Disinfectant & Antimicrobial Chemicals

US Industry Study with Forecasts for 2013 & 2018

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US demand to grow 3.6% annually through 2013

Demand for disinfectant and antimicrobial chemicals is projected to increase 3.6 percent annually to $1.2 billion in 2013. Although this represents a substantial deceleration in value gains from the 2003-2008 period, growth in volume will accelerate due to rebounding production levels in key industrial markets such as coatings and plastics. The strong value gains in the previous five-year period were due in large part to price runups from 2005 to 2008, when the price of crude oil and other raw materials soared.

Consumer segment to be fastest growing market

Despite considerable scientific disagreement about the necessity of using disinfectant chemicals in many of their current applications, demand for these chemicals in industrial, institutional and commercial, and consumer markets is expected to grow. In the large food and beverage processing market, users are implementing increasingly sophisticated disinfection routines to ensure workplace safety and to avoid liability issues from shipping tainted products. Gains in the consumer market -- the fastest-growing overall -- will be driven by fears of foodborne and other pathogens, as disinfectant active ingredients are being added to many traditional cleaning products which have not typically contained such ingredients. In the health care market, there is broad agreement that aggressive infection control programs are necessary. As a result, it will remain one of the largest outlets for these products.

Organosulfurs to post fastest growth by product

Organosulfurs will be the fastest-growing product category, due mainly to developments in the paint and coatings industry, the largest user of these products. Not only is overall coatings production expected to rebound from a poor performance in 2008, but organosulfurs are likely to be the leading replacement for tributyl tin (TBT) in the marine antifoulant segment. Iodophors will also benefit from gains in coatings production, and will remain a leading product in the large health care market. Overall, phenolic compounds will remain the largest product category. Phenolics are one of the few product categories that are used extensively as both disinfectant actives and antimicrobial additives. Although products do compete against each other in certain applications, they are generally not fully interchangeable, as their killing modes and effectiveness against particular organisms can vary widely. As a result, growth for particular product types is generally more reliant on growth in the applications in which they are used, rather than on the ability to expand into new applications or applications in which other products are more widely used.

Growth in the production volume of disinfectant and antimicrobial chemicals will accelerate due to rebounding manufacturing activity in key industrial markets such as coatings and plastics.
FUNCTIONS

Disinfectants & Sanitizers

Demand for disinfectant active ingredients in formulated disinfectants and sanitizers is projected to rise 3.8 percent per year to $734 million in 2013. Demand will be driven by consumers’ fear of illness caused by bacteria and foodborne pathogens, fueled most recently by the salmonella cases attributed to the Peanut Corporation of America’s Blakely, Georgia facility; the need to ensure hygienic conditions in industrial, institutional, and healthcare settings; and the need to comply with workplace safety regulations imposed by the US Environmental Protection Agency (EPA), Occupational Health and Safety Administration (OSHA) and other agencies. Also boosting demand will be the continuation of promotional campaigns designed to convince consumers of the advantages of cleaning products containing antibacterial additives, despite a lack of consensus on the matter in the scientific community.

Institutional and commercial markets will continue to account for more than 45 percent of disinfectant and sanitizing chemical demand in value terms, despite registering slower growth than the industrial or consumer markets. This market position is due to the large number of nursing homes, correctional institutions, hospitals and other health care facilities, hotels and restaurants in the US. As average life spans continue to increase in the US and people continue to eat a sizable share of their meals outside the home, demand for disinfectant chemicals used in institutional and commercial cleaning products will continue to grow.

The consumer market offers the fastest growth opportunities for disinfectant actives, at least in part because food processing plants, health care facilities and foodservice outlets are fairly established markets for disinfectants. In contrast, although most households use disinfectant cleaning products to some extent, much of that has been in traditional niches for disinfectants, such as bathroom and kitchen hard surface...
Stepan Company
Edens and Winnetka Road
Northfield, IL  60093
847-446-7500
http://www.stepan.com

Sales:  $1.6 billion (2008)
Employment:  1,580 (2008)
Key Products:  cationic blends and quaternary ammonium chloride

Stepan is a manufacturer of specialty and intermediate chemicals used in a broad range of industries. The Company operates in three segments: Surfactants, Polymers and Specialty Products.

