

SIEMENS/USFILTER

**SOLUTIONS FOR
GLOBAL WATER TREATMENT**

USFilter Facts

Every day, millions of people and thousands of companies rely on USFilter systems and services to help them meet their clean water needs successfully. USFilter delivers cost-effective, reliable systems to municipal, industrial, commercial and institutional customers worldwide. USFilter Corporation, a Siemens company, is the largest water and wastewater treatment systems and services company, with the broadest array of technologies, a USA wide service network, and a long history of innovation and leadership in the water treatment market.



MUNICIPAL WATER AND WASTEWATER TREATMENT:

Thousands of municipalities rely on USFilter for vital water and wastewater treatment equipment and service. Our offering includes everything from conventional treatment processes to high-tech water reuse systems that employ the latest developments in membrane filtration. We provide instrumentation and controls, sludge management, odor control, and much more. Our service personnel, located across the country, help municipalities operate and maintain their systems for peak efficiency.



INDUSTRIAL WATER AND WASTEWATER TREATMENT:

Companies, from small firms to Fortune 500 manufacturers, in all industrial segments, benefit from the complete range of technologies and the financial strength of USFilter. Our systems treat raw water for the power industry, process water for pharmaceutical firms and food and beverage producers, wastewater from refineries and petrochemical plants, and more. We offer essential water services, such as build-own-operate, mobile water treatment, emergency water supply, carbon supply and regeneration, hydrocarbon recovery and treatment, groundwater remediation, and hazardous waste transportation, storage and disposal.



USFilter is a leading provider of high purity water systems and services to the critical medical, scientific, and laboratory markets. Small businesses and commercial firms benefit from our expertise in deionization, softening, package treatment units, membranes, replacement and spare parts, and more. We also supply water treatment and monitoring systems for swimming pools and water parks.

USFilter Facts

NATIONWIDE SERVICE NETWORK

Through a national network of 118 local service centers, USFilter provides customers with rapid response and personal attention. We are within 100 miles of nearly all the major cities and industrial complexes across the country.

GLOBAL BUSINESS ACTIVITY



BEST BRANDS

USFilter has combined the water treatment industry's best brands into a cohesive team to serve customer needs. They include:

- Arrowhead
- Continental
- Control Systems
- Davco
- Davis
- Electrocatalytic
- Envirex
- General Filter
- Illinois Water Treatment
- Ionpure
- Jet Tech
- JWI
- Memcor
- Memtek
- Microfloc
- Penfield
- Permutit
- Perrin
- Polymetrics
- Recovery Services
- RJ Environmental
- Stranco
- Wallace & Tiernan
- Westates
- Zimpro

KEY FACTS AND FIGURES

- ▲ Number of employees 5,800
- ▲ Number of locations 157
- ▲ Number of installations over 200,000
- ▲ Number of patents over 1,100
- ▲ Number of technologies/services more than 900

MARKET POSITION

- ❖ Award for Best Overall Customer Service, Superior Product Quality, Range and Performance (*Frost & Sullivan* customer survey, 2003).
- ❖ No. 1 water treatment technology company (*Environmental Business Journal* revenue survey, 2003).
- ❖ Ranked No. 1 US Environmental Firm (*Environmental News Record* revenue survey, July 2004).

Contact Information:

CEO – Roger Radke
 Warrendale, PA • 724.772.1212
Press and Media
 Karole Colangelo • 847.706.6947

Information Desk For Application and Product Information
 information@usfilter.com (*email*)
800.525.0658 (phone)
 www.usfilter.com (*website*)

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Markets Served



[AUTOMOTIVE AND METAL FINISHING](#)

[ELECTRONICS INDUSTRIES](#)

[FOOD & BEVERAGE](#)

[HPI/CPI - OIL & GAS](#)

[MUNICIPAL DRINKING WATER](#)

[MUNICIPAL WASTEWATER](#)

[PHARMACEUTICAL INDUSTRIES](#)

[POWER INDUSTRIES](#)

Automotive and Metal Finishing

It takes over 150 m³ of water to produce a single vehicle, and USFilter's equipment and services can touch almost every drop. The Globalization of the Automotive Industry and its supplier network of metal and manufacturing companies has enhanced the requirement for experienced and reliable water and wastewater treatment systems. High quality products manufactured to the same standards anywhere in the world are demanded. USFilter supports this effort through our experience and products for the market place.

During the last 10 years, zero discharge systems have become common practice for automotive assembly plants in areas where water resources are both scarce and expensive. USFilter lead the way in developing integrated systems to meet the requirements including prominent installations at Chrysler Saltillo Mexico (first assembly plant zero discharge facility) and General Motors Ramos Arizpe Mexico (winner of the prestigious Stockholm Industrial Water Award in 2001).

USFilter is the single largest supplier of high purity water treatment systems, wastewater treatment equipment and services into the Automotive industry providing over 75% of the Assembly plants in North America alone with their high purity water requirements.

Chemical Feed Applications

- Stranco Controls and Analyzers
- Stranco Polymer Feed
- W&T Controls and Analyzers
- W&T Liquid Feed

Industrial Water Pretreatment

- Memcor® CMF
- Memcor® CMF-S
- Microfloc Trident®
- Memtek Membrane Softening

High Purity Process Water

- Process Water CDI
- Process Water RO
- Process Water Ion Exchange

In-Process Product Recovery

- Memtek Microfiltration
- Ion Exchange Systems – IWS
- Silverback Cleaner Recovery

Wastewater Pretreatment

- Envirex DAF
- Neutralization Systems- IWS
- Zimpro Plate Separators

Wastewater Metals Removal Systems

- Packaged Precipitation Systems
- Memtek Microfiltration
- Zimpro® Inclined Plate Separators
- Davco Plate Separators
- Envirex Circular Clarifiers

Wastewater Biological Treatment

- MemJet® MBR
- Jet Tech SBR
- Envirex RBC
- Davco Packaged systems

Wastewater Recovery systems

- Memtek Microfiltration
- Memcor® CMF-S
- MemJet® MBR



Electronics Industries

USFilter understands the critical quality and quantity issues for the microelectronics industry. Uptime is profit, downtime is loss. That is why major manufacturers within the microelectronics industry trust their water treatment to the experienced staff of USFilter.

USFilter offers the microelectronics industry equipment and service expertise in

Ultrapure water
Wastewater
Reuse/Reclaim
Outsourced Operations
Services and Products

Industrial high-purity water technologies

- Electrocatalytic Anodes
- Memcor® CMF
- Memcor® CMF-S
- Process Water Systems - CDI
- Process Water Systems - RO
- Process Water Systems - Ion Exchange

Chemical feed applications

- Stranco Controls and Analyzers
- Stranco Polymer Feed

Membrane Systems

Carbon Filters

Multimedia Filters

UV Systems

Ozone Systems

Cartridge Filters



Food & Beverage Industries



USFilter offers a wide array of filtration, enhanced filtration, and purification equipment for the most efficient water treatment methods available to food and beverage clients. Our line of wastewater treatment technologies, including chemical/physical, biological, evaporation, and recovery provide you with the equipment and processes to help you meet compliance issues, minimize waste, reduce BOD levels or attain “zero water discharge.”

USFilter designs, builds, installs, and operates complete water & wastewater systems according to your specifications.

Whether you need high quality sanitary water for ingredient water and cleaning processing systems or wastewater treatment, USFilter can help you select the safest, highest quality and most cost effective treatment solution.

Key Technologies

Beverage Industry

- Membrane Systems
 - Reverse Osmosis
 - Microfiltration
- Greensand Filters
- Water Softeners
- Carbon Filters
- Multimedia Filters
- UV Systems
- Ozone Systems
- Cartridge Filters
- BOD Reduction systems

Food Industry

Boiler Feedwater Treatment

Wastewater Treatment

- Aerobic Biological Systems
- SBRs
- Activated Sludge Package Systems
- Anaerobic Treatment
- Dissolved Air Flotation
- Biotowers
- Membrane Bioreactors (MBR)
- Water Recycle Systems
- Sand Filtration
- Filter Presses
- Sludge Destruction Systems (Cannibal)

Contact: information@usfilter.com

Website: www.usfilter.com

HPI/CPI - Oil & Gas

"USFilter provides total water management solutions for the oil and gas production industry including treatment of produced water in oil production, as well as water for reinjection. In the downstream petroleum refining and petrochemical industry, as well as the chemical industry, USFilter provides a total solution to meet the water and wastewater treatment needs of these facilities, as well as providing unique solutions for VOC control, groundwater treatment and in process waste stream treatment."

For over 65 years USFilter has been providing water and wastewater treatment solutions to the petroleum industry and many of the standard products and processes used in the petroleum industry today were developed by USFilter. With over 3000 installations in the petroleum and chemical industry worldwide, no other company has the experience, products and services to meet the water and wastewater treatment needs of these industries.

Intake Systems

- Envirex Traveling Water Screens

Desalinization RO pretreatment

- General Filter Multiblock
- Memcor CMF
- Memcor CMF-S
- W&T UV and Chlorination
- Microfloc Trident

Industrial high purity water

- Electrochlorination Anodes
- Memcor CMF
- Memcor CMF-S
- Process Water Systems CDI

Wastewater Screening

- Envirex Bar Screens
- Envirex grit collectors

Oil/Water Separators

- Envirex API separators
- Zimpro Hydrocyclones
- Zimpro CPS separators
- Envirex DAF/DGF Separators
- Zimpro IAF/IGF Separators
- Zimpro Walnut Shell Filters

Biological Treatment

- Davco Field Erect Systems
- Envirex Orbal
- Envirex VLR
- Envirex Verti-Cel
- Envirex RBC/SBC
- Envirex Discfuser Aeration
- Zimpro PACT Systems
- Jet Tech Jet Aeration
- Jet Tech SBR
- Envirex Trans-Flo Clarifiers
- Envirex Rim Flo and Tow Bro Clarifiers
- Memjet MBR



HPI/CPI - Oil & Gas, continued



Tertiary Treatment

- Zimpro Hydro-Clear Filters
- Davco Traveling Bridge Filters
- Memcor CMF
- Memcor CMF-S

Sludge Handling

- DSG Filter Presses
- DSG Centrifuge
- Envirex Cannibal
- Envirex Gravity Thickeners

Groundwater treatment

- Envirex GAC Fluid Bed
- Envirex RBC/SBC
- Zimpro PACT Systems

Chemical feed applications

- ELCAT Electrochlorination
- Stranco Controls and Analyzers
- Stranco Polymer Feed
- W&T Controls and Analyzers
- W&T Liquid Feed
- W&T Dry Feed
- W&T Gas Disinfection

Produced Water Treatment Systems

High Strength Wastes and Speciality Applications

- Zimpro® Wet Air Oxidation

Municipal Drinking Water

Municipalities depend on USFilter for water and wastewater treatment technologies designed for operational efficiencies and lower life-cycle costs. That's why we continually strive to engineer our technologies to the highest standards--yours.

Whether your requirement is a single process unit, or a complete process train, we can help you select the optimum treatment solution. And because we have a variety of treatment options, you will get the best, most cost-effective solution for your community.

New plants, refurbishments, upgrades

- Electrocatalytic
- General Filter Multiblock™
- Memcor® CMF
- Memcor® CMF-S
- Microfloc Trident®
- RJ Environmental Chlorine Scrubbers
- W&T UV, Liquid Feed, Chlorination, OSEC

Improved pathogen removal and destruction

- Memcor® CMF
- Memcor® CMF-S
- Microfloc Trident®
- W&T UV, Chlorination, Chlorine Dioxide, Liquid Feed, OSEC®

Chemical feed applications

- Stranco Controls and Analyzers
- Stranco Polymer Feed
- W&T Controls and Analyzers
- W&T Dry Feed

Desalination RO-pretreatment

- General Filter Multiblock™
- Memcor® CMF
- Memcor® CMF-S
- Microfloc Trident®
- W&T UV and Chlorination

Intake systems

- Envirex Traveling Water Screens



Municipal Wastewater

Municipalities depend on USFilter for water and wastewater treatment technologies designed for operational efficiencies and lower life-cycle costs. That's why we continually strive to engineer our technologies to the highest standards--yours.

