

Integrated Water Management



Servyeco



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Presentation

SERVYECO was founded with the goal of contributing through our products and services to the improvement of processes and environment by means of proactive optimization of water systems of our clients, we promote reusability improving the cost-benefit relation, with flexible service provided by a team of experts specialized in water treatment.

Our background and experience has made our company specializes according to the market demands, in this way, a new concept of integrated water management grow with **SERVYECO**, through our business units:

⌚ **Servyeco Chemistry:**
Manufacture of chemical products for water treatment.

⌚ **Servyeco Services:**
Integral services for water management.

⌚ **Servyeco Engineering:**
Engineering and equipment for water treatment.

Our main strength is supplying global solutions to the needs of each client.

What sets us apart

Our experience of over 15 years in the water treatment sector, a specialized team dedicated to providing customized service, innovative and environmentally friendly products and technological services developed in our central facilities of 7,000 m² and a network of national and international assistance allow us to differentiate ourselves in the market adding value through:

- **Quality:** We follow most demanding standards of quality and environment, our products and/or services are certified according to UNE-EN ISO-9001 and 14.001, our laboratory is accredited by ENAC and has the approval and authorization of the administration as collaborating agency.

- **Confidence:** Service with the security of comprehensive support. Experts who respond to your needs at any moment.

- **Optimisation of costs:** We optimise the time, primary materials and energy used, minimizing water losses. We reduce the overall operational costs of your processing system. Experts who offer the complete solution.

- **Continuous improvement:** Innovation in chemistry and technology. Experts who are always searching for the best solution.



Chemical Products

- Chemical products for industrial water treatment
- Chemical products for wastewater treatment

Services

- Analysis of water, environments, surfaces, sludge, soil and food
- Conservation and maintenance of facilities
- Environmental Health: Prevention of Legionella and indoor air control
- DDD

Engineering and Equipment

- Industrial and urban Water Treatment Plants
- Technologies for adaptation and control of input and process water



Wastewater Treatment

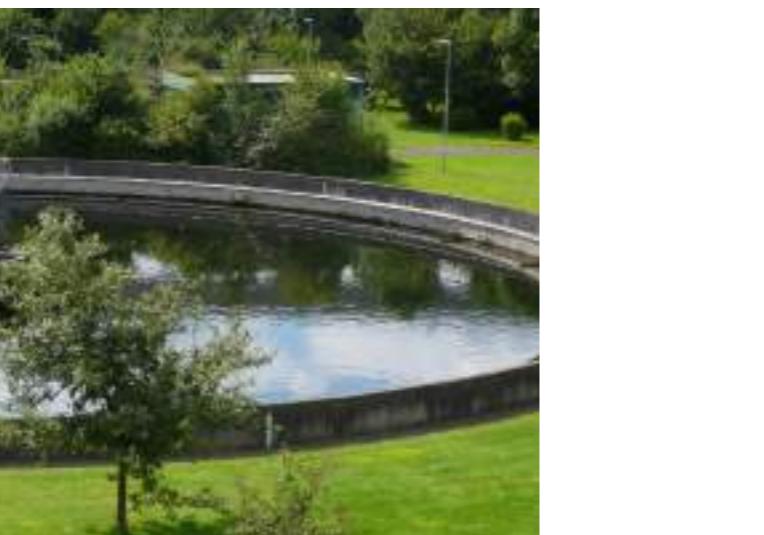
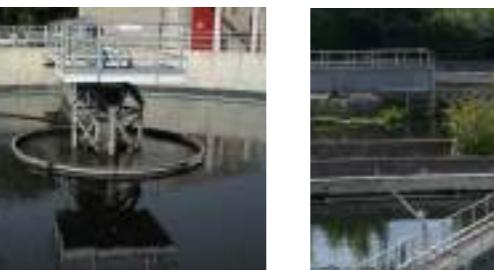
Our products used in your wastewater and sludge treatment facilities allow us to be highly competitive. Our specialists audit your installations, offering personalised treatments according to your needs. We develop customised products and services, reducing maintenance costs, production of wastes and the possibility of penalties. For all that, we improve the image our clients present to their markets, employees, public authorities and society in general.

