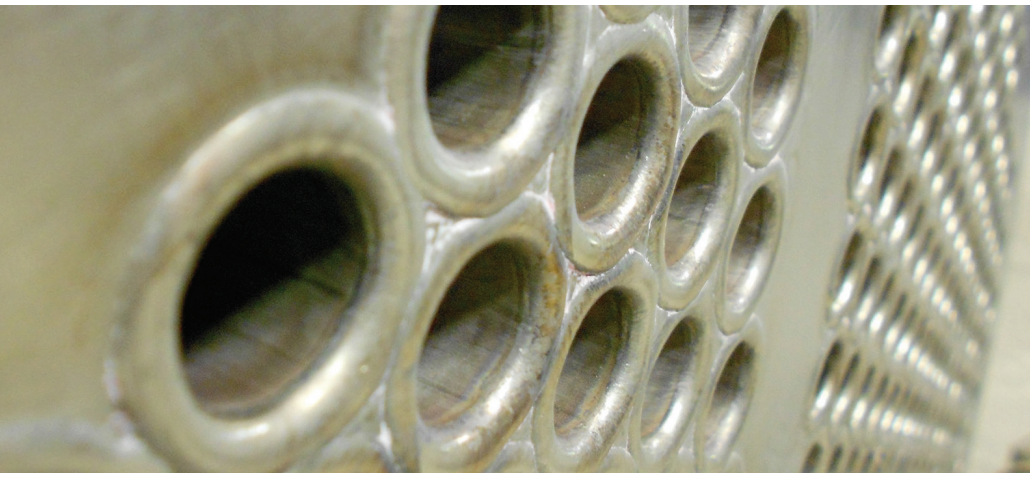
MECS QUALITY STARTS AT THE MOLECULAR LEVEL

The ZeCor® family of corrosion-resistant alloys has established the world's standard for proven performance in sulfuric acid service.

We constantly strive for the optimum design to maintain the delicate balance between performance and cost that will give you the best overall solution to your acid cooling and corrosion resistance requirements. This is our MECS quality commitment to you.



TECHNICAL SUPPORT AND SPARE PARTS

Technical service is available to all of our customers through our marketing and technical services department. Assistance for startups and turnarounds, training and maintenance service is also available. Spare parts for all of our acid coolers and Filmgard 5™ systems are shipped with short lead times, and critical parts are stocked for immediate shipment. As a technology-based company, our strength lies in providing you the best products and services available.

MECS® SULFURIC ACID EXPERIENCE —UNMATCHED WORLDWIDE

Since 1925, MECS has offered process technology and high-performance products for the sulfuric acid industry. MECS' overall acid plant design and construction experience combined with extensive corrosion R&D and workability testing has led to material improvement breakthroughs for the acid industry. To assist you in choosing these proven and reliable anodic protection technologies for your acid cooler, MECS has sales and engineering offices worldwide that can help you specify the MECS® acid cooler best suited to your needs.

GLOBAL OFFICES

NORTH AMERICA

Global Headquarters
Saint Louis, Missouri, USA

ContactUs-NA@ElessentCT.com

LATIN AMERICA

ContactUs-LA@ElessentCT.com

EUROPE | MIDDLE EAST AFRICA | INDIA

EMEAI Headquarters
Hoeilaart, Belgium

ContactUs-EMEAI@ElessentCT.com

ASIA PACIFIC

AP Headquarters
Shanghai, China

ContactUs-AP@ElessentCT.com

Jakarta, Indonesia

ContactUs-INDO@ElessentCT.com

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MECS® Technologies
MECS.ElessentCT.com