

## Bulk Storage Facilities and Piping Systems

The most effective way to reduce the environmental and safety concerns with the storage and handling of hazardous chemicals is through the proper engineering design and selection of the correct materials of construction for your chemical storage and handling systems. The design, fabrication and installation of the primary storage vessels, piping systems and instrumentation for process control by knowledgeable professionals will prevent a potential spill and provide for a safe operation.

Mech-Chem has extensive experience in the engineering and design of raw, mixed, and waste acid and chemical bulk storage facilities, piping systems, and processing systems. Mech-Chem's specialty is the storage and handling of corrosive, flammable and hazardous chemicals.



***Resin bulk storage facility with painted carbon steel tanks. PLC automated piping system that controls the temperature and delivery of the resins to production.***



***Sodium hydroxide storage and delivery system with inline mixing capabilities. The system automatically dilutes and delivers NaOH solution to production.***

### Bulk Storage Systems

Mech-Chem designs atmospheric and pressure storage tanks (from 100 to 40,000 gallons) to meet API Codes. The materials of construction include carbon steel, stainless steel, aluminum, and specialty nickel alloys. For corrosive applications tanks are lined with natural rubber, chlorobutyl rubber, and Teflon.

The engineering and design of bulk storage systems covers all the requirements for a complete facility including:

- ♦ Bulk Storage Tanks
- ♦ Level Monitoring and Control
- ♦ Piping Systems
- ♦ Secondary Containment
- ♦ Structural Supports and Access
- ♦ Leak Detection
- ♦ Process Control
- ♦ PLC Automation



## Inspection and Compliance Services

Mech-Chem provides full-service testing and inspection programs for compliance with various codes and regulations (i.e. API, ASME, OSHA, and EPA) which includes:

- ◆ Internal Visual Inspection
- ◆ External Visual Inspections
- ◆ Ultrasonic Thickness Testing
- ◆ Spark Testing
- ◆ Hydrostatic Pressure Testing

In addition, we have performed weld and metallurgical failure analysis for clients including:

- ◆ Metallurgical Assessment
- ◆ Metal Analysis
- ◆ Radiographic Inspection
- ◆ Binocular Microscope Examination



***General view of Mech-Chem's typical mechanical and piping installation for chemical application***



***Toluene bulk storage facility showing tank, conservation vent, piping, and containment with roof***

## Codes and Regulations

Mech-Chem adheres to the applicable regulations and codes in the engineering, design, and construction of chemical handling and piping systems. For piping systems (including bulk storage, process piping, and secondary containment) these codes include:

- ◆ API Codes
- ◆ UL Codes
- ◆ ASME Codes
- ◆ NFPA Fire Protection Codes
- ◆ OSHA Safety Regulations
- ◆ EPA Environmental Regulations



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