Our high-efficiency polymers and coagulants have been specially developed for use in solid/liquid separation processes, such as sedimentation, flotation and dehydration.

We want to highlight our innovative line of organic coagulants of plant origin (ECOTAN BIO Series), they represent the best option when you need an environmentally friendly solution that allows to obtain high performance with a natural product that does not provide metals and salts in water or in sludge. With this, biological processes are facilitated, without increasing the conductivity of water and without additional modifiers of pH. These products preserve the safety of persons and improve the maintenance and durability of facilities by their non-corrosive characteristics.

Our range of synthetic coagulants (SINTEC, ECOMIX and ECOTEC Series) can improve the cost-benefit relation against other inorganic coagulants based on aluminium or iron, reducing the volume of sludge, reducing treated water cost/m³ and significantly improving water quality.

We provide products that allow remove specific contaminants such as metals or fluorides as well as other necessary products used for controlling odour and foam.



CHEMICAL PRODUCTS FOR THE WASTEWATER TREATMENT

PRODUCT	ACTIVE SUBSTANCE	APPLICATION
COAGULANTS FOR WASTEWATER TREATMENT		
ECOMIX SERIES	Synthetic liquid coagulant based on aluminium, chloride free	Primary flocculant for wastewater treatment
SINTEC SERIES	Synthetic coagulant based on aluminium, sulphates free	Primary flocculant for wastewater treatment
ECOFLUOR SERIES	Inorganic liquid coagulant	Primary flocculant for fluoride removal
ECOTEC SERIES	Synthetic liquid coagulant based on iron and aluminium	Primary flocculant for wastewater treatment
ECOTAN BIO SERIES	Organic liquid coagulant plant origin	Primary flocculant for wastewater treatment
ANIONIC FLOCCULANTS		
ECOPOL AS SERIES	Anionic solid polyacrylamides with different ionic charges and MW	Secondary flocculant for wastewater treatment
ECOPOL AL SERIES	Anionic liquid polyacrylamides with different ionic charges and MW	Secondary flocculant for wastewater treatment
CATIONIC FLOCCULANTS		
ECOPOL CS SERIES	Cationic solid polyacrylamides with different ionic charges and MW	Secondary flocculant for flotation wastewater treatment. Sludge dewatering
ECOPOL CLR SERIES	Emulsion of reticulated cationic polyacrylamide with high MW and ionic charges	Centrifugal sludge dewatering
ECOPOL CL SERIES	Emulsion of cationic polyacrylamides with different ionic charges and MW	Secondary flocculant for flotation wastewater treatment. Sludge dewatering
ANTIFOAM AGENTS		
ADIFOAM IC SERIES	Suspensions with different concentrated of silicone	Remove foam formation in wastewater treatments
ADIFOAM HC SERIES	Aliphatic hydrocarbons and non ionic surfactants mixture	Avoid foam formation in wastewater treatment
ADIFOAM TB SERIES	Ethylene Oxides and Silicone Derivates	Biological Processes
ALGICIDES		
BACTEROL SERIES	Quaternary ammonium solution	Remove algae formation in pools and water facilities
BACTERIOCIDES		
ECOBAC C SERIES	Terpenes mixture	Inhibits the bacteria spread and controls microbiologically water circuits
DEODORISERS		
ECOSULF CL SERIES	Chlorite alkaline solution	Wastewater and sludge odour eraser
ECOSULF DL SERIES	Zinc ricinoleate	Odour absorbent
BLEACHING AGENTS		
ECOLOR SERIES	Cationic polymer based on resins	Bleaching agent utilized in wastewater effluent coming from textile industry
BACTERIAL ACTIVATORS		
ECOACTIV SERIES	Lyophilized bacteria mixture	Activators of biomass in biological wastewater treatments

Industrial Wastewater Treatment

Servyeco has developed an extensive range of products designed to satisfy a wide variety of needs within the context of industrial water treatment.

