



•Design •Engineering •Construction  
•Installation •Start-Up

## Chemical Process Engineering, Design, Fabrication & Installation

### *Areas of Expertise:*

**Mech-Chem Associates, Inc.** is a full service engineering and design firm that specializes in the manufacturing and construction of chemical operations facilities, acid recovery systems, and fume scrubbing systems. We provide technical solutions that can control, recover, and purify our clients dilute, spent or waste acid solutions.

The engineering, design, fabrication and installation capabilities and expertise of our company is in the following applications:

#### **Engineering & On-Site Services**

Engineering and Design  
Detailed Drawing Layouts  
Custom/Fabrication  
Controls & Instrumentation  
Tank Inspections  
Preventative Maintenance

#### **Acid & Chemical Recovery**

Acid Purification Systems  
Diffusion Dialysis Systems  
Electrodialysis Systems  
Distillation Column  
Filtration Systems  
Vacuum Evaporators

#### **Chemical Processing & Handling**

Acid / Chemical Etching Systems  
Chemical Milling Systems  
Chemical Feed Systems  
R&D/Pilot Systems  
Chemical Delivery  
Chemical Storage

#### **Air Pollution Control**

Wet/ Fume Scrubber  
Ventilation Handling  
Fume Stacks & Blowers  
Fume Hoods & Duct  
Air Make-up  
Packing & Mist Eliminators

#### **Chemical Handling**

Chemical Delivery  
Chemical Storage  
Secondary Containment  
PLC/HMI Automation  
Truck Containment  
System Repair

#### **Waste & Wastewater Treatment**

Waste Neutralization Systems  
Wastewater Treatment Systems  
Filters & Clarifiers  
Zero Discharge Systems  
Ion Exchange Systems  
Carbon Filtration Systems

**Mech-Chem Associates, Inc.** was founded in 1984 specializing in acid and chemical corrosion technologies and process design. Over the last 30 years Mech-Chem has grown to include a network of dozens of professionals including an in-house staff of full-time engineers, designers, and PLC programmers.

Mech-Chem has an extensive library of over four hundred (400) project designs for systems and facilities for the above applications done by our company's engineering staff. We utilize this knowledge and expertise in the design of each new project done by our company.

Mech-Chem concentrates on helping your company meet, and then surpass, EPA, OSHA and NFPA regulations and your own environmental, health, safety and fire protection standards in a way that improves your bottom line over the long-term.

Mech-Chem's knowledge of chemical engineering and processing, along with our industrial experience in the design and start-up of these operating systems, gives us the unique ability to design and build fully integrated systems.

This expertise allows us to provide our clients with effective processing systems using the best available technology with state of the art PLC/PC automation and controls.

## Design, Engineer & Installation

**Knowledge of Acids:** -Mech-Chem has designed, engineered, built, and installed recovery and reclamation systems for nitric, hydrochloric, hydrofluoric, fluoroboric, methane sulfonic, sulfuric acids and mixtures of these acids. Mech-Chem has also designed, engineered, built, and installed the chemical storage, piping systems, and processes that are part of an overall acid process.

**Knowledge of Regulations and Safety Code-** When dealing with highly corrosive materials, such as waste acid solutions, it is important for all equipment and systems to be in regulatory compliance and meet your company's safety guidelines. Mech-Chem's systems meet OSHA and EPA requirements by utilizing NEMA 4X wiring and controls to handle corrosive environments.

**Knowledge of Materials of Construction-** The key to a successful acid recovery system is choosing the proper materials of construction. The right materials will provide the corrosion resistance that is necessary to provide for safe, efficient operation of the system. Mech-Chem has the experience and knowledge necessary to select the proper materials of construction, based on the specific acid and its concentration in the waste solution, and effectively use the selected material, both technically and cost-wise, in our designs.

**Knowledge of CE Certification-** Mech-Chem can fabricate and certify all our units to meet European standards (CE Certification).

**Installation-** Mech-Chem Associates, Inc. is a full-service engineering firm specializing in the design, engineering and construction of manufacturing facilities, operating processes, and environmental control systems. This wide range of experience gives us the ability to fully integrate an acid recovery system into your manufacturing operation.

**Equipment-** Equipment and components are at the heart of a successful and efficient system. Mech-Chem Associates, Inc. has extensive knowledge of chemistry and manufacturing systems which ensures equipment and components will operate seamlessly over the lifetime of the process.

**Design-** Mech-Chem Associates, Inc. can provide custom engineered and designed acid recovery system for your application. We know that acid recovery is a complex process which requires custom engineering and design to allow the system to be integrated into your current operations and become a part of your basic plant operations. Proper system integration is a critical step in ensuring the operational and financial success of the system.

**Implementation-** The engineering and design surrounding an acid recovery system involves selecting and integrating the best available technology with a facility's other areas of operations such as:

- Bulk Storage
- Piping Systems
- Production Operations
- PLC/PC Control Systems
- System Integration
- Recovery Technology

Mech-Chem Associates Inc. has extensive experience in dealing with aggressive chemicals and acids making us familiar with the chemistry and product quality issues which direct the design of our systems. Our knowledge and expertise in this area make Mech-Chem the best choice to properly integrate an acid recovery system into your operations.



Telephone: (508) 528-5990 Fax: (508) 528-8972

144 Main Street, P.O. Box 473 Norfolk, Ma 02056  
E-mail: [inquiry@mech-chem.com](mailto:inquiry@mech-chem.com) Visit: [www.mech-chem.com](http://www.mech-chem.com)