### US Industry Study

**Defoamers**

**Study # 1232**

**February 2000**

**$3400**

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**Annual gains to approach 5%**

US demand for defoamers will advance 4.7 percent annually to $655 million in 2004. Growth will result from several factors, including the improving performance of several key end-use markets, higher performance expectations and stricter environmental regulations. These developments will contribute greatly to overall demand growth, as enhanced performance and regulatory criteria are leading consumers to choose higher value defoamers.

**Higher value types to lead growth**

The most notable trend in product development has been the emergence of more sophisticated defoamers. Blended products, which contain multiple active ingredients such as fatty acids, esters, oils and/or silica in a water base, are growing in prominence due to their environmental profile, reduced effect on finished products and general effectiveness in foam control.

**Water-based defoamers to grow 6.7% per annum**

Demand for water-based formulations will post healthy advances through 2004, when they will comprise 63 percent of total demand. Water-based defoamers are compatible with products such as aqueous coatings formulations, and present fewer environmental difficulties to end users. Defoamer producers are adapting to market demands by offering products more suited to these new products and processing climates.

**Pulp & paper to remain top market**

The pulp and paper industry will remain the largest defoamer market, accounting for about one third of total demand in 2004. The most rapidly growing markets will be those which are large users of high value products. For example, the paints and coatings market is becoming dominated by water-based coatings, which generally require higher end defoamers that are both compatible and effective. Compliance with rules governing emissions of volatile organic compounds and air pollutants is leading end users to look at the environmental impact of low-volume additives such as defoamers.

**Study Coverage**

Details on these and other findings are available in the 182-page Freedonia study, *Defoamers*, priced at $3400. The study provides historical data and forecasts to 2004 and 2009 by product and market. The study also evaluates market share and profiles key industry participants including Hercules, Nalco, CK Witco and Vulcan Materials.

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DEFOAMER TYPES & FORMULATIONS

Surfactant & Oleochemical Defoamers

Demand for surfactants and water-based oleochemicals, such as fatty acids and alcohols, has grown more rapidly than the overall defoamer market. These products present a number of attributes which have made them attractive to end users. While generally more expensive than commodity-style defoamers, they are typically less costly than silicone products, especially those with high concentrations of silicone. Surfactants and oleochemicals such as polyglycols are normally more compatible with aqueous systems than other product types, and offer more favorable environmental profiles than traditional oil-based defoamers. For the purposes of this study, this product category will include surfactants, fatty acids, alcohols, esters and other oil-derived water-soluble chemicals.

Demand for surfactant and oleochemical defoamers will expand through 2004 by 6.2 percent per year to $230 million, accounting for more than 35 percent of total defoamer demand. Growth rates will be highest in the pulp and paper markets, as process water users as process aids will continue to use surfactants & oleochemicals such as polyglycols to minimize the effects of the defoamers upon the finished product, such as stains on paper or textiles. As end users reformulate their products for both environmental and performance reasons, the use of surfactant and oleochemical defoamers should increase. For example, ester-based lubricants and polyurethane emulsion coatings will require compatible defoamers, such as esters and fatty acids.

Advances in demand will be limited, though, by a number of factors. In high volume operations requiring large amounts of foam control product, surfactants and oleochemicals do not compete favorably in cost terms with...