They are available both in a multi-functional format and as customized solutions, in order that each client obtains the treatment best suited to their specific processes.

Each client is audited individually by our specialists and the result of their studies result in significant savings, both immediate and long-term, by improving the efficiency of their boilers, their heating units, refrigeration systems and systems of reverse osmosis.

Multi-function line

Our experience in dealing with the water treatment processes used by our clients has enabled us to develop a broad range of single-application products which cover all protection areas of the systems. Our multi-function products are easy to use since we keep the installation protected with a single product.



Biocides

Microbiological monitoring of the installations is essential for their proper functioning and to avoid the outbreak of illnesses which could cause public health problems such as legionellosis (Legionnaires disease), now regulated by extensive legislation.

Our biocides are registered for preventing Legionnaires disease in installations at risk. We select the most suitable product for individual case, taking into account the microbiological problem, the physical-chemical conditions of the water and the features of the installation. We offer oxidising and non-oxidising biocides and prepare customised treatments.

Biodispersal Agents and Cleaners

The presence of organic and inorganic deposits reduces the flow velocity of industrial systems, causing costly stoppages and favouring the microbiological pollution of the units. It becomes necessary to eliminate them through our series of specific products maintains the installation in a perfect state of preservation and cleanliness.

Anti-Foaming Agents

The appearance of foams causes problems with matter dragged towards the steam and condensation lines. That requires the use of anti-foaming agents to prepare the waters in the boiler.

PRODUCT	ACTIVE SUBSTANCE	APPLICATION
CHEMICAL PRODUCTS FOR COOLING CIRCUITS: ANTISCALING AGENTS AND CORROSION INHIBITORS		
INCUTEC SERIES	Mixture of phosphonates and acrylic derivatives	Antiscaling agent for cooling circuits
OXTEC DAC SERIES	Mixture of zinc salts, phosphonates and acrylics	Antiscaling and anticorrosive agent for cooling circuits
OXTEC DMF SERIES	Mixture of organic polymer, molybdates and dispersants	Multifunctional products for semi-open circuits. Corrosion inhibitors in closed circuits
OXTEC DCU SERIES	Toltriazol derivatives	Specific corrosion inhibitors for facilities with copper
CHEMICAL PRODUCTS: BIOCIDES		
ECOCIDE IS 30	Isothiazolones mixtures	Registered biocide preventing Legionella in cooling circuits
ECOCIDE BR 55	Chloro bromo hydantoin	Biocide
ECOCIDE DB 20	Dibromo nitro propionamide	Biocide
ECOCIDE TH 23	Tetrakis (hydroxymethyl) phosphonium sulfate	Biocide
ECOCIDE AC 10	Didecyl dimethyl ammonium chloride	Biocide
ECOCIDE PR 2525	Hydrogen peroxide	Biocide
CHEMICAL PRODUCTS FOR COOLING CIRCUITS: BIODISPERSANTS		
ECODIX DF	Polyalcohols mixture	Biodispersant
CHEMICAL PRODUCTS FOR HYDRAULIC SYSTEMS: ANIFOAM		
SERIE TECFOAM IC	Silicon suspension at different concentration	Remove the foam formation
SERIE TECFOAM HC	Aliphatic hydrocarbons and non ionic surfactants mixture	Avoid foam formation in hydraulic systems
CHEMICAL PRODUCTS FOR REVERSE OSMOSIS: ANTISCALING AGENTS		
SERIE OSMOSER DS1	Mixtures of phosphonic acids and neutralized carboxylic	Antiscaling agent for reverse osmosis membranes. Some formulations are specific to sea water
SERIE OSMOSER DW	Mixtures of carboxylic acids	Antiscaling agent for sea water
SERIE OSMOSER D	Mixtures of phosphonates and acrylics	Antiscaling agent for reverse osmosis
CHEMICAL PRODUCTS FOR REVERSE OSMOSIS: CLEANING AGENTS		
SERIE OSMODIX DA	Acid solution containing tensioactives	Cleaning agent to remove inorganic scales and iron deposits
SERIE OSMODIX DH	Alkaline solution containing tensioactives	Cleaning agent to remove organic deposits
SERIE OSMODIX DOL	Formulated solutions with anionic surfactants	Cleaning agent to remove organic deposits
CHEMICAL PRODUCTS FOR BOILERS: ANTISCALING AGENTS, ANTICORROSIVE AGENTS, DEOXYGENATION AGENTS, MULTIFUNCTIONAL AGENTS		
SERIE CALTEC DL	Alcohols mixture	Corrosion inhibitor, specially indicated for production stops
SERIE CALTEC DMF	Varied mixture of active substances	Antiscaling agent Corrosion inhibitors Anticorrosive for high pressure boiler Deoxygenates Amines fixers FD Products
CHEMICAL PRODUCTS FOR BOILERS: CLEANING AND PASSIVATING AGENTS		
SERIE FULDIX DD	Alkaline solution based on DEHA	Boiler passivator
SERIE CALDIX L 100	Inhibit acids mixture with and without colour indicators	Scale and corrosion cleaner used in boilers
CHEMICAL PRODUCTS FOR DRINKING WATER: ANTISCALING AGENTS / ANTICORROSIONS		
SERIE OSMOSER WP	Polyphosphates solutions	Antiscaling agent for networks drinking water
SERIE OSMOSER RM	Mineral salts	Remineralizer for osmotic water for human consumption

