WATER 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.

In water treatment, we offer advanced filtration, softening, disinfection, and reverse osmosis systems designed for industrial and institutional applications. These systems ensure consistent water quality while optimizing resource use and operating costs.

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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 Water Softening Technology

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Water softening is a specialized ion-exchange treatment process designed to remove hardness-causing minerals such as calcium (Ca^{2+}) and magnesium (Mg^{2+}) from water. Hard water can cause severe operational issues in industrial systems, including scale formation in boilers, heat exchangers, cooling towers, pipelines, and process equipment. This scale reduces heat transfer efficiency, increases energy consumption, and shortens equipment lifespan. Water softeners are therefore widely used in industries such as power generation, manufacturing, food processing, textiles, commercial laundries, and HVAC systems, where consistent water quality is essential for maintaining operational efficiency and equipment reliability.

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The core principle of water softening is cation exchange, where hardness ions in the water are replaced with sodium or potassium ions. Inside the softener vessel, water flows through a bed of strong acid cation exchange resin, which contains negatively charged functional groups. As hard water passes through the resin bed, calcium and magnesium ions are attracted to the resin and exchanged with sodium ions. This process effectively removes hardness from the water, producing softened water that prevents scale formation and improves the performance of downstream equipment.

Over time, the ion exchange resin becomes saturated with hardness ions and loses its softening capacity. To restore its functionality, the system undergoes a regeneration cycle, where a concentrated brine solution (sodium chloride) is passed through the resin bed. The high concentration of sodium ions displaces the accumulated calcium and magnesium ions from the resin, flushing them out of the system. This regeneration process is carefully controlled through automated valves and timers to ensure consistent softening performance and efficient salt consumption.

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Avlon's Water Softening Systems are engineered with high-quality ion exchange resins, corrosion-resistant pressure vessels, automated multi-port control valves, and optimized regeneration cycles to ensure reliable and efficient operation. Our modular systems can be customized for various capacities and are easily integrated with boiler feedwater systems, reverse osmosis plants, and industrial water treatment processes. With extensive experience in industrial water treatment solutions, Avlon provides durable and energy-efficient softening systems that protect critical equipment, reduce maintenance costs, and ensure compliance with industrial water quality standards.

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