

PERP Program

April 2002

Chem Systems' Process Evaluation/Research Planning program has published a new report, ***Plastic Beer Bottles (00/01S1)***.

The global plastics industry has, to a large extent, grown at the expense of traditional materials, most notably metals, glass, and wood. It is not surprising, therefore, that the plastics industry has consistently targeted additional applications held by these materials for growth.

In the packaging sector, one area that has been targeted repeatedly over the years is the replacement of glass in food packaging. Plastics have deeply penetrated traditional glass packaging markets, and additional forays into food packaging are certainly forthcoming. In comparison to glass, plastics offer a number of advantages:

- Resealable top versus glass bottles with crown closures
- Unbreakability versus glass bottles
- Glass-like appearance
- Weight only 14 percent of that for glass

There have traditionally been few draw-backs with plastics from a consumer viewpoint, although recyclability is one such issue that has come to the fore over the past decade.

One major segment of the food packaging industry that has received considerable attention from plastics is in beer packaging. Beer represents one of the largest food packaging segments still not well penetrated by plastics. It is the replacement of traditional beer packaging materials, namely glass and to a lesser extent metal, by plastics that is the focus of this report.

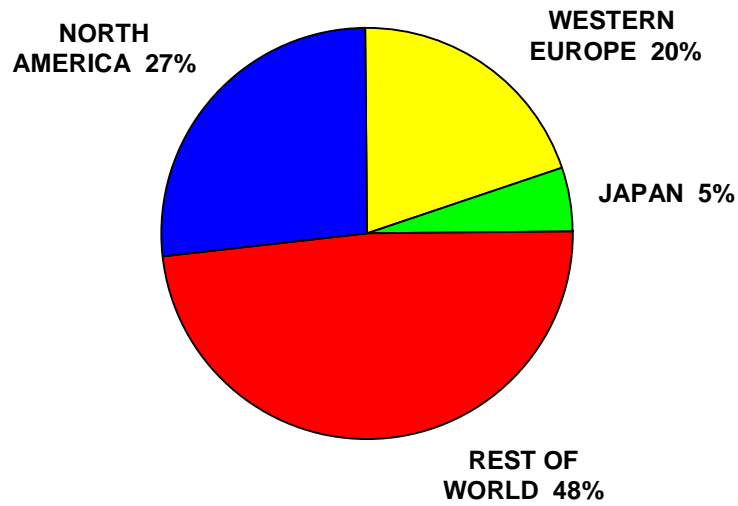
Global beer consumption is approximately 300 billion units (containers) per year, with a unit equal to about 0.5 liter of beer, which is equal to roughly 16 ounces. Each plastic container would require about 30 grams of plastic (0.0661 pounds). With polyethylene terephthalate (PET) the natural plastic of choice due to its strength and clarity, a one percent penetration of the beer market would translate into about 90,000 tons of PET bottle resin. Regional beer container demand is presented in the figure on the next page.

Design alternatives for plastic containers that meet some or all of the requirements for packaging beer are numerous. These include:

- High-Barrier Monolayer
- Multilayer Using Ultra-High Barrier

- Barrier Coatings/Surface Treatments
- Blends/Copolymers with Higher Barrier
- Oxygen Scavengers
- Light Protection Approaches

REGIONAL BEER CONTAINER DEMAND, 2001



TOTAL = 285 BILLION UNITS

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This new PERP report reviews these various approaches and presents Nexant Chem Systems' outlook for PET consumption in this market segment out to 2006.