S services

Accredited Testing Laboratory

The **SERVYECO** laboratory is constituted by a team of technologists and analysts composed of chemists, biologists and pharmacists with high qualification and technical capacity for designing sampling plans, test procedure and evaluation of results, which allows us to offer a wide range of services in the analysis and counselling to the maximum technical extent in the strictest confidence and independence.

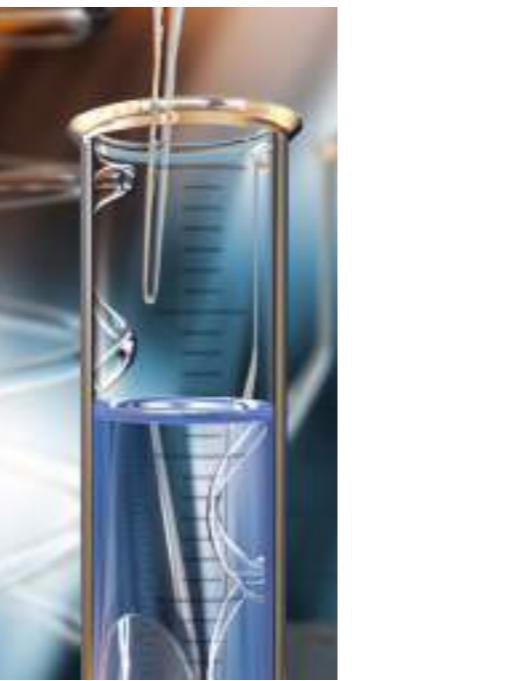
SERVYECO is a collaborator company officially recognised by the public administration. Our laboratories are certified by ENAC for the monitoring and quality of water and we are registered with the state Public Health department to work in other areas such as atmospheres, surfaces, food products and the prevention and monitoring of Legionnaire's Disease.



Delivering Results

The new communication technologies allow us to provide results in a fast and efficient way, when analyzes have been completed. By querying "on-line" and through our website www.servyeco.com we provide immediate information of their test reports.

At our customers disposal is always our technical team to assist in interpreting and advising on the results, providing advice on compliance with current legislation.



