

Wastewater Neutralization Systems

Mech-Chem Associates, Inc. has a unique series of automated wastewater pH neutralization systems. The systems are designed to handle and process a variety of acid and alkaline waste solutions.

These pH neutralization systems vary in size from 10 gal to 2,500 gal. The smallest system is designed to fit in the bottom of a lab hood.

A filter can be added to the systems if solids removal is required for your application.

Chemical Applications

Examples of the acid and alkaline solutions that can be treated are the following:

- Hydrochloric (HCL)
- Hydrofluoric (HF)
- Nitric (HNO₃)
- Sulfuric (H₂SO₄)
- Methylsulfonic Acid (CH₃SO₂OH)
- Sodium Hydroxide (NaOH)
- Potassium Hydroxide (KOH)

System Design

The pH neutralization systems consist of the following components:

- Equalization/ neutralization tank
- pH meter/controller
- Proportional metering pump
- Treatment chemicals
- Double diaphragm pump
- Control panel



The pH neutralization system shown in these photos is for a laboratory, pilot or small production operation with the equalization/neutralization tanks located in a pit. The controls are mounted in a panel located on the wall above the pit. The tank is equipped with an agitator to blend the acid and caustic streams. Additional caustic is automatically added to raise and control the pH of the wastewater solution to the proper pH for discharge to the local POTW.

The picture to the right shows a typical large equalization and neutralization system. This is a 1,500 gal capacity system for treating acidic wastewater from airplane component manufacturing operations. The system automatically processes and neutralizes 1,500 gal batches of wastewater for discharge to the local POTW.

This picture also provides a general view of Mech-Chem's typical mechanical and piping installation for chemical application and wastewater treatment systems.

Mech-Chem adheres to the applicable regulations and codes in the engineering, design, and construction of chemical handling, process and wastewater piping systems.



The photo shown to the left is an automated wastewater neutralization system that fits under the sinks in a R&D lab hood.

The application for these systems are research & development, quality control, pilot operations, and electronic manufacturing applications.

The compact unit is a completely automated system that includes tanks, pH sensor, caustic supply, and metering pump. The pH meter and controls are mounted in a panel next to the hood.



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