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WASTEWATER TREATMENT

At Avlon Inc., we are driven by a singular vision — delivering smart, sustainable, and scalable engineering solutions that address the critical needs of water, energy, and environment. With a proven track record across the Philippines and Southeast Asia, we specialize in technologies that serve industries, communities, and the planet.

Our wastewater treatment solutions are engineered to meet stringent DENR DAO 2016-08, as amended by DAO 2021-19 regulatory standards while ensuring efficient, low-maintenance operations. From MBBR to electrocoagulation and DAF systems, we provide customized treatment processes that safeguard water bodies and public health.

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Who We Are

About Us

With over 35 years of expertise in wastewater treatment plant, air pollution control equipment's, industrial steam boiler including power plants and oil refinery design, engineering, construction and commissioning, AVLON has been a trusted industry leader since 1980. Renowned for excellence, we have played a key role in pioneering projects across India's oil and refinery sector, setting new standards in quality and innovation.

In 2015, AVLON expanded its operations to the Philippines, establishing itself as a premier integration contractor in the Energy and Environmental Sector. We operate with a strong infrastructure, including state-of-the-art heavy lifting and construction tools, a full-scale fabrication shop, a vast warehouse, and an advanced design and engineering facility.

With a commitment to excellence and innovation, AVLON continues to lead the way in shaping the future of the Energy and Environmental Sector in Philippines.

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Avlon's Advanced Electrocoagulation (EC) Technology

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Electrocoagulation is an electrochemical water treatment technology designed to remove complex pollutants that are difficult to treat through conventional biological or chemical processes. It is particularly effective for wastewater streams containing heavy metals, emulsified oils, dyes, suspended solids, colloidal particles, phosphates, and refractory organic compounds. Unlike traditional chemical coagulation, which requires large quantities of chemicals, EC generates coagulants directly inside the reactor through electrochemical reactions. This makes the process highly efficient and adaptable for treating wastewater from industries such as metal finishing, textile dyeing, food processing, pharmaceuticals, chemicals, and petrochemicals.

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The core principle of electrocoagulation is the electro-dissolution of sacrificial electrodes, typically aluminum or iron, when an electrical current is applied through the wastewater. As the current passes between the electrodes, metal ions are released into the water and hydrolyze to form metal hydroxides. These hydroxides act as powerful coagulants that destabilize suspended particles and dissolved contaminants. Simultaneously, tiny hydrogen bubbles generated during electrolysis attach to the formed flocs and lift them to the surface through a process known as electroflotation, enabling easy separation of the pollutants.

Electrocoagulation reactors are typically designed with parallel electrode plates arranged in monopolar or bipolar configurations, allowing optimal current distribution and treatment efficiency. Critical operating parameters such as current density, hydraulic retention time, electrode spacing, and conductivity of the wastewater are carefully controlled to maximize pollutant removal while minimizing energy consumption. When properly optimized, EC systems can achieve substantial reductions in Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), oil and grease, heavy metals, and color, making it an excellent pre-treatment step before biological processes such as Moving Bed Biofilm Reactors.

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Avlon's Electrocoagulation systems are engineered with high-purity aluminum electrodes, automated polarity reversal, integrated rectifier panels, and advanced control systems to ensure stable and energy-efficient operation. Our modular EC reactors are designed for easy integration with downstream treatment processes such as Dissolved Air Flotation, Lamella Clarifiers, and biological treatment systems. With extensive experience in treating complex industrial effluents, Avlon delivers robust, low-maintenance EC solutions that meet the stringent discharge limits of DENR DAO 2016-08 and DAO 2021-19, ensuring reliable environmental compliance and long-term operational performance.

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