Whether your requirement is a single process unit, or a complete process train, we can help you select the optimum treatment solution. And because we have a variety of treatment options, you will get the best, most cost-effective solution for your community.

New plants, refurbishments, upgrades, recycle and reuse

- Davco Field Erect System
- Envirex Chain & Scraper
- Envirex Cannibal™
- Envirex Orbal®
- Envirex Rim-Flo® Tow-Bro® Clarifiers
- Envirex Trans-Flo®
- Envirex VertiCel®
- Envirex VLR®
- Jet Tech SBR
- MemJet® MBR
- RJ Environmental Odor Control
- W&T UV, Chlorination, Liquid Feed, OSEC®

Add/upgrade of biological nutrient removal

- Envirex Orbal®
- Envirex VLR®
- Envirex VertiCel®
- Jet Tech SBR
- MemJet® MBR
- Stranco Liquid Feed
- W&T Liquid Feed

Sludge reduction, drying, composting

- Dewatering Systems Group J-Vap®
- Envirex Cannibal™
- IPS Composting

Chemical feed applications

- Stranco Controls and Analyzers
- Stranco Polymer Feed
- W&T Controls and Analyzers
- W&T Gas Disinfection
- W&T Liquid Feed

Tertiary treatment

- Davco Traveling Bridge Filter
- Memcor® CMF
- Memcor® CMF-S
- MemJet® MBR
- Microfloc Trident®
- Stranco Dechlorination
- W&T Dechlorination
- Zimpro Hydro-Clear® Filter



Pharmaceutical Industries

Whether your need is USP Purified Water, WFI, non-conditional high purity water, boiler feed or wastewater treatment, USFilter can provide the technology and service that meets your requirements.

Our corporate culture revolves around quality project execution, thorough documentation, smooth installation and start-up, and painless validation. Working with USFilter provides the following benefits:

Expertise - USFilter has designed more USP Water Systems than any other company in the world.

Superior Technology - CDI® Systems, Two-Pass RO, hot water sanitizable systems and pre-engineered systems for USP purified water generation.

Industrial high-purity water

- Custom Process Water Systems
- Process Water Systems - RO
- Process Water Systems - CDI
- Process Water Systems - PreVUE™
- Process Water Systems - EPV™
- Process Water Systems - Storage/Dist
- Process Water Systems - Ozone
- Memcor® CMF
- Memcor® CMF-S

Wastewater Treatment

- MemJet® MBR
- Zimpro PACT®
- Jet Tech OMNIFLO® SBR
- Jet Tech OMNIPAC® SBR
- Standard Systems - Equalization and Neutralization
- Wet Oxidation System
- Filter Presses
- Belt Filter Presses



Power Industries

USFilter understands the power industry's need to reduce capital and operating costs in today's competitive market. That's why we offer water and wastewater treatment solutions, from pilot testing, supply, start-up, training and service.

Whether you need to treat non-traditional sources of water for cooling tower make-up or boiler feed, minimize or eliminate waste discharge or treat flue gas desulfurization scrubber blowdown, USFilter can help.

New plants, refurbishments, upgrades, recycle and reuse, zero liquid discharge

Chemical feed applications

- ELCAT Electrochlorination
- Stranco Controls and Analyzers
- Stranco Polymer Feed
- W&T Controls and Analyzers
- W&T Liquid Feed

Industrial high-purity water

- Process Water Systems - CDI
- Process Water Systems - RO
- Process Water Systems - Ion Exchange
- Electrocatalytic Electrodes
- Memcor® CMF
- Memcor® CMF-S
- Microfloc Trident®

Tertiary treatment

- Davco Traveling Bridge Filter
- Memcor® CMF
- Memcor® CMF-S
- Microfloc Trident®
- Zimpro Hydro-Clear® Filter

Biological treatment, oil/water separation, metals removal

- Davco Field Erect System
- Envirex Orbal®
- Envirex Rim-Flo® Tow-Bro® Clarifiers
- Envirex Trans-Flo®
- Envirex VLR®
- Envirex VertiCel®
- Jet Tech SBR
- MemJet® MBR
- Recycle and Reuse Solutions

Desalination RO-pretreat

- General Filter Multiblock™
- Memcor® CMF
- Memcor® CMF-S
- Microfloc Trident®
- W&T UV and Chlorination

Intake systems

- Envirex Traveling Water Screens



Parallel Plate Separators for Liquid and Solids Separation



Parallel plate technology is a great solution for treatment facilities needing separation and clarification of its suspended solids, but does not have ample space for a conventional clarifier.

Davco parallel plate separators (PPS) range in capacity from 15 gallons per minute (gpm) to several million gallons per day, using multiple units. Our PPS plates are inclined at a 60-degree angle to enhance rapid settling. Typical hydraulic loading rates vary from 0.25 gallons per minute per square foot effective area for light hydroxide type precipitates to 0.5 gallons per minute per square foot effective area for surface water clarification.

Features and Benefits

- Utilizes minimal floor space
- Provides for low maintenance
- Minimizes installation costs
- Reduces overall capital costs
- Equals or out-performs conventional clarification
- Offers optional equipment for chemical addition and other special industrial applications.

MARKET

Automotive

Microelectronics

APPLICATION

Wastewater Biological Treatment

Wastewater HF Treatment

Field Erected Treatment Plants



Davco Products manufactures and supplies steel, field-erected biological treatment systems for the reduction of biochemical oxygen demand (BOD), total suspended solids (TSS), total nitrogen (TKN) and Phosphorus (P).

Municipalities and contractors for industrial clients can reduce their overall capital expenditure by selecting Davco Products' steel, field-erected biological treatment systems over form-built, concrete basin treatment plants. If customers want to reduce their associated engineering and construction costs, plus have a shorter concept-to-completion timeline, then these systems are the ideal choice.

Features and Benefits

- Offers quick installation- Our permanent field-erected biological treatment systems are pre-assembled and then erected at the job-site.
- Requires less physical space, less yard piping and electrical conduit, and less maintenance than site-built concrete systems.
- Easily incorporates a wide range of biological process options, and special configurations such as the unique dual-path design.
- Proves a viable option for colder climates when partially or fully buried to protect from freeze damage.

MARKET

HPI/CPI Oil & Gas

APPLICATION

Biological Treatment

DAVCO Traveling Bridge



Gravisand® Filtration System for Wastewater Effluent Polishing

Gravisand technology incorporates the principles and advantages of conventional traveling bridge designs but uses improved methods of accomplishing and maintaining filtration and regeneration.

Features and Benefits

- Unique Tubular Underdrain prevents media leakage and irreversible fouling
- IAS System Provides maximum media cleaning without ancillary mechanical equipment
- No-Wear Backwash shoe eliminates seal face wear and side loading of the traveling bridge
- Indexing System accomplishes superior cleaning by allowing the bridge to remain stationary at the index point
- Bolt-in Upgrade Option Conveniently retrofits ineffective filters to the Gravisand technology
- XCELL configuration saves on installation and equipment costs by eliminating the need for cell dividers

MARKET

Municipal Wastewater
 HPI-Oil & Gas
 Power Industries
 Chemical Process Industries

APPLICATION

Tertiary treatment
 Tertiary treatment
 Tertiary treatment
 Tertiary treatment

J-Press® Sidebar Filter Press



The USFilter Dewatering Systems sidebar filter press is among the most widely used liquid/solids filtration and separation device obtainable.

The J-Press® Filter Press is among the most widely used liquid/solids filtration and separation devices in the world.

- Sidebar construction, filter plate size range available from 250 mm x 250 mm (9" in) to 2000 mm x 2000 mm (79" in).
- Operating Pressures 100 psig (7 bar) or 225 psig (16 bar).
- Versatility of plates, manifolds, automation levels and optional equipment.
- Pneumatic or electric hydraulic closure systems.

Features and Benefits

- Wide range of sizes and configurations
- Optional expansion piece
- Automatic Operation
- Rugged Construction
- Extensive aftermarket services available
- Dewatering solution to most process flows
- Future expandability
- Reduced labor
- Long service life
- Convenience and reliability for you

MARKET

HPI/CPI, Oil & Gas

APPLICATION

Sludge Handling

Centrifuge



The USFilter Centramax™ centrifuge provides the most cost-effective, high performance solution to continuous dewatering or thickening.

The USFilter Centramax™ centrifuge employs the latest in control design technology to simplify system operation and provide total process control. It is the result of a combined effort between operators and engineers to provide the most user-friendly, cost-effective, high performance centrifuge available today.

Features and Benefits

- Graphic User Interface with touch screen control.
- Torque based control screen constantly monitors and adjusts differential.
- Bowl operates at greater than 3,000 Gs.
- Independent bowl and scroll drives.
- Closed body scroll design.
- Sintered tungsten carbide tiles and feed and discharge ports.
- Simplified, two-piece bowl construction.
- 100,000 hour L-10, non-proprietary bearings.
- Bell-shaped feed compartment designed to provide gentle transition.
- Easy to operate.
- Maximum performance and high cake solids.
- High cake solids and capture efficiency.
- Minimal energy consumption and maximum control.
- Minimized turbulence and high transfer rate of solids.
- Reduced wear, ensuring a long life.
- Reduced vibration.
- Long life and cost effective replacement.
- Reduced floc destruction.

MARKET

HPI/CPI, Oil & Gas

APPLICATION

Sludge Handling

J-Vap® Dewatering Drying System



The J-Vap performs dewatering and drying in one system using a filter press and vacuum drying.

Features and Benefits

- Automated operation
- One step process
- Select any level of dryness for your filter cake
- Achieve significant weight/volume reduction
- Dry sludge without air discharge permits
- Significant pathogen reduction
- Minimal operator attendance
- Eliminate multiple equipment and handling
- Eliminate secondary operations
- Reduce disposal costs
- Minimize concerns about regulatory fines
- Address 503 regulation standards

MARKET

Municipal Wastewater

APPLICATION

Sludge reduction, drying, composting

CAPAC® Impressed Current Cathodic Protection



CAPAC is a permanent automatic corrosion protection system that prevents electrolysis and galvanic corrosion from attacking the submerged surfaces of vessels and fixed structures.

This high-tech system is the ultimate state-of-the-art, long-term solution to corrosion problems on hulls, and is recognized as a superior alternative to sacrificial anode systems — which require more frequent replacement and increased fuel and maintenance costs.

CAPAC works by supplying a controlled amount of DC current to submerged surfaces utilizing highly reliable platinum- or mixed metal oxide (MMO)- surfaced anodes and silver/silver chloride reference electrodes. This electrical current, constantly monitored and regulated by the system itself, stops the electro-chemical action of galvanic corrosion.

Features and Benefits

- Permanent
- Effective
- Light, Compact
- Reliable, Simple
- Inexpensive
- Equipment is designed for a life of 20 years.
- Automatic impressed current systems will provide the varying output demand to meet all operational and hull conditions encountered.
- Anodes are light in weight, strong and compact in construction, which contributes to easy shipping, storage and installation in the shipyard.
- The automatic control equipment provides reliable, simple to operate, consistently trouble-free service, with continuous monitoring of the hull conditions.
- Automatic control cathodic protection systems afford the optimum in corrosion prevention at minimum overall cost, since the initial installation is the only one required for the life of the vessel.

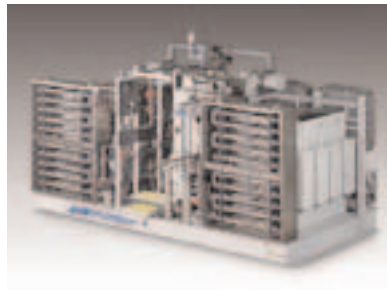
MARKET

HPI-Oil & Gas
 Power Industries
 Marine

APPLICATION

New plants, refurbishments & upgrades, Platforms
 Heat exchange system
 Corrosion control

Chloropac® Sea Water Systems for On-Site Generation of Hypochlorite



USFilter’s Electrochemical Products Chloropac systems produce in situ a dilute solution of hypochlorite from sea water for direct injection into the water system. This electro-chlorination process is ideally suited to a wide range of industrial, marine, and offshore production platforms where seawater or fresh water is used as part of the engineering process. Chloropac is a cost-effective and reliable process to prevent biofouling of these processes in petrochemical plants, electric power generating stations, or desalination plants.