Our main activities:

- Water Analysis: Control of drinking water, wastewater, industrial, pools, Legionella,...
- Sludge and soil analysis
- Environments and surfaces analysis
- Food analysis
- Sampling punctual or composite
- Technical advice on urban and industrial wastewater treatment



Certifications and Certificates

Laboratory certified by the National Certification Organisation **ENAC** in accordance with the criteria of UNE-EN ISO/IEC 17025 for physicochemical and microbiological testing in water.

Certification by AENOR for a quality system in accordance with **UNE-EN ISO 9001:2008** regulation.

Certification as a system of environmental management in accordance with **UNE-EN ISO 14001:2004** regulation.

Inscription in the Registry of Public Health, authorization and recognition of accreditation to carry out physicochemical and microbiological analysis in drinking waters, pools, food, environments, surfaces and Legionella, by the ministries of the following regional administrations:

- Generalitat Valenciana
- Junta de Castilla y León
- Generalitat de Catalunya
- Gobierno de Canarias
- Región de Murcia
- Gobierno de las Islas Baleares
- Comunidad de Madrid
- Junta de Andalucía
- Comunidad de Castilla-La Mancha
- Gobierno de La Rioja
- Gobierno de Aragón
- Gobierno Vasco

Title of collaborator entity of the hydraulic administration by the Ministry of the Environment for the control of water discharges.

Inscription in the Registry Collaborating Entities: Generalitat Valenciana, Gobierno de Aragón y Comunidad de Madrid.

S services

Facilities Maintenance

Preservation and maintenance

Servyeco technical department maintaining has all registrations and authorizations required for develop their professional activity, consists of a highly qualified team specialized in the conservation and maintenance of wastewater treatment facilities.

Our goal is manage and lead in an efficient way maintenance operations, for this we have management software on-line via mobile devices and fixed control probes that allow us to significantly improve our efficiency and keep informed our customers at any time.

We have developed a service that follows the needs of our clients, providing appropriate assistance, from punctual assistance to integrated management of the facilities.



Operations description

Facility types

Industrial and urban wastewater treatment plants.
Reverse osmosis treatment plants and ion exchange.
Wastewater treatment plant of water supplies, pumps and headers.
Sanitary water systems, public swimming pools and decorative fountains.
Water cooling systems.

Study and diagnostics

Study of facilities, initial diagnostic, report of proposed improvements and customized methodologies of work and maintenance.

Water and sludge study, analysis, Jar-Test, bioengineering studies, bioavailability and biodegradability, optimization of physicochemical and biological treatments.

Study of energy efficiency and reuse of resources, water reuse, water recovery and reduce consumption.

Maintenance

Predictive: using diagnostic tools, analysis, testing and calibrations we reduce downtime, avoid production losses and optimize the management of maintenance staff in a planned way.

Preventive: we create a technical inventory, with manuals, drawings, equipment characteristics, we design technical procedures with periodic work; we carried out a exhaustive frequency control indicating the date to perform the work, and record all repairs, spare parts and costs that help to plan in order to promote the reliability and durability of the equipment.

Corrective: correction of faults and failures when is necessary with a rapid response capability.

SERVYECO boasts a team highly qualified technical experts, working exclusively in the engineering and development of water treatment technologies. We take the high standards demanded by our clients as an opportunity allowing us to provide innovative solutions, confident in our experience and flexibility.

Our R+D+I department designs mobile pilot plants with the goal of guaranteeing the results expected by our clients to the greatest possible degree.

Treatment of Process and Consumption Waters

Treatments using membranes (reverse osmosis, ultrafiltration, microfiltration, etc.).

Membrane treatments permit the physical separation of organic and inorganic compounds from the water. The characteristics for the building and operation of the membranes will depend on the size of the compound or molecule we desire to eliminate.

Demineralization systems by selective ionic interchange (decalcification, iron and boron removal).

The simplicity and economy of our equipment allows us to separate, depending on the solid used (resin), many cationic and anionic inorganic compounds such as Boron, Lead, Iron, Calcium, Magnesium, Nitrates, etc. We can also eliminate such organic compounds (TOC) as phenols, alcohols, etc. from the water.

