

# Modular treatment system neutralizes process water

A self-contained pH control and monitoring system for ready mixed operations yields clean water for recycling or permitted discharge to the environment. Fortrans' Model 5000S uses carbon dioxide gas to neutralize high-pH process water, offering precise alkalinity monitoring and control of water in pits, settling basins and other containment areas, as it lowers total suspended solids.

Designed to maintain a specified pH level in a body of water usually 100,000 gallons or less, the Model 5000S pH Control and Monitoring System lowers pH to 7.5, whereupon total suspended solids (TSS) typically fall between 10–18 mg/L without filtration—readings that satisfy both pH requirements and the 30 mg/L TSS most permits demand before water can be released. Treated water then may be used for wetting rock and/or dust control to aid compliance with storm water run-off regulations, or it can be recycled to batch concrete and rinse mixer-drum interiors, as well as trucks bodies without staining or scaling their finishes.

The Model 5000S includes a pH monitor and control system housed in a weatherproof facility with lockable doors and adequate space to house the instrumentation and circulation pump. Configured for carbon dioxide gas operation, the system treats approximately 75,000 gallons of water over a 24-hour period. A maximum 20-ft. head pressure allows handling up to 57 gallons per minute. Higher-capacity systems up to 200,000 GPD are also available.

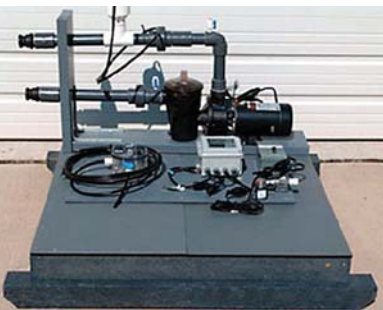
Permitting easy hook-up, the manufacturer affirms, are 1.5-in. quick-connect fittings on inlet and return for standard 2- to 20-ft. sections of 1.5-in. flexible hose. Inlet and outlet fittings at the pit or basin are specified accordingly.

Units are shipped fully assembled, requiring only an electrical connection and a supply of carbon dioxide gas. Further, since the chemical controller is preprogrammed to maintain a pH of 7.5, merely attaching hoses and PVC fittings is required upon delivery.

Model 5000S reportedly costs 60 percent to 70 percent less to operate and maintain than an acid-based pH control systems. Also safer than acid-based alternatives, the 5000S does not require a separate tank on account of its novel water circulation design. Certified by an independent engineering firm to operate as specified, the Model 5000S is offered with a one-year warranty on all component parts and housing.

The system is also available as a skid-mounted unit containing all instrumentation and components of Model 5000S. The Model 5000SK Skid-Mounted pH Control System is shipped on a 44- x 47-in. plastic skid fortified with a durable, solid-plastic surface. Its control panel, provided loose with all components installed, is designed to be attached to an interior wall of the control building. Tubing to the sample cell and from the CO2 solenoid valve to the Sparger stone-fed assembly must be inserted after receipt of the unit. The system features a 115V-30Amp breaker box and two ground-fault circuit interrupter (GFCI) receptacles. The system is shipped with a CO2 feed device.

"We are currently using nine of Fortrans' Model 5000 pH Control Systems at our ready mixed concrete plants," reports Jeff Lamm, environmental manager for Southern Concrete Materials in Asheville, N.C. "They enable us not only to control the pH in our [process water], but help us deal with solids build-up as well. Reliable and virtually maintenance-free, they are one of the best methods I have found to deal with high-pH process water—one of the most critical and increasingly regulated issues in our industry." SCM is eyeing additional Model 5000 systems for its 30-plant network, he adds. — [www.fortransinc.com](http://www.fortransinc.com)



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