

The Economic Impact of the U.S. Vinyl Industry

The vinyl industry and its direct customers employ about 100,000 people in the United States. Thousands more are employed in allied and supplier roles to the vinyl industry in such areas as transportation or contract services, or by companies that depend on vinyl as a raw material.

Contribution to the U.S. Economy

In 1993, Charles River Associates (CRA), Boston, analyzed the contribution that all chlorine-dependent industries, including vinyl, make to the U.S. economy. That study found:

- ✓ Number of vinyl fabrication plants: 2,530
- ✓ Number of states with vinyl production plants: 46
- ✓ Value of sales of vinyl products (1990): more than \$3.8 billion
- ✓ Investment in vinyl fabrication plants: \$8.4 billion
- ✓ Net positive contribution to the U.S. balance of trade: \$206 million

Estimating the Cost to Substitute Vinyl Products

The 1993 Charles River study also examined the costs to substitute alternative materials for vinyl in 14 major markets and applications. Specifically, the study calculated the amount of material needed to maintain the same market share currently held by vinyl in each application. It also estimated (where appropriate) the capital cost to build new capacity or convert existing capacity to produce that material or fabricate end-products from it, and considered any incremental or additional costs to install the material compared to the current cost to install the vinyl product. The study found:

- ✓ Estimated additional investment in new equipment: \$974 million
- ✓ Estimated additional cost to consumers for substitutes: \$6.7 billion per year
- ✓ Estimated total cost of substitution: \$6.9 billion per year

CRA further noted that producing substitute materials, particularly metals and concrete, is energy intensive and can create environmental problems. For instance, ductile iron requires large amounts of coke, which creates problematic environmental emissions, as do steel mills and copper and aluminum smelting. CRA did not include the costs required to modify building codes and other regulations if vinyl products were no longer available, nor did it consider the fact that many of these substitutes lack the performance properties vinyl provides (such as durability, fire resistance, weather resistance, etc.).

Details of the study, over

Prepared April 1994

* "Assessment of the Economic Benefits of Chlor-Alkali Chemicals to the United States and Canadian Economies," prepared for the Chlorine Institute by Charles River Associates, Boston, April 1993.

Exhibit 3-5. Benefits of Chlorine In PVC Products (U.S. and Canada)

Product Forms	Estimated 1990 Consumption (000 tons)	Substitutes ⁽¹⁾	Estimated Investment Required (\$Million)	Estimated Incremental Cost of Substitutes (\$Million/Year)	Estimated Total Cost of Substitution (\$Million/Year)
Pipe and Fittings					
Pressure water	700	Ductile iron, copper, HDPE	273	1,587	1,642
Sewer/drains	375	Ductile iron, HDPE, RCP	114	590	813
Duct and conduit	285	Aluminum, steel	24	483	487
Drain/waste/vent	300	Ductile iron, ABS	158	774	806
Irrigation	100	HDPE, AL, ABS	36	106	114
Fittings and other	160	From above	65	322	333
Fabricated Products					
Flooring, textiles, and other calendered	515	Ceramics, carpet, nylon, paper, HDPE, PET	147	1,488	1,515
Sliding and accessories	410	Aluminum	9	266	267
Wire and cable	230	LDPE, TPO	4	61	61
Windows and other extrusions	305	Aluminum	7	198	199
Adhesives	60	Polyurethanes	0	224	224
Films and sheet	210	LLDPE, HDPE, TPO	88	36	54
Plastic bottles	120	PET-G	0	39	39
Other	430	Miscellaneous plastics	69	535	547
TOTAL	4,200		974	6,697	6,891

(1) HDPE = high-density polyethylene; RCP = reinforced concrete pipe; ABS = acrylonitrile butadiene styrene; PET = polyethylene terephthalate; LDPE = low-density polyethylene; TPO = thermoplastic olefins; LLDPE = linear low-density polyethylene; PET-G = polyethylene terephthalate-G.

SOURCE: Charles River Associates, 1993.

Distributed April 1993