Industry Focus
Flat-Panel Televisions

Manufacturers of flat-panel televisions can realize exceptional benefits by using ARCEL resin for package cushioning. This Industry Focus shows how ARCEL resin meets the challenge of shipping these valuable goods, and what specific savings you can expect.

The high cost of “foam insurance”
Shipping flat-panel televisions poses a challenge for the manufacturer or logistics manager: they are bulky to ship, and prone to damage if packed or handled incorrectly. Expandable polystyrene (EPS), the most common material used to protect televisions in the carton, doesn’t always get the job done. In fact, it’s often called a “one-drop” foam since it’s not engineered to withstand the multiple drops that often occur in the supply chain, and that can cause packaging failure and damaged goods. To reduce this problem, designers often over-engineer packaging by increasing the amount of EPS in the design. While this kind of “foam insurance” protects against damage, it increases the package cube—multiplying supply chain costs at each stage where the products are stored or shipped.

The difference with ARCEL resin
With ARCEL resin, you don’t have to choose between overengineered packaging or under-protected products. Lean and resilient, ARCEL resin provides strong protection at a small cube size. ARCEL resin’s toughness helps guard products even through multiple drops, without cracking or flaking. On top of that, ARCEL resin’s compactness allows the shipment of additional units on each truck or ocean container. For example, it can reduce the package size of a large flat-panel television by as much as 50%—instantly doubling the capacity of every shipment.

The upside to downsizing with ARCEL resin
ARCEL resin delivers three benefits. By increasing the capacity of every container, truckload, and pallet, it delivers savings throughout the supply chain. By resisting damage, it reduces customer returns that stem from broken cushioning. And by reducing packaging, it offers a more sustainable alternative that will cut energy used in manufacturing, lower fuel consumption and emissions, and reduce the waste stream for foam and corrugate.
What kind of difference can ARCEL resin make?
For a large flat-panel television, cushioning made with ARCEL resin can reduce the cube of the carton by a dramatic 40%. Here's a detailed comparison showing what kind of savings that can yield—in space as well as dollars.

Using conventional cushioning foam (left), a large flat-screen television with its stand can be packed with only two units to a standard pallet. Switching to ARCEL resin (right) and removing the stand allows for cartons approximately half the size, easily doubling the yield.

### Size Comparison

<table>
<thead>
<tr>
<th></th>
<th>Traditional Foam</th>
<th>ARCEL Resin With Stand</th>
<th>ARCEL Resin Without Stand</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (in.)</td>
<td>51.5</td>
<td>47.25</td>
<td>51.5</td>
<td>4.25</td>
</tr>
<tr>
<td>Height (in.)</td>
<td>34.0</td>
<td>31.5</td>
<td>32.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Width (in.)</td>
<td>14.1</td>
<td>13.3</td>
<td>10.0</td>
<td>2.0</td>
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<tr>
<td>Units per 40 ft. container</td>
<td>180</td>
<td>210</td>
<td>249</td>
<td>111</td>
</tr>
<tr>
<td>Units per 48 ft. trailer</td>
<td>100</td>
<td>252</td>
<td>200</td>
<td>220</td>
</tr>
</tbody>
</table>

### Cost Comparison

<table>
<thead>
<tr>
<th></th>
<th>With Stand</th>
<th>Without Stand</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shanghai to Long Beach</td>
<td>$16.67</td>
<td>$14.29</td>
<td>$8.33</td>
</tr>
<tr>
<td>Long Beach to Chicago</td>
<td>$15.00</td>
<td>$5.95</td>
<td>$3.57</td>
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</tbody>
</table>

### Environmental Impact

<table>
<thead>
<tr>
<th></th>
<th>With Stand</th>
<th>Without Stand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truckloads/100,000 units</td>
<td>500</td>
<td>238</td>
</tr>
<tr>
<td>Diesel Fuel (gal.)</td>
<td>-</td>
<td>173,390</td>
</tr>
<tr>
<td>CO₂ Emissions (tons)</td>
<td>-</td>
<td>1,925</td>
</tr>
<tr>
<td>Trees Consumed</td>
<td>-</td>
<td>3,830</td>
</tr>
</tbody>
</table>

1 Without Pallets
2 With Pallets
3 Cost comparison data shown here are the result of a model, and are provided only as an illustration. Actual costs may vary.
4 Environmental impact calculated per 100,000 units with fixed ration of ‘Units per 48 ft. trailer.’ Based on 2,050 mile haul from Long Beach to Chicago

Call the ARCEL Resin Global Team at 412-490-4979
Call the ARCEL Resin Global Team number any time 24/7 and leave a message telling us about your product, your objective, and how we can best contact you. Your message will be forwarded to the right specialist on the ARCEL Resin Global Team.

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