Features and Benefits:

- Complete customizable modular construction for difficult or compact installations
- Simple, automatic operation provides for less operator interface
- Unique, modular C.T.E. (concentric tubular electrode) self-cleaning cell eliminates the need to store special chemicals for cleaning
- Low maintenance in a system that looks after itself.

MARKET

Petrochemical
 Power Plants
 Desalination Plants
 Marine
 HPI Oil & Gas

APPLICATION

Slime and algae control, biofouling control, cooling water, disinfection
 Slime and algae control, biofouling control, cooling water, disinfection
 Slime and algae control, biofouling control, cooling water, disinfection
 Slime and algae control, biofouling control, cooling water, disinfection
 Slime and algae control, biofouling control, cooling water, disinfection

USFilter’s OPTIMA® Anodes



USFilter’s Electrode Products OPTIMA anodes have proven themselves to be superior to conventional nickel, lead, lead alloy, steel, graphite, and magnate anodes. Unlike these disposable products, OPTIMA anodes employ re-coatable titanium and other high-value metal substrates, which provide excellent stability in aggressive alkaline and acid baths. Their high corrosive resistance allows for long-lasting performance.

Features and Benefits:

- Optima anodes are titanium-based and do not produce heavy metal contaminant build up, saving the cost of labor-intensive sludge removal.
- Optima anodes are a one-time investment. They can be recoated for fractional cost of replacements.
- Optima anode coatings offer a high degree of energy efficiency for less power costs.

MARKET

Automotive
 Petrochemical
 Electronics
 Chemical-biotech
 Metallurgical

APPLICATION

Metal finishing, anodizing, cathodic protection
 Metal finishing, anodizing, cathodic protection
 Metal finishing, anodizing, cathodic protection
 Metal finishing, anodizing, cathodic protection
 Metal finishing, anodizing, cathodic protection

Cog Rake Bar Screen



The Link-Belt® Cog Rake Bar Screen operates under the most extreme conditions, eliminating the need for manual cleaning of the bar rack. It removes large debris more efficiently than other screens on the market.

Features and Benefits

- Large debris capacity achieved by a positively engaged wiping mechanism and an 11" deep rake.
- Ensuring that moving parts are not submerged during normal operation guarantees lower maintenance.
- All screens are shop wired, assembled and factory tested for quality assurance.
- Parts are available in carbon or stainless steel for long, trouble-free service life.
- Rugged, jam-proof construction.
- The "Water Shield" motor enclosure will keep the screen in operation under the most severe conditions.
- Versatile operation and installation; easily retrofit or designed into new facilities.
- Available non-lube systems have eliminated greasing of the bushings, rollers, and gear surfaces.

MARKET

HPI/CPI - Oil & Gas

APPLICATION

Wastewater Screening

Rex® API Oil/Water Separators



Rex® API Oil/Water Separators are the performance, safety and environmental standard for petroleum refineries throughout the world.

USFilter has been manufacturing API oil/water separators since the 1930's, when they worked with the American Petroleum Institute (API) to develop the industry's standard design.

The Rex® API separator design has been risk-assessed, assuring safe operation. Above ground, steel tankage provides double-containment and visual leak detection for hazardous sludges and wastewater. VOCs are contained through the use of vapor-tight covers. Additional safety features include non-metallic collector components and covers, stainless steel on all wearing metallic components, deflagration vents, flame arrestors, and more.

Sludge collection hoppers, screw conveyors, flushing connections, clean-outs, sludge withdrawal piping, and sludge pumps are designed to remove and transfer API separator bottoms with minimal maintenance and operator attention. This is critical because the inability to remove thick, sticky sludges is the main reason the collector components fail in petroleum applications.

MARKET

HPI, Oil & Gas

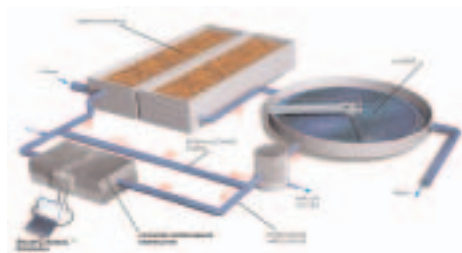
Chemical Process Industries

APPLICATION

New plants, refurbishments & upgrades, oil/water separation, clarification

New plants, refurbishments & upgrades, oil/water separation, clarification

Cannibal™ Solids Reduction Process



The revolutionary Cannibal™ solids reduction process virtually eliminates the biological solids produced by activated sludge wastewater treatment systems, as well as the costs associated with sludge wasting and removal. The Cannibal process can be incorporated into both new and existing facilities to realize significant savings.

Features and Benefits

Major Savings from the Cannibal Process Equipment:

- Eliminates routine biological solids wasting
- Significant reduction in costs associated with solids digestion, dewatering and hauling
- Separation of trash and inerts from active biomass
- No aerobic or anaerobic digestion required
- No sludge thickening or dewatering required
- No polymer addition required

MARKET

Municipal Wastewater

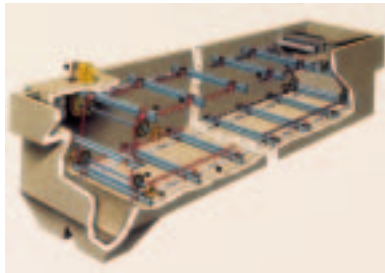
Industrial Biological Wastewater

APPLICATION

Sludge reduction, drying, composting

Sludge reduction, drying

Chain and Scraper Sludge Collector System



The Envirex Chain & Scraper Sludge Collector system is suited for primary and secondary wastewater sedimentation tanks, stormwater collection, industrial oil/water separation, and drinking water plant service. It provides maximum sludge concentrations and scum or floating material removal with minimal fuss, regardless of the size or application.

Features and Benefits

- Polymeric chain and sprockets, and fiberglass flights are designed to make maintenance tasks as easy and convenient as possible
- Easy installation results from lightweight polymeric components
- Proven reliability in over 13,000 collectors worldwide
- Extended service life with more than 20 years operational experience
- Our high-strength, composite polymeric Loop Chain is comparable to stainless steel chain in handling high load situations at a fraction of the weight

MARKET

Municipal Wastewater
 Municipal Water
 HPI-Oil & Gas
 Industrial Processes

APPLICATION

New plants, refurbishments & upgrades
 New plants, refurbishments & upgrades, Components are NSF Certified
 API oil/water separation, Dissolved Air Flotation (DAF's), New plants, refurbishments, primary and secondary sedimentation
 Oil/water separation, metals removal, primary and secondary sedimentation

Discfuser® Coarse Bubble Diffuser



Envirex Discfuser® diffusers are recommended for applications where you have or expect high solids concentration in the aerated liquor.

The Discfuser® diffuser consists of three components:

- an ABS housing
- a stainless steel retaining ring
- a PVC movable disc.

The movable disc is inserted between the diffuser housing and the stainless steel retaining ring, and is free to rise and fall within the space provided between the housing and the retaining ring. As air is discharged through the diffuser, the disc rises and air is permitted to pass around the entire periphery of the diffuser into the liquid.

Features and Benefits

- If the air supply is interrupted, the hydrostatic pressure of the liquid above the diffuser will force the disc against the diffuser housing preventing the passage of liquor into the air supply piping.
- Available with control orifices in five diameters. Proper selection ensures uniform air distribution throughout the tank contents, while optimizing the head loss through the system.
- Successfully used in:
 - Aeration Tanks
 - Aerated Grit Removal Systems
 - Aerobic Digesters
 - Channel Mixing Application

MARKET

HPI/CPI Oil & Gas

APPLICATION

Biological Treatment

Gravity Thickeners for Sludge Handling



Rex® gravity thickeners are heavy duty circular collectors, custom designed for handling concentrated industrial and municipal sludges.

To meet increased sludge loads, gravity thickeners are designed with higher service factors. Additionally, they can be provided with pickets for dewatering, lifting devices for heavy solids applications, etc. Since gravity thickeners are designed for sludge handling rather than liquid handling, they are furnished with steeper floor slopes than conventional clarifiers

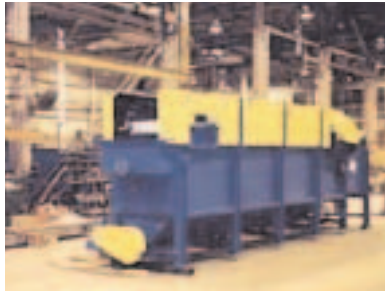
MARKET

HPI, Oil & Gas

APPLICATION

Sludge Handlings

Float-Treat® Dissolved Air Flotation (DAF) Separators



The Rex Float-Treat® separator provides effective removal of suspended solids, fats, oils and greases from liquids using dissolved air flotation (DAF) or dissolved gas flotation(DGF). Typically, removal rates of 90 - 95 percent are achieved with minimal operator attention. We have hundreds of installations throughout the world, in facilities ranging from refineries to dairies.

Float-Treat® DAF and DGF separators, with capacities up to 2,000 gpm, provide a cost-effective rectangular design that can be made of steel or concrete. Steel-tank DAF and DGF separators can be shop-fabricated and finish-painted, significantly reducing installation time and construction costs. Both flash mixing and flocculation can be integrated into one unit without the addition of separate tankage. Float concentrations of up to twenty percent oil and solids can be achieved, eliminating the need for additional thickening equipment normally associated with flotation technology.

MARKET

HPI, Oil & Gas
 Food & Beverage
 Chemical Processing Industries
 Manufacturing
 Primary Metals

APPLICATION

New plants, refurbishments & upgrades, oil/water separation, clarification
 New plants, refurbishments & upgrades, oil/water separation, clarification
 New plants, refurbishments & upgrades, oil/water separation, clarification
 New plants, refurbishments & upgrades, oil/water separation, clarification
 New plants, refurbishments & upgrades, oil/water separation, clarification

Orbal® Multichannel Oxidation System



The Envirex Orbal® multichannel oxidation ditch, as a complete mix, looped reactor system, is well-suited for conventional activated sludge, advanced secondary sludge treatment, simultaneous nitrification-denitrification, biological phosphorus removal and storm water treatment.

Features and Benefits

- Process adaptability - the basin can be easily expanded to accommodate for future load conditions
- Dual basin capability - the process can be modified to meet a wide range of influent conditions and effluent requirements
- Easy maintenance - only routine greasing of bearings is required; aerator discs are non-fouling
- Energy savings - the process requires less power to operate than any other oxidation ditch system
- Handles excessive steamflows - peak flows five times the design flow
- Operator convenience - little or no attention required

MARKET

Municipal Wastewater
 Chemical Process Industries
 Food & Beverage
 Power Industries

APPLICATION

New plants, refurbishments & upgrades, Add/upgrade of biological nutrient removal
 Biological treatment
 Biological treatment

Fluidized Bed Reactor (FBR)



The Envirex® Fluidized Bed Reactor(FBR) is a system capable of high degradative performance for target contaminants in a relatively small and economical reactor volume. Depending upon applications, the FBR can be operated under aerobic or anoxic environments.

The Envirex® Fluidized Bed Reactor (FBR) is a fixed film reactor column that has been effectively applied to many diverse applications, including groundwater remediation, superfund sites, chemical process plants, refineries, petroleum bulk storage terminals, tank bottom treatment facilities, municipal and industrial wastewater effluent polishing (toxics, COD, NO₃, and NH₃), etc. Compounds successfully treated include perchlorate, nitrates, MTBE, BTEX, phenols, chlorinated hydrocarbons and ammonia.

Features and Benefits

- Low ppb organic effluents
- No off-gas
- Quick startup
- Environmentally sound
- High rate system
- Proven performance

MARKET

HPI/CPI, Oil & Gas

APPLICATION

Groundwater Treatment

Envirex® High Performance Clarifier



The Envirex® High Performance Clarifier combines the Rim-Flo® clarifier and the Tow-Bro® unitube sludge removal technologies into the highest performing activated sludge secondary clarifier in the industry.

