Water Treatment Chemicals

US Industry Study with Forecasts for 2017 & 2022

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Gains will reflect healthy growth in the oil, gas, and mining industries, a rebound in manufacturing output, and an increased need to protect companies’ investments in water treatment equipment.

**US demand to rise 3.2% annually through 2017**

Demand for water treatment chemicals in the US is forecast to rise 3.2 percent per year to $6.7 billion (15.1 billion pounds) in 2017. Gains will reflect not only healthy growth in the oil, gas, and mining industries and a rebound in manufacturing output, but also the increased use of scale control and other water treatment chemical products that help protect companies’ investments in water treatment equipment. A shift in product mix favoring more efficient and less hazardous chemicals that have higher prices will also promote growth in market value. Additionally, chemical demand will be supported by efforts to recycle water, as water treated for reuse usually needs greater conditioning than fresh supply water.

**Energy, mining sectors to be fastest growing markets**

The energy and mining markets are projected to show the fastest growth through 2017. In the energy market, the primary driver will be the rise in oil and gas production from hydraulic fracturing activities, which require large volumes of water. Industry efforts to reuse water, as well as tighter restrictions on treated wastewater in some states, will further support growth. In the mining market, an expected increase in mine output and a continued emphasis on wastewater remediation will support gains in water treatment chemical demand. Manufacturing markets are expected to recover from the weakness of the 2007-2012 period, when output was hampered by the struggling economy.

**Scale, foam control agents to be fastest growing types**

Increasing investment in water treatment equipment going forward will generally support greater water treatment chemical consumption as companies seek to avoid fouling, scale, foam, and corrosion to maximize equipment life and operating efficiency. Scale control agents are expected to show the fastest growth through 2017, followed by foam control agents. In addition to the boost from increased use of water treatment equipment, demand for these products will be supported by a shift to more expensive chemicals and increased water recycling activities. Biocide demand growth, however, will be restrained by rising use of disinfection equipment.

The larger, more mature categories of water treatment chemicals are expected to show more modest growth, with gains driven by trends in equipment use, water use and recycling, and changes in product mix. For example, demand for higher value coagulants and flocculants will be supported by greater use of membrane separation systems and by an increased emphasis on reducing sludge volumes.
MARKETS

Mining & Mineral Processing

Demand for water treatment chemicals in the mining and mineral processing market is expected to rise 4.0 percent per year to almost one billion pounds in 2017. In volume terms, demand is forecast to increase 3.3 percent per year to $450 million in 2017. This healthy growth will be supported by an expected rebound in mine production, and by efforts to retreat and reuse water whenever possible. Additionally, users in the mining and mineral processing market are facing increasingly stringent standards for wastewater quality, which will further promote demand for water treatment chemicals.

Water treatment chemical demand in the mining and mineral processing market is dominated by corrosion inhibitors, coagulants and flocculants, scale control agents, pH control agents, and chelating agents. Water treatment is a crucial part of the mining and mineral processing industry, as water is necessary to maximize mine production and increasing mineral recovery from ore. Process water can be fouled in mining applications, sometimes requiring a significant amount of treatment and treatment during use. Because of the many contaminants that impact mine water quality, mine wastewater has long been considered one of the most toxic types of industrial wastewater. The water is usually very acidic, with high levels of heavy metals and other contaminants that require the use of corrosion inhibitors, pH control agents, scale control agents, and chelating agents to prevent damage to equipment and to promote equipment functionality.

Together, wastewater and process water applications collectively dominate the majority of demand for water treatment chemicals in the mining and mineral processing market; in 2012, these two applications represented over 68 percent of demand. Wastewater is the larger application by a small margin, as wastewater from mining and mineral processing is generally very heavily contaminated and must be treated before it can be released to the environment.
Albemarle Corporation is a global supplier of specialty and fine chemicals that enhance consumer products. The Company operates through three segments: Polymer Solutions, Catalysts, and Fine Chemistry.

Albemarle is active in the US water treatment industry through the Fine Chemistry segment, which posted sales of $785 million in 2012. The segment is active through two divisions, of which the Performance Chemicals division manufactures various chemicals suitable for use in commercial and industrial water systems and equipment. Among these products are bromine-based biocides and activated aluminas.

**Bromine-Based Biocides** – Albemarle’s bromine-based biocides are sold under the ALBROM, MAXXIS, XTRABROM, SANIBROM, and STABROM brand names. In general, these biocides are designed to be effective against bacteria, fungi, algae, slime, and mollusks. For example, the Company’s ALBROM products include ALBROM 100PC biocides, which feature stabilized bromine compounds and are designed for use as a disinfectant in swimming pools, spas, hot tubs, and fountains. These biocides are produced in nugget forms and are also capable of oxidizing organics in pool water.
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