The Company is active in the US disinfectant and antimicrobial chemicals market via the Surfactants segment, which had sales of $1.2 billion in 2008. Of the segment’s total 2008 sales, $811 million were to customers in North America. Through the Surfactants segment, the Company makes such products as SO/SAN 30M cationic blends, and STEPANQUAT and BTC quaternary ammonium chloride. These chemicals are typically used as germicidal quaternary compounds that inhibit the growth of mildew, mold and germs for industrial and consumer applications. Stepan’s SO/SAN 30M cationic blends are liquid sanitizer/softener concentrates that are typically used in sanitizers and antimicrobial fabric softeners for the household, and industrial and institutional cleaning markets. Stepan produces a wide range of STEPANQUAT quaternary ammonium chloride chemicals, including formulations for hard surface cleaning and other industrial end uses. The Company’s BTC quaternary ammonium chloride chemicals encompass certain formulations suitable for use as active ingredients in hard surface disinfectants and sanitizers, in addition to other applications.

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Sample Profile, Table & Forecast

TABLE V-1
DISINFECTANT & ANTIMICROBIAL CHEMICAL DEMAND BY TYPE (million dollars)

<table>
<thead>
<tr>
<th>Item</th>
<th>1998</th>
<th>2003</th>
<th>2008</th>
<th>2013</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident Population (mil)</td>
<td>276</td>
<td>290</td>
<td>304</td>
<td>319</td>
<td>334</td>
</tr>
<tr>
<td>lb chem/capita</td>
<td>0.75</td>
<td>0.80</td>
<td>0.84</td>
<td>0.90</td>
<td>0.96</td>
</tr>
<tr>
<td>Disinfectants/Antimicrobials (mil lb)</td>
<td>207</td>
<td>232</td>
<td>255</td>
<td>287</td>
<td>320</td>
</tr>
<tr>
<td>$/lb</td>
<td>2.79</td>
<td>3.05</td>
<td>4.02</td>
<td>4.27</td>
<td>4.69</td>
</tr>
<tr>
<td>Disinfectant &amp; Antimicrobial Demand</td>
<td>577</td>
<td>708</td>
<td>1025</td>
<td>1225</td>
<td>1500</td>
</tr>
<tr>
<td>Phenolics</td>
<td>157</td>
<td>201</td>
<td>316</td>
<td>376</td>
<td>466</td>
</tr>
<tr>
<td>Iodophors</td>
<td>99</td>
<td>125</td>
<td>184</td>
<td>225</td>
<td>284</td>
</tr>
<tr>
<td>Nitrogen Compounds</td>
<td>97</td>
<td>123</td>
<td>175</td>
<td>207</td>
<td>251</td>
</tr>
<tr>
<td>Organometallics</td>
<td>87</td>
<td>96</td>
<td>118</td>
<td>133</td>
<td>150</td>
</tr>
<tr>
<td>Organosulfurs</td>
<td>51</td>
<td>64</td>
<td>92</td>
<td>120</td>
<td>152</td>
</tr>
<tr>
<td>Chloroisocyanurates</td>
<td>18</td>
<td>19</td>
<td>28</td>
<td>33</td>
<td>41</td>
</tr>
<tr>
<td>Aldehydes</td>
<td>14</td>
<td>17</td>
<td>25</td>
<td>29</td>
<td>35</td>
</tr>
<tr>
<td>Other</td>
<td>54</td>
<td>63</td>
<td>87</td>
<td>102</td>
<td>121</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>662</strong></td>
<td><strong>838</strong></td>
<td><strong>1179</strong></td>
<td><strong>1392</strong></td>
<td><strong>1650</strong></td>
</tr>
</tbody>
</table>

“Demand for organosulfur compounds used as antimicrobials is projected to increase 5.5 percent per year to $120 million in 2013, above the overall average. The coatings market is by far the largest outlet for organosulfurs, and is expected to register growth comparable to the overall average for organosulfurs. In most uses, organosulfurs are expected to benefit from changes in the product mix favoring their use, rather than from gains derived from robust growth in the markets which use them.”

--Section V, pg. 107
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