Features and Benefits

The Envirex® High Performance Clarifier is a proven performer that has been independently tested, modeled and evaluated for:

- Maximizing the hydraulic and mass loading capacity
- Elimination of gross short circuiting and minimum sludge blanket disturbance
- Reduced overall cost through a smaller footprint and lower construction cost
- Proven technology backed by actual site performance data
- Reduces - RAS pumping and blower costs by returning sludge faster and at higher concentrations

MARKET

Municipal Wastewater
 HPI, Oil & Gas
 Power Industries
 Chemical Process Industries

APPLICATION

New plants, refurbishments & upgrades
 New plants, refurbishments & upgrades, Biological treatment, oil/water separation, metals removal
 Biological treatment, oil/water separation, metals removal
 Biological treatment, oil/water separation, metals removal

Trans-Flo® Secondary Clarifier



The Envirex Trans-Flo® rectangular activated sludge clarifier has three proven technologies combined to exploit the process benefits of each. The peripheral feed and takeoff adopted from our Rim-Flo® process insures efficient plant hydraulics, hydraulic sludge removal from our Tow-Bro® process provides positive control of settled solids, and our rectangular chain and scraper system with polymeric components provides removal of settled solids and floating material.

Features and Benefits

Basic Process:

1. Influent is introduced in a channel along the tank length, reducing inlet velocities
2. The downward, transverse flow uses the full width of the tank volume and eliminates short circuiting while allowing solids to drop uniformly out of suspension
3. Settled solids are moved by the chain and scraper system to hydraulic sludge removal headers in the floor, spaced uniformly across the tank, to provide rapid solids removal and positive control of the sludge blanket

Benefit:

Efficient hydraulic design, combined with the positive control of the settled solids in the Trans-Flo clarifier results in a high rate system capable of outperforming conventional systems by 25-50%, which corresponds to a smaller footprint and overall lower installed costs.

MARKET

Municipal Wastewater

Industrial Processes

APPLICATION

Secondary sedimentation of activated sludge for new plants or refurbishments and upgrades of existing plants

Secondary sedimentation of activated sludge for new plants or refurbishments and upgrades of existing plants

Intake Systems



Rex® and Link-Belt® Intake Systems offer a complete line of equipment in removing floating and suspended debris from raw water.

- Traveling Water Screens
 - Thru-Flows
 - Dual Flow Screens
 - Center Flow Screens
 - Fish Protection Screens
- Trash Rakes
 - Conventional
 - Grab Style
- Bar Racks
- Stop Gates
- Wash Water Pumps

Features and Benefits

Typical applications:

- Power Utilities
- Water Treatment Plant
- Pulp & Paper
- Refinery
- Steel Mills

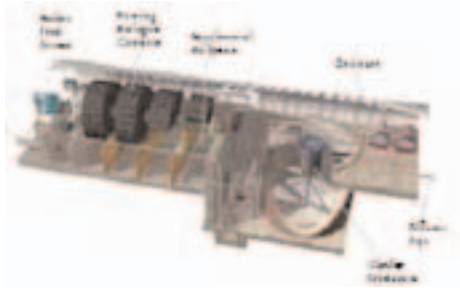
MARKET

Municipal Drinking Water
 Power Industries
 Chemical Process Industries
 HPI Oil & Gas
 Pulp & Paper

APPLICATION

Intake screens and systems
 Intake screens and systems
 Intake screens and systems
 Intake screens and systems
 Intake screens and systems

Envirex® RBC Clarifier Package Plant



The Envirex® RBC package plant offers simple, compact and economical treatment for domestic wastewater. The combination of RBC's and a circular clarifier into a single compact system achieves a high degree of treatment with effluent suitable for discharge directly into lakes and streams.

Optimal applications include:

- schools
- housing developments
- office complexes
- recreational camps
- highway rest stops

Features and Benefits

- Lack of complicated controls means performance is not dependent on operator skill.
- Captive microbial population prevents upsets due to fluctuating hydraulic or organic loads.
- Proven, reliable equipment designed for long life with minimal service.
- Lower power requirement than SBR and EA process.
- Can be designed for any desired degree of treatment achievable through biological means.
- Mechanical scraping and skimming assures solids are rapidly removed.
- Aesthetically pleasing FRP enclosure provides protection from the elements and reduces building cost.
- Low operating and maintenance costs, compact footprint and competitive construction cost mean cost effective treatment for a broad range of applications.

MARKET

HPI/CPI Oil & Gas

APPLICATION

Biological Treatment, Groundwater Treatment

VertiCel® Process Aeration Technology



The VertiCel® process is superior to other aeration technologies because it saves energy and space, while producing an unparalleled effluent quality. It is ideally suited for wastewater treatment plants with process flows above two million gallons per day.

Features and Benefits

- Low power costs - world's most efficient aeration system
- Lower maintenance and operating costs
- Reduced construction cost - common wall construction
- No downtime required for tank equipment replacement or repair
- State-of-the-art process control system
- Flexibility

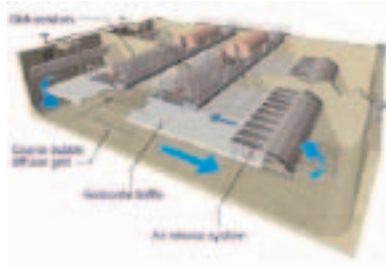
MARKET

Municipal Wastewater
 Power Industries
 Chemical Process Industries

APPLICATION

New plants, refurbishments & upgrades, Add/upgrade of biological nutrient removal
 Biological treatment
 Biological treatment

Vertical Loop Reactor (VLR®) for Biological Treatment



The Vertical Loop Reactor(VLR®) process is a design based upon looped reactors in series that allows DO stratification. As such, it is suited for simultaneous nitrification/denitrification; biological phosphorus removal and storm water treatment.

Features and Benefits

- Common wall construction – lower construction costs
- Small footprint – less land area required
- Dual aerator design – operating flexibility
- Coarse bubble diffusers – easy to meet peak oxygen demands
- DO stratification – process adaptability, low power costs
- Handles excessive storm flows – peak flows five times the design flow
- Ease of maintenance - equipment is accessible

MARKET

Municipal Wastewater
 Chemical Process Industries
 Food & Beverage
 Power Industries

APPLICATION

New plants, refurbishments & upgrades, Add/upgrade of biological nutrient removal
 Biological treatment
 Biological treatment
 Biological treatment

Versatile MULTIBLOCK™ Filter Underdrain



MULTIBLOCK™ Underdrains provide a high quality, low cost, engineered product that is economical and versatile. MULTIBLOCK Underdrains can be fitted with the unique LaserShield media retaining system that eliminates the need for support gravel. Combined air and water backwash is possible using this system.

Features and Benefits

- HDPE plastic construction
- Snap together design
- Gasket seal between blocks
- Laser Shield™ media retention option
- Dual lateral design
- Integrates with MULTIWASH backwash
- Lightweight
- Corrosion resistant
- Easy to handle and install
- Easier to install
- No lubricant needed
- Corrosion resistant design
- Eliminates support gravel
- Minimizes depth required
- Uniform distribution
- Superior media clean
- Unlimited backwash duration

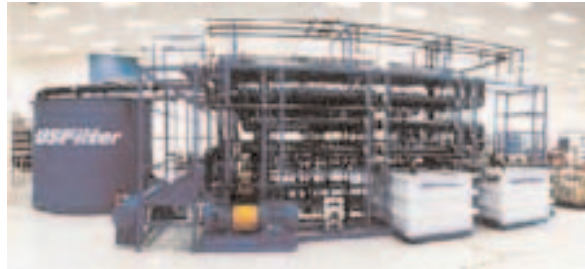
MARKET

Municipal Drinking Water
 HPI-Oil & Gas
 Power Industries
 Chemical Process Industries

APPLICATION

New plants, refurbishments & upgrades, Desalination RO-pretreatment
 Desalination RO-pretreatment
 Desalination RO-pretreatment
 Desalination RO-pretreatment

Memtek® Microfiltration System



The Memtek® Microfiltration System incorporates proprietary crossflow tubular membranes which remove precipitated contaminants and produce a high quality filtrate suitable for discharge or further treatment.

Features and Benefits

- PVDF (KYNAR®) membrane provides excellent chemical resistance and long life
- Tubular design allows for high solids loading
- Piped-in-place cleaning system is standard on all units
- Units are skid-mounted
- Rapid installation assured by skidded assemblies and mistake proof electrical connections

MARKET

Automotive
Microelectronics

APPLICATION

Wastewater Metals Removal Systems, Wastewater Recovery Systems
Wastewater, backside grinding, slicing, carollium reclaim

TotalTreat® Batch Precipitation System (BPS)



The TotalTreat® Batch Precipitation System (BPS) is a batch flow precipitation system that incorporates a single reaction tank to perform the precipitation, flocculation, and clarification processes.

The TotalTreat® Batch Precipitation System (BPS) is a fully automatic packaged system to perform batch chemical precipitation. The system includes a fiberglass reaction chamber with chemical injection pumps, pH meter, mixer and sludge transfer pump. A decant pump is available as an option.

The BPS can be used as a stand alone item or integrated as part of a larger system. The system requires influent, effluent and sludge process connections and a single power connection.

The BPS has been used in many industries and many applications. The chemistry used is selected to provide optimum treatment for the waste. The three standard equipment dosing pumps can be supplemented and additional instrumentation, such as ORP, is available as optional equipment.

Features and Benefits

- NEMA-4X electrical enclosure
- Compact design for small footprint
- Non-metallic fiberglass construction for superior corrosion resistance
- TEFC mixer motor
- Pre-piped
- * Factory tested
- Integrates with other IWS standard products
- Pre-wired
- Stand alone operation

MARKET

Automotive

APPLICATION

Wastewater Metals Removal Systems

Silverback™ Aqueous Cleaner Recycle System



The Silverback™ Aqueous Cleaner Recycle System uses advanced crossflow ceramic membrane microfiltration/ultrafiltration technology to purify contaminated cleaning baths.

The Silverback™ is designed to continuously purify aqueous cleaner baths by utilizing a ceramic microfiltration/ultrafiltration membrane in a crossflow mode of operation. The membrane is impervious to nearly all chemicals except for phosphoric and hydrofluoric acids. Temperatures up to 200 degrees Fahrenheit can be tolerated.

Contaminated cleaner is pumped from the cleaning line to the Silverback™ system. A feed valve, which is controlled by a level sensor, maintains a constant volume of cleaner in the process compartment. The contaminated cleaner is pumped through a bag filter and into a settling compartment where free oils and sludges are removed. From the middle of the settling compartment, the fluid flows into the process chamber. The solution is pumped through the membrane at a high recirculation rate. The contaminants are separated from the cleaner solution and concentrated. The purified cleaner solution flows back to the cleaner line.

Features and Benefits

- Stainless steel construction
- Durable, chemically inert ceramic membranes
- No solid hazardous waste disposal or costs due to membrane replacement
- Membrane life expectancy of 10 plus years
- Negligible oil drag-out into plating bath, finishing line or downstream processes
- * Consistently cleaner parts

MARKET

Automotive

Microelectronics

APPLICATION

Wastewater Metals Removal Systems

CMP Waste treatment

Vari-Cant® Jet Aeration Systems



The VARI-CANT® jet aeration system developed by Jet Tech Products utilizes proven principles of jet aeration, combined with state-of-the-art design and materials, resulting in a system with superior performance, efficiency and trouble-free operation.

The VARI-CANT® jet aeration system intermixes air with a motive liquid and injects the stream into the wastewater. The aerator itself consists of two jet nozzles. The motive liquid - recirculated mixed liquor is discharged from an inner nozzle into an outer mixing nozzle . Compressed atmospheric air is introduced, and sheared into tiny bubbles which are entrained in the motive liquid stream. As the stream is discharged into the surrounding mixed liquor, it forms a highly turbulent jet plume. The plume entrains the surrounding mixed liquor and brings it into contact with the tiny air bubbles, resulting in a extremely high oxygen transfer rate.

