



## EQUIPMENT SYSTEMS AND ENGINEERING

### Introduction

USP Technologies (USP) specializes in the design and installation of bulk and mini-bulk chemical handling systems to serve the municipal, industrial, remediation and drinking water markets. Our ability to provide proven, value-added, comprehensive full-service solutions is unique within the industry. Our engineers work closely with our application experts to provide efficient, cost-effective and high quality turn-key chemical management solutions, whether the requirement is fewer than 5 gallons per day or 5,000 gallons per day. Engineers are available for design support and consultation for all chemical handling requirements:

- Turn-key Systems
- Installation, Startup and Maintenance
- Custom Design and Fabrication
- Safety Compliance
- Bulk & Mini-Bulk Solutions

### Turn-key Systems

USP maintains many off-the-shelf designs for quick response to customer needs. Systems can be designed for permanent long term treatment programs or temporary trial/pilot programs. Each has secondary or site containment, integrated control systems and low-voltage power requirements for ease of installation. Systems arrive on-site in modular form, tested and passivated for immediate installation and chemical use.

### Tank Systems

- HDPE or FRP reinforced HDPE tanks with integral secondary containment. All tanks are designed according to appropriate chemical industry standards. Site containment or tertiary systems are provided as needed.
- Systems are designed with required safety devices in accordance with the strictest industry standards.
- The ChemWatch™ Control Monitor provides tank-side digital display of level in gallons and provides remote communications to the ChemWatch™ Control Center and customized dose profiles. Tank leak detection and other system diagnostics are optional.
- Tank size options range from 500 to 10,500 in double wall systems or up to 15,000 with single wall designs. Each tank system can be provided with seismic restraints.

### Pump Assembly Skids

- Includes two ProMinent™ pumps for metering applications or other pump types per specific process requirements. Suction and discharge piping is passivated 316 stainless steel for hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) or or Sch 80 CPVC for iron salts. Other systems are designed for specific chemical requirements.
- Standard fittings include backpressure regulator, pressure relief valves and calibration assembly.
- Electrical Control Panel, which provides on/off manual or automatic operation of either pump.
- All H<sub>2</sub>O<sub>2</sub> pump skids are designed and fabricated with required safety relief devices and are passivated to ensure product quality and safety.
- All skids are mounted in environmental enclosures for leak management and equipment preservation. Enclosures can be outfitted with leak detection and seismic restraints as needed.

## Installation, Startup and Maintenance

USP's turn-key programs include installation, testing, start-up and all equipment system maintenance. At start-up, all metering pumps are calibrated and calibration curves are provided for easy reference.

As part of the full-service program, each system is regularly inspected and checked throughout the contract period. USP develops customized preventive maintenance programs for all systems provided by USP. Highly skilled and trained Field Service Technicians perform required preventive or routine maintenance and keep documentation of completion. USP also performs annual system inspections and annual refresher safety training. Our field service personnel can respond within 24 hours to address equipment issues.

## Custom Design & Fabrication

With our full-service fabrication shop, located in Grand Island, NY, USP can custom-design and fabricate any modifications needed to our standardized systems. From chemical specific designs to multiple dose points and complex dosing programs, USP can meet all requirements.

## Safety Compliance

USP manages all activities with strict adherence to safety and environmental compliance utilizing a Product Stewardship Program to guide activities. This practice ensures all systems are designed, installed and maintained properly. Strict system design fundamentals, highly-skilled and trained field personnel and comprehensive installation and maintenance procedures are the foundation of the program. All of our systems are designed in strict accordance with chemical industry standards and according to each specific chemical hazard class. Safety and operational training is provided to all operations personnel prior to start-up. Training consists of both classroom and field demonstration, and can be scheduled to accommodate

different shift times as required. Two copies of a general training video are provided for safety, operations and maintenance personnel.

## Bulk and Mini-Bulk Solutions

USP offers many programs to assist with the safe storage, handling and use of H<sub>2</sub>O<sub>2</sub> and other chemicals. Our programs and systems are recognized as being of the highest quality and are designed to the strictest of USP and chemical manufacturer standards.

USP can provide mini-bulk chemical storage options ranging from 500 to 3,000 gallons with systems customized to usage patterns, space availability, terminal locations, etc. The objective is always providing the safest, most reliable and cost-effective solution for our customers.

USP also specializes in bulk chemical supply programs for higher usage applications or where logistics require freight optimization for full tank truck deliveries. For these locations, we offer tanks from 5,000 to 10,500 gallons in double wall configuration and up to 15,000 gallons in single wall designs. Each tank, regardless of size, is designed and fabricated to strict USP standards that exceed those of the industry.

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## About USP Technologies

USP Technologies is the leading supplier of peroxygen-based technologies and services for environmental applications. We have been serving the water, wastewater and remediation markets for over 20 years and have offices and field service locations throughout North America. Our consultative approach to problem solving includes application assessment, technology selection and development of a tailored treatment approach. Our full service programs successfully integrate storage and dosing equipment systems, chemical supply, inventory and logistics management, and ongoing field and technical support. This approach provides cost-effective, "hands-off" solutions to our customers. USP Technologies also can provide access to experienced application partners for a turn-key program encompassing engineering, site characterization and technology selection, program implementation, execution and report generation.

## Getting Started

We look forward to supporting your treatment needs, whatever the scale of your requirements. To obtain a streamlined treatment solution tailored to your specific project, give us a call at (877) 346-4262.

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### USP Technologies

900 Circle 75 Parkway, Suite 1330  
Atlanta, GA 30339

### USP Technologies - Canada

3020 Gore Road  
London, Ontario N5V 4T7

**Phone:** (404) 352-6070 or (877) 346-4262

**Email:** [info@usp technologies.com](mailto:info@usp technologies.com)

**Website:** [www.USP Technologies.com](http://www.USP Technologies.com)