Disinfection systems (ultraviolet light, ozonation, chlorination...)

Depending on the microbiological characteristics and the volume of water to treat, we have many effective alternatives for disinfecting water. The ultraviolet radiation equipment contains UV-C lamps that are highly efficient in eliminating micro-organisms and pathogens, and consume very little electricity.

In disinfection by ozonation, ozone is generated (great oxidising potential) in an ozonator, and is added in a contact reactor where the disinfection takes place.

The addition of oxidising chemical products (sodium hypochlorite, hydrogen peroxide...), allows us to achieve a safe disinfection of the water, provided by reliable control equipment.

Filtration systems

These are used as refining systems for the elimination of solids. We have sand filters or ring filters available, depending on the physical-chemical characteristics of the water required.



Industrial and Urban Waste Water Treatments

Lamellar settlers. Physical-chemical treatments for eliminating colloidal solids are carried out in the lamellar settlers. They are manufactured as modular equipment, including coagulation, flocculation and pH adjustment reactors. By using lamellas, high performances in separating solids by decanting are achieved in a reduced space. We have equipment using highly advanced technology in the automatic control of the plants.

Conical settlers. Conical settlers are installed in treatment plants with high flow volume, or one with a high content of suspended solids. In this system, the sludge is channelled by a sweeper to the lower part of the settler, where they are extracted for subsequent dehydration.

DAF floaters. This equipment is fundamentally designed for the physical-chemical elimination of organic matter and suspended solids. They are manufactured as modular equipment, including coagulation, flocculation and pH adjustment reactors. By using dissolved air, high performances in separating solids by flotation are achieved in a reduced space.

Urban treatment plants. The urban treatment plants are designed depending on the equivalent population, and use by residences and other services. The installations designed for small communities or industries are produced in the form of modules to facilitate their installation and operation. In installations designed for large communities, the waste water treatment is carried out in various stages, distinguishing between pre-treatments, primary treatments (physical-chemical), secondary treatments (biological) and tertiary treatments. These treatments are produced according to needs of our client and the final use for the treated water.

Biomembrane reactor (BMR). Biomembrane reactors (MBR) are the most complete system for treatment of waste water with high organic pollutant content. The high quality of the treated water in a reduced space and the ease of transporting the equipment accounts for the great interest our clients show in this technology. The versatility and efficiency of this treatment allows us to treat industry and/or urban waste water.

Photocatalytic oxidation systems using ozone (PCO). This is an advanced oxidation system low maintenance costs and high yields of purification, for the removal of easily biodegradable organic matter.

Sludge Treatment

Sludge thickening.

Sludge thickening allows concentration of settled solids, with the final goal of obtaining optimal results in the subsequent dehydration treatments.

Sludge dehydration (filter presses, belt filter presses, centrifuges, filter bags...).

The nature of the sludge, organic or inorganic, the concentration of suspended solids and generated volume will determine the best suited treatment for sludge dehydration. Through sludge dehydration, a solid is obtained that can be handled and reused.



Projects Completed



Industrial wastewater treatment plant. Flow 1.000 m³/h.



Industrial wastewater treatment plant. Flow 80 m³/h.



Industrial wastewater treatment plant. Flow 190 m³/h.



Industrial wastewater treatment plant. Flow 5 m³/h.



Industrial wastewater treatment plant. Flow 300 m³/h.



Sludge thickener.



Industrial wastewater treatment plant. Flow 150 m³/h.



Portable industrial wastewater treatment plant. Flow 2 m³/h.

Projects Completed



Portable modular demonstration pilot plant. Flow 2 m³/hora.



Reverse osmosis. Flow 100 m³/day.



Filter press for sludge dewatering.



Pretreatment osmosis filter. Flow 100 m³/day.



Filter press for sludge dewatering.



Two-stage reverse osmosis. Flow 25 m³/day.



Industrial wastewater treatment plant. Flow 16 m³/day.



Boron removal treatment. Flow 3 m³/h.



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