Features and Benefits

- High oxygen transfer efficiency
- Independent control of mixing and oxygen transfer
- No maintenance required
- Corrosion and abrasion resistant
- Suitable for any basin geometry
- Ideal for covered tanks
- Efficient cleaning system without dewatering
- Lower installation costs

MARKET

HPI/CPI, Oil & Gas

APPLICATION

Biological Treatment

OMNIPAC® Field-Erected SBR Plants



OMNIPAC® SBR (sequencing batch reactor) package plants are the perfect solution for a variety of municipal and industrial wastewater processing applications.

Features and Benefits

- Economical
- Fast turnaround
- Small footprint
- High quality effluent
- No sludge recycle system
- No clarifiers
- Flexible process

MARKET

Municipal Wastewater
 Power Industries
 Chemical Processing Industries
 Food & Beverage

APPLICATION

New plants, refurbishments & upgrades, add/upgrade of biological nutrient removal
 Biological treatment
 Biological treatment
 Biological treatment

Packaged Small Range MEMCOR® CMF Membrane Filtration System



Small Range CMF (Pressurized) Systems offer an affordable modular water treatment system with proven MEMCOR membrane technology. It is ideally suited for communities that desire a high quality water system with a small footprint, minimal installation and nominal operator attendance.

Features and Benefits

- Factory assembled and tested
- Compact modular design
- Modular add-on packages/options
- Alternate membrane material available
- Automated membrane integrity test
- Pre-RO application
- Reduced installation costs
- Decreased on-site startup/commission time
- Reduces overall footprint requirement
- Lower clearance
- Operates via pumped or gravity feed
- Can be provided with primary skid
- Easy CMF expansion capability
- Oxidant tolerant membranes
- Assures high quality treatment with 99.99% removal of crypto and giardia

MARKET

Municipal Drinking Water
 Municipal Wastewater
 HPI-Oil & Gas
 Pharmaceutical Industries
 Electronics Industries
 Power Industries
 Chemical Process Industries

APPLICATION

New plants, refurbishments & upgrades, Improved pathogen removal & destruction, Desalination RO-pretreatment
 Tertiary treatment
 New plants, refurbishments & upgrades, Industrial high-purity water, Tertiary treatment, Desalination RO-pretreatment
 Industrial high-purity water
 Industrial high-purity water
 Industrial high-purity water, Tertiary treatment, Desalination RO-pretreatment
 Industrial high-purity water, Tertiary treatment, Desalination RO-pretreatment

Contact: info@usfilter.com

Website: www.usfilter.com

Large Range MEMCOR® CMF-S Microfiltration



The CMF-S system design is based upon the solid foundation of the MEMCOR CMF technology that has been proven in more than 700 installations across all countries and markets. The high performance of MEMCOR CMF Microfiltration is ideal - and affordable - for municipal water, wastewater, and water reuse treatment. Capable of 6 log removal of giardia and cryptosporidium. MEMCOR CMF-S unique in-situ integrity testing validates removal down to two-tenth of a micron

Features and Benefits

- Self contained membrane cells
- Ease of membrane submodule service
- Alternate membrane material (PP or PVDF)
- Fully automated
- Automated membrane integrity test
- Designed for ease of expansion and modifications
- Economical
- Membrane cells with integral components
- Face piping and valves, as required
- Lower installation costs
- Proprietary membrane service access platform for the removal and servicing of membrane
- Individual isolation of membrane racks or cloverleaf
- Oxidant tolerant membranes
- Low cost, highly flexible solution
- Minimizes installation and operating cost
- Low overall clearance
- Allows remote monitoring
- Simplifies operator control
- Assures high quality treatment with 99.99% removal of crypto and giardia
- Superior barrier protection
- Minimal space requirements, readily accessible
- Retrofit of existing systems
- Option packages available
- Low operating
- Low waste disposal
- High operating efficiency

MARKET

Municipal Drinking Water
 Municipal Wastewater
 HPI-Oil & Gas
 Pharmaceutical Industries
 Electronics Industries
 Power Industries
 Chemical Process Industries

APPLICATION

New plants, refurbishments & upgrades, Improved pathogen removal & destruction, Desalination RO-pretreatment
 Tertiary treatment
 New plants, refurbishments & upgrades, Industrial high-purity water, Tertiary treatment, Desalination RO-pretreatment
 Industrial high-purity water
 Industrial high-purity water
 Industrial high-purity water, Tertiary treatment, Desalination RO-pretreatment
 Industrial high-purity water, Tertiary treatment, Desalination RO-pretreatment

Contact: information@usfilter.com

Website: www.usfilter.com

MemJet® Xpress Membrane Bioreactor Packaged Plants



The MemJet® Membrane Bioreactor (MBR) packaged plant is a robust wastewater treatment process with inherent features designed to reduce maintenance and provide reliable and efficient wastewater treatment for small scale applications.

Features and Benefits

- Standard Plant Designs Available
- Pre-assembled and pre-skidded MBR equipment package
- Compact design
- Advanced nitrogen and phosphorus removal
- Prescreening
- Low-cost wastewater treatment system
- Quick and easy installation

MARKET

Municipal Wastewater

 HPI-Oil & Gas

 Food & Beverage

 Pharmaceutical Industries

APPLICATION

New plants and refurbishments, Add/upgrade of biological nutrient removal, Tertiary treatment

 Tertiary treatment, Biological treatment, oil/water separation, metals removal

 New plants and refurbishments, Add/upgrade of biological nutrient removal, Tertiary treatment

 New plants and refurbishments, Add/upgrade of biological nutrient removal, Tertiary treatment

IPS Composting System



The IPS Composting System is an enclosed in-vessel, agitated, aerated, automated composting process with effective biofiltration odor control. The system transforms dewatered biosolids, MSW and other organic residuals into high quality compost. U.S. EPA determined that the system meets PFRP.

Features and Benefits

- Automated, agitated bin process
- Totally enclosed composting system
- Modular system
- Composts biosolids, source separated organics (SSO), manure, yardwaste and municipal solid waste (MSW)
- Multiple deep aerated bays utilizing smaller footprint
- CompMaster™ Computer Control
- Meets US EPA Class A and VAR
- 27 facilities worldwide
- Produces highest quality compost for resale
- Ease of operation and maintenance
- Speeds up composting process
- Capture emissions for effective odor control
- Protection from elements
- Isolates and composts multiple waste streams simultaneously
- Ease of future expansion
- Flexibility for variation in characteristics and quantities of organic materials
- Cost competitive to ASP and other enclosed systems
- Automated temperature control, moisture addition, humidity control, material tracking, monitoring and reports
- Exceptional Quality (EQ) compost
- Provide experience
- Yardwaste composted for market in 4 weeks

MARKET

Municipal Wastewater Solids Waste

APPLICATION

Sludge reduction, drying, composting

Versatile Trident® Modular Adsorption Clarifier Filtration System



Water filtration using the Trident® system provides high quality water treatment with minimal footprint and ceiling height. This is a clarifier filter system. Access to the clarifier is simplified by removing the hold down screen and floating the buoyant media temporarily into the washtrough area while accessing the clarifier.

Features and Benefits

- Pre-fabricated tankage
- Automatic operation
- Pre-engineered
- Buoyant Media Clarifier
- Two log removal credit of Crypto and Giardia; up to 3 log removal demonstrated in Pilot Studies
- Graveless underdrain system
- Minimizes building size and cost
- Minimizes installation cost and time
- Minimizes operator effort
- Minimizes design costs
- 75-95% Turbidity removal rates
- Increases filter run time
- Increased net production through raw water flush
- Smaller footprint compared to applicable conventional equipment
- Meets Enhanced Surface Water Treatment Rules
- Proven process through trials testing
- Eliminates costly gravel upsets

MARKET

Municipal Drinking Water

APPLICATION

New plants, refurbishments & upgrades, Improved pathogen removal & destruction

CDI-LX™ Continuous Electrodeionization – CEDI Systems



Continuous electrodeionization is your safe, chemical-free way to take RO (reverse osmosis) water to a higher level of purity. USFilter’s CDI-LX™ systems use our proven, patented process to produce an uninterrupted supply of high purity water, up to 18.2 megohm-cm. Also referred to as CEDI (Continuous Electrodeionization) and EDI (Electrodeionization) systems, CDI® systems are commonly used to remove boron, carbon dioxide, salt, silica, total dissolved solids (TDS) and total organic carbon (TOC).

Features and Benefits

- Rugged construction
- Ability to be hot water sanitized (certain pharmaceutical systems only)
- Hot water sanitization proven to >200 cycles with no detrimental effects
- High operating temperature (up to 45 degrees Centigrade; 113 degree fahrenheit)
- Easy validation
- Double o-ring design ensures completely leak-free operation
- High operating pressure (up to 100 psi)

MARKET

HPI-Oil & Gas
 Pharmaceutical Industries
 Electronics Industries
 Power Industries
 Chemical Process Industries

APPLICATION

Industrial high-purity water
 Industrial high-purity water
 Industrial high-purity water
 Industrial high-purity water
 Industrial high-purity water

EPV™ Systems



At USFilter, we understand what’s involved in validating your system. Our standardized validation protocols and support documentation, included with each system, ensures your system can be validated quickly.

- Developed for biotechnology and pharmaceutical applications
- Fast delivery
- Easy installation/skid mounted
- Includes standardized protocols and support documentation

Our document package includes:

- Validation Level Operation & Maintenance Manual
- Installation Qualification
- Operational Qualification
- P&ID, Plan View, Elevation View Drawings
- Standard Operating Procedures (SOPs)
- RO Microprocessor Controller Software Documentation

Whatever level of water quality you require, there’s an EPV System to meet your needs. Designed to produce flow rates from 0.1 to 50 gallons per minute (gpm) at the point of use, these integrated, skid-mounted systems include pretreatment, make-up water, storage and distribution equipment – everything you need to ensure a reliable, cost-effective supply of high-purity water. No matter what your water quality requirements, we deliver:

- USP 28 Purified Water
- CAP I
- ASTM I
- 18.2 megohm-cm resistivity

MARKET

Pharmaceutical Industries

APPLICATION

Industrial high-purity water

Reverse Osmosis (RO) Systems



Reverse Osmosis (RO) is a membrane-based treatment technology that removes contaminants from a water supply. Instead of removing the contaminants from the water, the water is removed from the contaminants --thus the name.

USFilter offers residential, commercial and industrial units to produce drinking water, industrial process water or high-purity water.

240 Series reverse osmosis systems produce from 5 to 20 gpm of high-purity water.

240 Series reverse osmosis systems produce from 5 to 20 gpm of high-purity water.

280 Series reverse osmosis (RO) systems produce from 25 to 150 gpm of high-purity water.

40 Series reverse osmosis (RO) systems produce from 1.8 to 32.0 gpm of high-purity water

BevMAX™ Reverse Osmosis - RO - Systems

CIP Series RO On-Site Cleaning Skids

FlowMAX™ Reverse Osmosis - RO - Systems

Pharm40 Reverse Osmosis - RO - Systems

PharmMAX™ Reverse Osmosis - RO - Systems

PowerMax™ Series Clean-In-Place Skids

PowerMax™ Series Reverse Osmosis - RO - Systems

ValueMax™ Reverse Osmosis - RO - Systems

Vantage™ L Series Reverse Osmosis - RO - Systems

Vantage™ V Series Reverse Osmosis - RO - Systems

Vantage™ W Series Reverse Osmosis - RO - Systems

Vantage™ H Series Reverse Osmosis - RO - Systems

MARKET

Electronics

APPLICATION

High purity water

PreVUE™ Systems Modular USP Water Generation



PreVUE™ Systems are built to industry standards:

- Stainless steel construction for appearance, cleanliness and durability
- Full-fit RO membranes for reduced biological contamination
- CDI-LX™ Systems for continuous electrodeionization and reliable operation
- 15" industrial hardened PC monitor for operator convenience
- Comprehensive validation documentation

Features and Benefits

Pre-Engineered:	Quick delivery keeps project moving fast
Validation:	Easily understood GAMP 4 formatted documentation
Integrated Controls and Human Machine Interface:	Facilitates your compliance to 21CFR Part 11
Single-skid Design:	Smooth start-up and Small footprint
Hot Water Sanitizable:	Automated for reliable sanitization
Proven Technologies:	RO and CDI-LX™ Systems for reliable, efficient and continuous operation
Seven sizes - nominal flow rates range from 2 - 25 gpm:	Flexible configurations to meet your productions needs

MARKET

Pharmaceutical Industries

APPLICATION

Industrial high-purity water

Wastewater Ion Exchange (WWIX) Services



USFilter's Wastewater Ion Exchange (WWIX) Service utilizes ion exchange resin canisters for the removal of dissolved heavy metals from a variety of rinse water and wastewater streams.

