



Updated March 1, 2001

The Facts About Recycling Vinyl

Vinyl is one of the largest-volume plastics used in the United States. Some 15 billion pounds are produced annually. About 70 percent of vinyl is made into durable building and construction products such as pipe, windows and siding. For this reason, vinyl is often referred to as the “infrastructure plastic.” Other important uses include medical, electronic, automotive and consumer products.

Vinyl can be made into rigid products such as pipe or flexible ones such as electrical wire insulation. Either type of product, at the end of its life, can be handled safely and effectively by conventional non-hazardous waste-management processes – landfill, incineration and recycling. Vinyl can be re-melted and reformed repeatedly. Used vinyl products or scrap can be washed, chopped or ground, and dried; the pieces can then be fed into a machine that molds, extrudes or otherwise forms new products. All types of vinyl products can be recycled.

Post-Industrial Recycling

Reclamation and recycling of vinyl scrap are well-established businesses. Scrap (e.g., trim from finished products, off-spec material) is sold by one firm to another, perhaps further processed to create a uniform batch, and fabricated into new products such as garden hose, pipe, sound-deadening panels for automobiles and other products. Some reclaim is exported. About 270 North American recycling companies deal in vinyl scrap. Because of the extent of this **post-industrial** recycling, some 99 percent of all vinyl ends up in finished products. This produces little waste and means that most vinyl products have some post-industrial recycled content.

Post-Consumer Recycling

About 18 million pounds of **post-consumer** vinyl was recycled in 1997 from sources such as carpet backing, medical products, windows and siding, and packaging. **Rigid** vinyl is recycled into useful products that include non-pressure pipe, window frames, electrical boxes, cooling tower fill and mobile home skirts. The largest use for recycled **flexible** vinyl scrap is garden hoses. Other uses include automotive floor mats, pool liners, shoe soles and products such as notebooks and checkbook covers. While the amount of post-consumer recycled vinyl is small compared to the total amount of vinyl produced, it is important to understand that post-consumer recycling depends heavily on material availability as well as cost factors such as collection and contamination. If the total cost of obtaining recycled material exceeds the total cost of obtaining

virgin material, the recycling rate will be low. If the contrary is true, the recycling rate will be high.

Availability

As mentioned above, most vinyl products go into long-life building applications, so a great deal of the material is simply not available for recycling. PVC pipe, vinyl siding, windows, flooring, wallcoverings, roofing, fencing, decking, railing and electrical cable are intended to last many years – even decades. PVC pipe – the product accounting for the single largest use of vinyl – theoretically can last hundreds of years without deteriorating, based on accelerated testing.

Collection

Vinyl is not normally collected for recycling in municipal programs because it is used in much smaller amounts for household containers and packaging than are the leading packaging plastics (PET, identified by number “1” inside chasing arrows on the bottoms of bottles, and HDPE, identified by number “2”). Vinyl (number “3”) has important packaging and container uses (e.g., blister pack, specialty bottles with handles, cosmetic packaging), but these contribute little to household waste. The costs of collecting (and having to separate) small amounts of materials from other waste materials generally outweigh the revenues that can be obtained. For businesses, collection costs may not be an issue. A carpet or ceiling tile manufacturer, for example, might contract with its client to take back used product in the same truck that delivers new product.

Contamination

Post-consumer municipal recycling usually requires sorting and separation of mixed wastes in order to create clean, uniform quantities of material. Even tiny amounts of “contaminants” – that is, materials other than the one being targeted – in a batch of recycled material can lead to rejection by the end user. These realities increase the cost of recycling. The Vinyl Institute has contributed funding and other support to many projects designed to address these kinds of problems. Among the solutions are automated sorting systems that can efficiently scan and separate waste products by the type of plastic used in them. A number of automated systems are now in use throughout the country.

For more information about vinyl recycling and other vinyl environmental attributes, as well as access to a searchable database of companies that recycle vinyl, see the Vinyl Institute’s (VI) dedicated Web site for building design and construction, www.vinylbydesign.com. VI’s recycling directory is also available by calling the Vinyl Environmental Resource Center (VERCE) at 800-969-VINYL (8469).