Aseptic Packaging

US Industry Study with Forecasts for 2015 & 2020

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US demand to rise 8% annually through 2015

Demand for aseptic packaging is projected to expand 8.0 percent per year to $5.1 billion in 2015, outpacing overall packaging demand. In unit terms, demand is expected to expand 4.1 percent annually to 52.4 billion. Growth will be driven by drug sterility requirements and distribution and storage advantages for food and beverages.

Dominant pharmaceutical market to lead gains

Through 2015, demand for aseptic packaging in the dominant pharmaceutical market is forecast to advance 8.4 percent annually to $3.4 billion. Growth will reflect the broadening availability and consumption of biotechnology-based drugs, and aseptic filling requirements with other liquid pharmaceuticals. Additionally, opportunities will be driven by preferences among health care providers for unit-dose delivery formats, such as vials, ampuls, prefilled syringes and premixed IV solutions, for increased dosing accuracy. Growth for aseptic packaging in the beverage market will be supported by consumption trends in beverages that tend to be packaged aseptically, along with cost and environmental benefits, especially in terms of ambient shipping and storage. Gains in the food market will be driven by shelf-stability advantages, as well as by expanding applications in liquid, low-particulate and pumpable foods, often supplanting metal cans and glass jars.

Prefillable syringes to be fastest growing product

The ongoing commercialization of biotechnology-based drugs will fuel above-average demand growth for aseptic vials and ampuls, and prefilled syringes, which are prevalent delivery systems for these drugs. Prefillable syringes will represent the fastest growing aseptic packaging product type through 2015, with demand projected to expand 11.0 percent yearly to $1.1 billion. Moreover, opportunities for aseptic prefilled syringes will benefit from safety and convenience advantages and the prevalence of chronic conditions necessitating lifetime drug regimens.

Though aseptic carton prospects will be moderated by slow unit demand growth in fruit beverage applications, robust increases are expected in other uses based on favorable consumption trends in ready-to-drink wellness-type beverages, improving aesthetics and the perception that products packaged in these containers are of higher quality than those in other container types. Safety concerns regarding bisphenol-A (BPA), a chemical used as an inner coating in metal cans, will fuel increased interest in BPA-free alternatives such as aseptic cartons. Continued opportunities are anticipated for aseptic bags and pouches, especially for bag-in-box and other large bags sold to the foodservice and food processing industries.
Demand for plastic bottles for aseptic packaging is projected to increase 9.0 percent annually to $1.2 billion in 2015, representing a near 5.8 billion unit increase. The pace of growth is expected to remain above-average advanced by food and beverage applications and expanding applications in the pharmaceutical market. The increased demand is expected to be driven by high capital investment costs and the reluctance of firms to abandon their investments in highly efficient packaging systems such as those for hot-fill polyethylene terephthalate (PET) bottles. The pharmaceutical market will continue to account for the largest portion of demand based on ongoing requirements for aseptic filling for ophthalmic solutions.

Plastic bottle demand in aseptic pharmaceutical applications is expected to climb 7.8 percent per year to $735 million in 2015, slightly below-average based on the more well-established use of plastic bottles for aseptic filling in the food and beverage markets. In addition, bottles will face increased competition from unit-dose packaging, especially aseptic blow-fill-seal vials, which are preservative-free and offer a high level of sterility and single-use convenience. Still, continued opportunities are anticipated due to ongoing requirements for dispensing bottles with ophthalmic preparations, both ethical and over-the-counter products. Aseptic filling is necessary for the sterilization of ophthalmic solutions, which are heat-sensitive.

High density polyethylene (HDPE) and low density polyethylene are the most common resins employed in the production of aseptic pharmaceutical dispensing bottles. In addition, ongoing efforts by manufacturers to upgrade packaging aesthetics and barrier properties are expanding the presence of bottles made from other resins, including polyethylene terephthalate glycol (PETG) and polypropylene. For example, Bausch & Lomb converted the packaging of its RENU FRESH contact lens solution from standard white HDPE bottles to transparent PET bottles.
Sample Profile, Table & Forecast

COMPANY PROFILES

Weiler Engineering Incorporated
1395 Gateway Drive
Elgin, IL 60123
847-697-4900
http://www.weilerengineering.com

Annual Sales: $15 million (estimated)
Employment: 100 (estimated)

Key Products: blow-fill-seal machines for aseptic liquid packaging

Weiler Engineering is a provider of aseptic custom packaging for sterile liquid products for pharmaceutical and health care applications. The privately held company conducts development and manufacturing activities at its headquarters in Elgin, Illinois. Weiler Engineering’s products are marketed and distributed worldwide via independent distributors.

The Company’s main product line is the ASEP-TECH range of blow-fill-seal (BFS) machines for aseptic liquid packaging end uses. ASEP-TECH BFS technology integrates blow molding, sterile filling and hermetic sealing in one continuous operation to produce reliable and cost-effective aseptically manufactured products. ASEP-TECH BFS machines include a blow-fill nozzle that is lowered into the parison to form a seal with the neck of the mold. The container is formed by blowing sterile filtered compressed air into the parison, expanding the air against the walls of the mold cavity. The sterile air is then expelled from the container and the sterile product is metered into the container via the fill nozzle. Separate sealing molds are used to form the top and hermetically seal the container. End uses for ASEP-TECH BFS include small- and large-volume parenterals, ophthalmic solutions and respiratory therapy products.

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TABLE IV-6
FRUIT BEVERAGES ASEPTIC PACKAGING DEMAND
(million dollars)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit Beverage Shipments (mil gal)</td>
<td>3705</td>
<td>3270</td>
<td>3190</td>
<td>3220</td>
<td>3250</td>
</tr>
<tr>
<td>$ pkg/000 gallons fruit beverages</td>
<td>67</td>
<td>93</td>
<td>119</td>
<td>144</td>
<td>174</td>
</tr>
<tr>
<td>Fruit Beverage Aseptic Packaging Demand</td>
<td>248</td>
<td>305</td>
<td>381</td>
<td>465</td>
<td>565</td>
</tr>
<tr>
<td>Cartons</td>
<td>168</td>
<td>189</td>
<td>208</td>
<td>225</td>
<td>250</td>
</tr>
<tr>
<td>Plastic Bottles</td>
<td>42</td>
<td>66</td>
<td>110</td>
<td>165</td>
<td>227</td>
</tr>
<tr>
<td>Bags &amp; Pouches</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>59</td>
<td>69</td>
</tr>
<tr>
<td>Cups</td>
<td>8</td>
<td>10</td>
<td>13</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>% fruit beverages</td>
<td>72.7</td>
<td>63.4</td>
<td>51.8</td>
<td>44.7</td>
<td>39.0</td>
</tr>
<tr>
<td>Beverage Aseptic Packaging Demand</td>
<td>341</td>
<td>481</td>
<td>735</td>
<td>1040</td>
<td>1450</td>
</tr>
</tbody>
</table>

“Demand for aseptic packaging in fruit beverage applications is expected to increase 4.1 percent per year to $465 million in 2015, trailing the beverage market average due to the maturity of fruit beverages, along with competition from hot-fill processing. Aseptic cartons are the leading aseptic packaging type for fruit beverages, accounting for 55 percent of value demand in 2010.”

--Section IV, pg. 88
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