The Wastewater Ion Exchange Group designs and maintains systems to purify metal finishing rinses, contaminated groundwater, printed circuit board rinses and other metal bearing streams. Through the use of ion exchange resins, we capture and concentrate the heavy metals.

USFilter delivers removable canisters filled with ion exchange resins selected based on your particular contaminant. The wastestream is processed using the ion exchange media to capture and concentrate the heavy metals. Once the resin capacity is reached, USFilter returns to the site to remove the spent ion exchange canisters and deliver fresh canisters. The spent resin is transported to our RCRA-permitted facility, where the resin is regenerated for reuse. All metal bearing regeneration wastes are further processed for metal recovery - nothing goes to landfill.

In addition, we provide complete support services ranging from design to installation and system operation of your wastewater ion exchange system.

Our WWIX systems are designed for the treatment of dilute waters containing:

- Zinc
- Lead
- Cyanide metal complexes
- Copper
- Arsenic
- Cadmium
- Chrome
- Nickel

Features and Benefits

- Reduce operating costs
- Rapid response to new, stricter discharge limits
- Minimum space requirements
- No on-site waste treatment
- Compliance and safety
- Reduced capital spending
- Recovery vs. disposal

MARKET

Electronics

APPLICATION

Wastewater treatment, metals removal

Emergency Vapor Scrubber System RJ-2000



USFilter RJ Environmental Products' Emergency Vapor Scrubber Systems (EVSS) have been tested by an independent laboratory for chlorine releases from 150 lbs up to one ton and release rates up to 100 lbs/min with maximum discharge concentrations never exceeding 2 PPM. To the best of our knowledge, no other supplier has conducted independent testing at a C.A.B.O. approved testing facility.

Features and Benefits

- Factory assembled as a single unit to reduce costs for installation and maintenance
- Low pressure recirculation of scrubber liquid enhances safety
- Compact, low-profile design minimizes space required
- Vertical seal-less pump increases reliability
- Starts automatically upon leak detection to minimize risk

MARKET

Municipal Drinking Water

Municipal Wastewater

APPLICATION

New plants, refurbishments & upgrades

New plants, refurbishments & upgrades

LO/PRO® Odor Control System



RJ Environmental Products offers a complete line of wet scrubber odor control systems. By far our most popular, versatile and effective product is the LO/PRO Packaged Odor Control System. Since its introduction in 1994, the LO/PRO has become the industry leader.

Features and Benefits

- Factory assembled and tested prior to shipment
- Premium vinylester fiberglass reinforced plastic (FRP) construction
- Compact design
- Each system is custom designed

MARKET

Municipal Wastewater

APPLICATION

New plants and refurbishments

Stranco Chemical Feed Systems



USFilter Stranco Products brings together a wide range of resources to offer our customers an unmatched ability to meet virtually any chemical feed equipment need. From simple chemical metering pump skids to complex, computer-integrated systems requiring software development, Stranco Products has the knowledge and experience to design and deliver superior chemical feed systems. We combine a wide variety of well-known industry standard components with a solid understanding of application requirements to provide our customers with equipment designed to meet their individual needs. To avoid forced fits or "shoe horning" standard equipment, Stranco Products uses custom engineering, design, fabrication, and documentation to provide our customers with the most economical solution available.

Features and Benefits

- Standard chemical feed designs
- Custom engineered systems
- Turnkey capabilities
- Integrated systems
- In-plant service
- Single source solutions

MARKET

Municipal Water & Wastewater
 Industrial Process Water & Wastewater
 HPI/CPI, Oil & Gas, Mining
 Pulp & Paper
 Food & Beverage
 BioPharm, Ultra pure
 Power
 Automotive
 Electronics

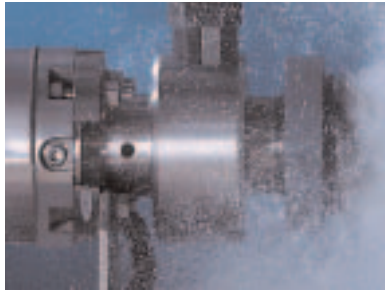
APPLICATION

Chemical Feed, cooling towers, boiler water, wastewater treatment process water
 Chemical Feed, cooling towers, boiler water, wastewater treatment process water
 Chemical Feed, cooling towers, boiler water, wastewater treatment process water
 Chemical Feed, cooling towers, boiler water, wastewater treatment process water
 Chemical Feed, cooling towers, boiler water, wastewater treatment process water
 Chemical Feed, cooling towers, boiler water, wastewater treatment process water
 Chemical Feed, cooling towers, boiler water, wastewater treatment process water
 Chemical Feed, cooling towers, boiler water, wastewater treatment process water
 High purity wastewater, Chemical feed

Contact: information@usfilter.com

Website: www.usfilter.com

Stranco Chemical Induction Systems



The Water Champ® vacuum chemical induction system has revolutionized the concept of chemical feed systems with its innovative design and unlimited chemical feed applications in potable water and wastewater treatment. The Water Champ's superior mixing characteristics represent a major step forward in chemical feed and disinfection applications. Virtually any process feed application can benefit from Water Champ's direct vacuum chemical induction capability. Water Champ eliminates the necessity of costly carrier/make-up water and conventional rapid mix systems. A unique feature of the Water Champ is its ability to provide the mixing intensity required to maximize chemical reaction while using less energy. USFilter Stranco Products offers the submersible, in-line, micro, and explosion-proof Water Champ models for a wide variety of chemical induction applications.

Features and Benefits

- High-quality diffusion/mixing
- Maximizes chemical concentration
- No chemical off-gassing
- Eliminates carrier or make-up water
- Efficient energy transfer

Water Champ Models:

Submersible Water Champ
 In-Line Water Champ
 Micro Champ
 Water Champ XP

MARKET	APPLICATION
Municipal Water	Disinfection, chlorination/dechlorination, CSO, BNR, Coagulation, Odor control, rapid mix
Municipal Wastewater	Disinfection, chlorination/dechlorination, CSO, BNR, Coagulation, Odor control, rapid mix
Industrial Wastewater	Disinfection, chlorination/dechlorination, CSO, BNR, Coagulation, Odor control, rapid mix
Intake Water	Disinfection, chlorination/dechlorination, CSO, BNR, Coagulation, Odor control, rapid mix
Process Water	Disinfection, chlorination/dechlorination, CSO, BNR, Coagulation, Odor control, rapid mix

Stranco Controllers



Stranrol Models:

Municipal Market:

- Stranrol DOCS
- Stranrol FVC
- Stranrol 880
- Stranrol 890

Industrial Market:

- Stranrol FVC
- Stranrol 880
- Stranrol 885,886,887
- Stranrol 916
- Stranrol 930

Aquatic Market:

- Stranrol System 3, 4, 5F, & 7
- Stranrol ECS
- Stranrol Set-Point
- Stranrol MG/L5

USFilter Stranco Products offers an extensive line of controllers for the municipal, industrial and aquatic markets. The Stranrol® brand is widely recognized as the premier control system in water, wastewater, process water and institutional water applications. The new Stranrol DOCS system provides unparalleled monitoring and control for municipal chlorination and dechlorination applications by combining ORP Technology and Residual Management in a single, innovative system. Stranrol Water Chemistry Control Systems from USFilter Stranco Products ensure crystal-clear pool and spa water, 24-hours-a-day, every day of the year. Stranrol controllers deliver continuous disinfection with pinpoint accuracy by precisely controlling pH and chlorine, bromine or ozone. Lastly, USFilter Stranco Products has raised the standards for water treatment control with the Industrial Stranrol family of transmitters and controllers. Whether the application is cooling or process water, the Stranrol controllers are easy to install, easy to operate, and economical to maintain. Nothing comes close to the precision and performance of a Stranrol.

Features and Benefits

- Complete disinfection management systems
- Innovative and patented control algorithms
- Exclusive High Resolution Redox (HRR) sensor technology
- Precise and reliable control
- Minimized maintenance and simplified operation

MARKET

- Municipal Water & Wastewater
- Industrial Process Water & Wastewater
- HPI/CPI, Oil & Gas
- Pulp & Paper
- Food & Beverage
- Automotive & Metal Finishing
- BioPharm
- Ultra-pure
- Power
- Institutional Pools & Spas, Water Parks
- Electronics

APPLICATION

Disinfection monitoring and control, chlorination/dechlorination, ORP/pH/Conductivity monitoring and control

Stranco Distribution Products



USFilter Stranco Products Distributed Products Division offers a collection of key products from well-known, quality manufacturers who are the industry leaders in water treatment equipment. Not only is USFilter Stranco Products the largest distributor of LMI chemical feed pumps and accessories, but we offer a number of different manufacturers chemical feed pumps, tanks, flowmeters, filters, control valves, enclosures, mixers, calibration equipment along with a host of instrumentation needed to apply specialty chemical treatment programs. The Distributed Products Division is dedicated to providing our customers with the chemical feed, monitoring, and test equipment necessary to meet water treatment requirements. The combination of an extensive inventory, variety of key products, and technical expertise positions the Distributed Products Division as a single-source supplier for end-users and water treatment professionals. Our competitive prices and unmatched service is the industry benchmark to provide our customers with added value and to exceed expectations.

Features and Benefits

- Quality products from well known manufacturers
- Extensive inventory for quick delivery
- World class customer service
- Toll-free technical support

MARKET

Municipal Water & Wastewater
 Industrial Process Water
 Industrial Wastewater
 HPI/CPI, Oil & Gas, Mining
 Pulp & Paper, Metal Finishing
 Food & Beverage
 BioPharm, Ultra-Pure
 Power
 Automotive

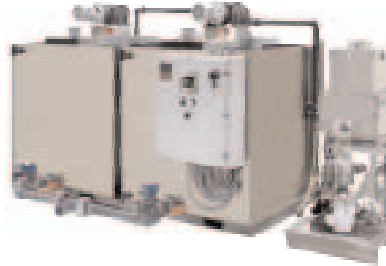
APPLICATION

Chemical Feed, cooling towers, boiler water, wastewater treatment, process water
 Chemical Feed, cooling towers, boiler water, wastewater treatment, process water
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Contact: information@usfilter.com

Website: www.usfilter.com

Stranco Polymer Feed Systems



USFilter Stranco Products is pleased to offer our customers the premier polymer feed system in the industry. The PolyBlend® polymer feed systems combine patented mix designs with years of application expertise to provide the best systems in the market. We offer a wide range of polymer feed systems to meet municipal water, wastewater or industrial process application requirements. Our liquid polymer systems are offered in the PB and M Series units which cover a wide range of water and polymer dosage applications. The dry polymer feeders, or DP Series, provide unsurpassed polymer preparation and are the benchmark in the industry. Since 1972 owners and operators of the PolyBlend Series have consistently reported improved polymer performance at reduced levels of polymer consumption in a wide range of applications. Stranco's complete line of liquid and dry polymer feed systems provide optimum polymer performance.

Features and Benefits

- Patented mixing technology
- Improved polymer performance
- Less polymer consumption
- Simple or advanced control options

MARKET	APPLICATION
Municipal Water & Wastewater	Liquid/Solid separation, water & wastewater processes, dewatering, clarification, thickening
Industrial Wastewater	Liquid/Solid separation, water & wastewater processes, dewatering, clarification, thickening
Mining	Liquid/Solid separation, water & wastewater processes, dewatering, clarification, thickening
Oil & Gas	Liquid/Solid separation, water & wastewater processes, dewatering, clarification, thickening
Pulp & Paper	Liquid/Solid separation, water & wastewater processes, dewatering, clarification, thickening
Food Processing	Liquid/Solid separation, water & wastewater processes, dewatering, clarification, thickening
Electronics	Liquid/Solid separation, water & wastewater processes, dewatering, clarification, thickening

Wallace & Tiernan Analyzers and Controllers



USFilter's Wallace & Tiernan Products provides continuous on-line residual monitoring and control of the critical disinfection process in potable water, wastewater, and cooling water treatment applications. Using proven amperometric measurement technology and disinfection-dedicated controllers, chemical feed rates are accurately and economically controlled.

Analyzer Technologies:

- Micro/2000® Residual Analyzer for monitoring and control of Chlorine, Chlorine Dioxide, or Potassium Permanganate residuals at ranges from 0-0.1 to 0-50 mg/L.
- Deox/2000® Dechlorination Analyzer for on-line measurement of both SO₂ and chlorine residuals in wastewater effluent.
- Depolox® 3 Plus residual analyzer for measurement of chlorine, ozone, and chlorine dioxide oxidants, as well as fluoride or pH in potable water. Measurement ranges are 0-0.2 to 0-20 mg/l (0-10 for ClO₂).
- Depolox 4 residual analyzer for measurement of free or total chlorine with bare-electrode technology for fast response time (T90<20s).¹
- Depolox Basic residual analyzer for measurement of free or total chlorine in potable water at ranges of 0-0.2 to 0-20 mg/l.
- Depolox Pool residual analyzer for measurement and control of complete swimming pool disinfection and water quality.¹
- MSV – Multi Sensor Validation System for accurate, reliable pH measurement. Utilizes three pH electrodes to provide an average pH output.¹
- TMS561 Turbidimeter for continuous, on-line measurement of turbidity in filtered or raw water. Ranges are 0-10 NTU and 10-1000 NTU.
- A790 Amperometric Titrator for measurement of disinfectant residuals for calibration of on-line analytical equipment.

¹ Available in Europe only

- P42 i-cal Photometer for calibration of on-line analytical equipment with time-stamp function.¹
- Acutec 35 and GMS¹ gas leak detector for safety monitoring of Chlorine, Ammonia, and Sulfur Dioxide supplies.

Control Technologies:

- PCU (process control unit) for set point control of disinfection systems. Choice of four control modes and multiple system alarm parameters.
- SCU (signal conditioning unit) for flow proportional control. Features dosage and flow scaling for a wide range of flow conditions.
- V600 Disinfection Controller for multiple control modes including automatic duty/standby control for peak demand and continuous operation.¹
- ChemSept Controller for the prevention and treatment of septicity in sewage works. Can be used alone or as part of a complete chemical dosing system.¹
- ChemPhos Controller for the reduction of phosphate levels in wastewater effluents. Can be used alone or as part of a complete chemical dosing system.¹
- CCU and DCU changeover units to provide duty/standby switching for uninterrupted chemical supply and dosing.¹

MARKET

APPLICATION

Municipal Water and Wastewater
 Industrial Wastewater
 Industrial Process Water
 Industrial Water Treatment
 Food and Beverage
 Recreational Pools and Spas

Disinfection, pH control, fluoridation control
 Disinfection, pH control
 Disinfection, pH control
 Disinfection, pH control
 Disinfection, pH control
 Disinfection, pH control

Wallace & Tiernan Dechlorination Systems



USFilter’s Wallace & Tiernan Products Dechlorination Systems are ideal for monitoring and reducing high residual chlorine levels to meet regulatory restrictions on effluent discharge. In addition, these systems help to reduce or entirely eliminate chlorine residual in municipal and industrial waste, while minimizing overfeed of costly dechlorinating chemicals.

Technologies:

- V2000, V10k Gas Feed systems feeding sulfur dioxide
- Deox/2000® Dechlorination Analyzer for accurate, on-line measurement of chlorine and sulphur dioxide residuals in any effluent stream
- Encore® 100 and 700, Chem-Ad, Chemtube® PPS, Chemtube 200, Chemtube 2000 and Premia® 75 metering pumps for metering sodium bisulfite and sodium metabisulfite solutions
- LVN 2000 liquid feed system for metering sodium bisulfite through vacuum induction
- PCU (process control unit) featuring “center zero” control of the dechlorination process to either a chlorine or SO₂ set point

MARKET

Municipal Wastewater
 Industrial Wastewater
 Industrial Process Water
 Recreational Pools
 Taste and Odor Control

APPLICATION

Dechlorination
 Dechlorination
 Dechlorination
 Dechlorination
 Dechlorination

Wallace & Tiernan Gas Disinfection



USFilter’s Wallace & Tiernan Products provides vacuum-type solution feed chlorinators for the disinfection and treatment of municipal and industrial water and wastewater. Chlorinators are offered with capacities from 1.3 PPD up to 10,000 PPD. They are available in direct container, wall-mounted, or free standing orientations. Mobile units also are available for emergency or temporary applications. Most of the units offer automatic control of feed, based on flow and/or disinfection residual.

Models:

- S2k cylinder-mounted unit - maximum capacity 100 PPD chlorine
- S10k container-mounted unit - maximum capacity 500 PPD chlorine; also can be used for sulphur dioxide, carbon dioxide, and ammonia
- V10k wall-mounted unit - maximum capacity 500 PPD chlorine; also can feed sulphur dioxide, ammonia, and carbon dioxide
- V2000 module or wall-mounted gas feeder - maximum capacity of 10,000 chlorine
- Complete line of accessories including Evaporators to convert liquefied gas to gaseous state for high capacity feedrates and automatic switchover systems to provide continuous disinfection operation, as well as valves, fittings, and diffusers.

MARKET

Municipal Water and Wastewater
 Industrial Wastewater
 Industrial Process Water
 Cooling Water
 Recreational Facilities

APPLICATION

Disinfection, slime removal, taste and odor control
 Disinfection, slime removal, taste and odor control
 Disinfection, slime removal, taste and odor control
 Disinfection, slime removal, taste and odor control
 Disinfection, slime removal, taste and odor control

Wallace & Tiernan Liquid Feed



USFilter’s Wallace & Tiernan Products provides safe, reliable, and accurate methods of controlling the addition of chemicals to water sources or processes. The broad line of liquid feed equipment can be used to accurately dose chemicals ranging from sodium hypochlorite and caustics to viscous polymers and slurries. The complete line of liquid feed equipment offers an extensive range of capacities from 0.06 gph (0.22 lph) to over 15,000 gph (55,000 lph).

Technologies:

- Premia® 75 solenoid metering pump - maximum capacity 25 gph (94.6 lph)
- Chem-Ad® and Dosator¹ mechanically actuated diaphragm metering pump - maximum capacity 200 gph (756 lph)
- Encore® 100 mechanically actuated diaphragm metering pump - maximum capacity 48 gph (182 lph)
- Encore® 700 non-loss-of-motion mechanically actuated diaphragm metering pump - maximum capacity 634 gph (2400 lph). Also available in a plunger pump configuration¹ for high pressure requirements.
- Chemtube® 200 hydraulically actuated tubular diaphragm metering pump - maximum capacity 120 gph (454 lph)
- Chemtube® 2000 hydraulically actuated tubular diaphragm metering pump -maximum capacity 1056 gph (4000 lph)
- Chemtube® PPS peristaltic pump - maximum capacity 15400 gph (58290 lph)
- LVN 2000 vacuum induction feed system - maximum capacity 528 gph (2000 lph)
- Merlin Dilution-by-Weight System automatically and accurately controls the dilution of neat chemicals to optimize metering pump operation.¹

¹ Available in Europe only

MARKET	APPLICATION
Municipal Water and Wastewater	Disinfection, pH control, odor control, sterilization, slime control, corrosion control, fluoridation, flocculation
Industrial Wastewater	Disinfection, pH control, odor control, sterilization, slime control, corrosion control, flocculation
Industrial Process Water	Disinfection, pH control, odor control, sterilization, slime control, corrosion control, flocculation
Industrial Water Treatment	Disinfection, pH control, odor control, sterilization, slime control, corrosion control, flocculation
Food and Beverage	Disinfection, pH control, odor control, sterilization, slime control, corrosion control, flocculation
Recreational Pools and Spas	Disinfection, pH control, odor control, sterilization, slime control, corrosion control

Wallace & Tiernan Ultraviolet Disinfection Systems



USFilter’s Wallace & Tiernan Products Ultraviolet systems provide a cost-effective, reliable, operator-friendly solution for low and medium flow rate disinfection applications. The system consists of a 316 SS reaction chamber with either low pressure or medium pressure lamps, and a remotely mounted microcontroller for complete control and monitoring capabilities. All systems are independently certified according to DVGW W294 Protocol to provide guaranteed system output at specific flowrates.

The system is effective in controlling waterborne pathogens, such as bacteria, viruses, and parasites, including Cryptosporidium or Giardia, which can be resistant to conventional chemical disinfection.

Technologies:

- Barrier® M and UV Astron¹ UV Systems utilize polychromatic, medium pressure lamps for treating flowrates up to 2.5 MGD. These feature a compact, in-line design and low head loss for installation flexibility.
- UV Wave¹ Systems utilize monochromatic, low pressure lamps for low flow rate applications up to 0.5 MGD. The unique configuration provides for easy installation into existing piping systems.

¹ Available in Europe only

MARKET	APPLICATION
Municipal Drinking Water	Disinfection
Process Water	Disinfection
Industrial Water Treatment	Disinfection
Food and Beverage	Disinfection
Recreational Pools and Spas	Disinfection

Wallace & Tiernan Chlorine Dioxide Systems



USFilter’s Wallace & Tiernan Products Chlorine Dioxide Systems produce chlorine dioxide (ClO₂) in solution by combining sodium chlorite and chlorine or sodium chlorite and hydrochloric acid. Available capacities range from 0.5 to 240 pounds of chlorine dioxide per 24 hours. Chlorine Dioxide is a powerful disinfectant and oxidizing agent that must be generated on-site due to its unstable nature. Unlike chlorine, ClO₂ is unaffected by pH, does not combine with ammonia to form chloramines, and does not form trihalomethanes (THMs) or other organic compounds.

Technologies:

- Series 85-250 and DIOX C¹ System combines sodium chlorite and chlorine gas to produce up to 240 PPD of chlorine dioxide.
- DIOX A¹ System utilizes sodium chlorite and hydrochloric acid to produce chlorine dioxide. There are three size systems available from 0.5 to 240 PPD.

¹ Available in Europe only

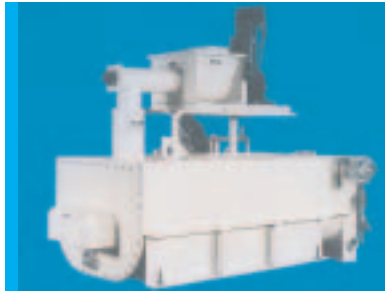
MARKET

Municipal Water and Wastewater
 Industrial Waste Water
 Industrial Process Water
 Industrial Water Treatment

APPLICATION

Disinfection, Taste and Odor Control, Sterilization, Slime Control
 Disinfection, Taste and Odor Control, Sterilization, Slime Control
 Disinfection, Taste and Odor Control, Sterilization, Slime Control
 Disinfection, Taste and Odor Control, Sterilization, Slime Control

Wallace & Tiernan Dry Feed Systems



USFilter’s Wallace & Tiernan Products manufactures an extensive and diversified line of chemical feeders and systems for water and wastewater treatment applications. This includes gravimetric and volumetric weighbelt feeders, screw-type volumetric feeders, lime slaking systems, feeder tank systems, and polymer preparation systems.

Technologies:

- Series 31-165 Digital Weighbelt Feeder - maximum capacity 46200 lb/hr
- Volumetric Feeders
 - Series 32-050 Volumetric Screw Feeder with percent timer - maximum capacity 50 cu ft/hr
 - Series 32-055 Volumetric Screw Feeder SCR variable speed controlled - maximum capacity 50 cu ft/hr
 - Series 32-215 Volumetric Belt Feeder - maximum capacity 840 cu ft/hr
 - Series 32-300 Industrial Volumetric Screw Feeder - maximum capacity 500 cu ft/hr
- A758 Paste-Type Lime Slaker - maximum capacity 8000 lb/hr
- Series 35-100 and 35-150 Solution Tank Systems
- Series 35-300 or Universal PolyPrep Dry and Liquid Polymer Feed Systems
- Jetpak Systems for dustfree feeding of powdered activated carbon.¹

¹ Available in Europe only

MARKET	APPLICATION
Municipal Water and Wastewater	pH control, scale control, softening, sludge conditioning, flocculation, coagulation
Industrial Wastewater	pH control, scale control, softening, sludge conditioning, paper processing, flocculation, coagulation
Power Generation	pH control, scale control, softening, sludge conditioning, flocculation, coagulation, flue gas desulphurization
Industrial Process	Softening, pH control
Recreational Pools and Spas	Taste and Odor, Filtration

Wallace & Tiernan OSEC® On-Site Hypochlorite Generation Systems



USFilter’s Wallace & Tiernan Products OSEC Systems produce a dilute solution of sodium hypochlorite from saturated brine on-site and on-demand. The concentration is much lower than that of commercial hypochlorite and is therefore less hazardous and not subject to the same degree of decomposition. This electro-chemical process is ideal for a wide range of municipal and industrial water and wastewater applications. Operation is completely automatic, making these systems suitable for unmanned locations.

Technologies

- OSEC-A System for very low capacity requirements up to 2.6 PPD (1.2 kg/day) of available chlorine.¹
- OSEC- LC System is a low capacity system available in capacities of 2.7 PPD (6 kg/day), 5.4 PPD (12 kg/day), and 10.8 PPD (24kg/day) of available chlorine¹
- OSEC BP System is a low capacity system available in capacities of 12 PPD (26 kg/day), 24 PPD (53 kg/day), 36 PPD (80 kg/day), and 50 PPD (110 kg/day) of available chlorine.
- Mini OSEC is a pre-packaged, self contained system-
 - Low capacity package supplies a maximum capacity of 37 PPD (16.8 kg/day) of available chlorine
 - High capacity package supplies a maximum capacity of 75 PPD (34 kg/day) of available chlorine
- OSEC-NT System produces a high concentration hypochlorite solution utilizing an integral membrane for capacities up to 340 PPD (154 kg/day) of available chlorine.¹
- OSEC B Series is a tubular designed unit with capacities up to 2000 PPD (900 kg/day) of available chlorine

¹ Available in Europe only

MARKET	APPLICATION
Municipal Water and Wastewater	Disinfection, slime control, taste and odor control
Industrial Wastewater	Disinfection, slime control, taste and odor control
Industrial Process Water	Disinfection, slime control, taste and odor control
Cooling Water	Disinfection, slime control, taste and odor control
Recreational facilities	Disinfection, slime control, taste and odor control

Auto-Shell™ Walnut Shell Filters



Auto-Shell walnut shell filters remove oily contaminants from water, and are used in treating oilfield produced water, refinery wastewater, steel mill direct spray and caster water, ethylene plant quench water, copper concentrate decant and cooling water.

Patented Auto-Shell filters use a deep bed of 100-percent black walnut shells that have excellent surface characteristics for coalescing and filtration, as well as superior resilience to attrition. They offer a 66-inch nutshell bed – the deepest in the industry. These filters eliminate the need for flat media retention screens, and use only one media-scrubbing pump for up to eight filters. This simplifies the design and lowers the cost of multiple filter systems.

Features and Benefits

- No flat media retention screen required
- Only one media scrubbing pump is needed, simplifying the design and lowering the cost
- Deep nutshell bed produces superior effluent quality, longer filtration runs and greater throughput efficiency
- The backwashing process uses the raw process water, which eliminates the need for air scour, stand-by filters or additional storage tanks
- Twice the flux rate of conventional filters in the same application
- The filter removes three times the amount of solids before cleaning is required

MARKET

HPI/CPI Oil & Gas

APPLICATION

Oil/Water Separation

Hydro-Clear® Sand Filter



When you need gravity filtration, use the Hydro-Clear® pulsed-bed sand filtration system. It features a unique underdrain system and a shallow bed of mono-media, fine-grained sand, a design which permits the filter media to be “pulsed” periodically as solids build up.

What does this mean to you? Your filter runs are extended and the filter is automatically kept on-line, despite varying loads and changing water characteristics.

Features and Benefits

- Shallow, 10-inch bed - low-profile design reduces excavation, concrete and related structural costs
- Mono media - 0.45 mm sand effectively captures particles down to 3 micron; positive barrier against solids and turbidity
- Pulse Mix® system - regenerates media surface, extending filter runs; automatically keeps the system on-line during upsets
- Hydro-Scour® system - effectively backwashes media in 3.5 minutes, at low power and water rates
- Chem-Clean® system - enables semi-automatic media cleaning; no manual grease removal, media replacement or prechlorination
- Easy-to-operate control system - fully automated controls keep plant in compliance 24/7/365
- Custom design - steel package plants or field-erected concrete tanks for flow rates from 10 gpm to 120+ mgd
- Pilot testing - proof at your site
- Ideal for retrofits - enables you to upgrade filtration capabilities using existing tanks
- Service - qualified, experienced field technicians readily available for service and/or upgrades to your filtration system

MARKET

Municipal Wastewater
 HPI-Oil & Gas
 Power Industries
 Chemical Process Industries

APPLICATION

Tertiary treatment
 Tertiary treatment
 Tertiary treatment
 Tertiary treatment

PACT® Biological Treatment Systems



The PACT (powdered activated carbon treatment) system combines biological treatment and carbon adsorption into a single, synergistic treatment step, resulting in significant cost savings and performance advantages over other systems.

Features and Benefits

- Uses powdered activated carbon
- Improved performance of aerobic and anaerobic biological systems by stabilizing them against upsets and shock loading
- Color and odor control
- Reduced costs for disposing of residuals
- No problems with prefiltration or column plugging

MARKET

HPI-Oil & Gas
CPI
Pharmaceutical

APPLICATION

Biological treatment, oil/water separation, metals removal
High strength wastes and speciality applications, Biological treatment
Wastewater treatment, Biological treatment

Produced Water Treatment



Clean water is important to the oil and gas industry, especially when it comes to cleaning oily produced water before reinjection or discharge to the environment. Our worldwide experience includes thousands of onshore and offshore installations.

Products for produced water treatment:

Solids Separation

- Solid/Liquid Hydrocyclones

Primary Produced Water Separation

- Corrugated Plate Separators (CPS)
- API Separators
- Solid/Liquid Hydrocyclones
- Liquid/Liquid Hydrocyclones

Secondary Produced Water Separation

- Induced Air/Gas Flotation Separators
- Dissolved Air/Gas Flotation Separators
- Vertical Gas Flotation

Tertiary Produced Water Separation

- Walnut Shell Filters
- Media Filters
- Activated Carbon Filters

Advanced Treatment

- Biological Treatment
- Ion Exchange Softening
- Warm Lime Softeners
- Hot Lime Softeners

Solids Handling

- Gravity Thickeners
- Filter Presses
- Belt Filter Presses
- Sand Jetting Systems
- Centrifuges

Chemical Feed

- Chemical Feed Systems

VOC Control

- Activated Carbon

Support Equipment

- Potable Water Treatment Systems
- Marine Growth Control Equipment

Impressed Current Cathodic Protection

MARKET

HPI-Oil & Gas

APPLICATION

New plants, refurbishments & upgrades

Lancy CPS Gravity Separator for Oil/Solids Removal

The Lancy Corrugated Plate Separator (CPS) uses gravity to remove oil and solids from wastewater. It is used in industrial wastewater, industrial filtration, oil/water separation, clarification/separation, and storm water and sewer overflow applications.

The Lancy-CPS separator provides an effective and economical solution for oil/solids removal. The unit's gravity design separates light from heavy materials in a smooth, automatic flow. With more than 3,000 installations, this proven design yields consistent results.

Lancy-CPS separators are ideal for applications such as:

- oil field produced water
- oily wastewater pretreatment
- ballast water
- storm water run-off

Features and Benefits

- Corrugated plate interceptor (CPI) plate pack design facilitates the free oil removal process
- Configuration and number of plates provide effective area for free oil removal down to 15 ppm and 60 microns
- Tolerates up to 1,000 ppm total suspended solids without affecting effluent quality
- Units are typically one-fifth the size of an in-ground API separator, and produce a finer effluent quality
- No moving parts, which means low maintenance for you
- Meets API standards with its quality construction

MARKET

HPI-Oil & Gas

APPLICATION

Oil/water separators

Liquid/Liquid Hydrocyclone



The high efficiency liquid/liquid hydrocyclone provides maximum oil/water separation efficiency, and is used in industrial process water, industrial reuse, oil/water separation and clarification/separation applications.

Our liquid/liquid hydrocyclone is one of the most advanced, yet least complicated oil/water separation devices available. It effectively removes free oil and grease in a compact package, at a cost far less than other types of separators. Liquid/liquid hydrocyclones are ideal for oily process water and oil-field produced water applications.

Features and Benefits

- Compact design with no moving parts
- Hydrocyclone liner features twin inlet ports for superior hydraulic stability
- Stable oil core allows higher removal, reducing or eliminating the need for emulsion breaking chemicals
- Hydrocyclone operates at turndown ratios from 5:1 to 15:1
- Materials of construction provide superior erosion and corrosion resistance for longer design life

MARKET

HPI-Oil & Gas

APPLICATION

Oil/Water Separators

Zimpro® Inclined Plate Separators



By using our inclined plate separators, you get effective solids separation and turbidity reduction for a wide range of applications.

Zimpro® inclined plate separators are designed to remove and thicken suspended solids and flocculated solids from water and wastewater in one complete system. The system consists of rapid mixing and flocculation tanks, followed by an inclined plate section with either a sludge thickener or a sludge hopper underneath.

Features and Benefits

- 90 percent smaller footprint than conventional clarifiers
- Efficient operation, solids loading and feed distribution
- Counter current design reducing re-entrainment of settled solids from bottom of plates
- Proven experience and performance with flows ranging from 15 gpm to more than 250 mgd
- Low maintenance
- Few moving parts
- Low-cost field erection
- Quick start up
- Self-cleaning system

MARKET

Automotive
 Electronics
 Municipal

APPLICATION

Wastewater Pretreatment, Wastewater Metals Removal
 Wastewater HF Treatment
 Drinking water treatment

ZIMPRO® Wet Oxidation



Zimpro Wet Oxidation and Wet Air Oxidation (WAO) systems are used primarily for treatment of high strength industrial wastewater streams.

Wet oxidation is the oxidation of soluble or suspended components in water using oxygen as the oxidizing agent. When air is used as the source of oxygen the process is referred to as wet air oxidation (WAO). The oxidation reactions occur at temperatures of 150° C to 320° C (275° F to 608° F) and pressures from 10 to 220 barg (150 to 3200 psig).

The wet oxidation process can pretreat difficult wastewater streams, making them amenable for discharge to a conventional biological treatment plant for polishing. The process is also used for oxidation of contaminants in production liquors for recycle/reuse.

Common wet air oxidation applications:

- Treatment of high strength wastewater, including spent caustic streams generated by ethylene crackers and refineries
- In-process, for treatment and recycle/recovery of process liquor streams
- Biological sludge conditioning and destruction.

Wet oxidation has historically been used for municipal wastewater sludge applications. At lower temperatures and pressures, sludge is conditioned to improve dewatering. This is referred to as Low Pressure Oxidation (LPO). At higher temperatures and pressures, biological sludge can be destroyed, as an alternative to incineration.

Features and Benefits

- Pretreatment of high strength wastewater to produce biodegradable residual organics
- Destruction of specific compounds
- Elimination of toxicity or reactivity
- Process liquor treatment for recycle/recovery
- Gross reduction of Chemical Oxygen Demand (COD)

MARKET

HPI/CPI - Oil & Gas

APPLICATION

High strength wastes, spent caustics and other speciality applications