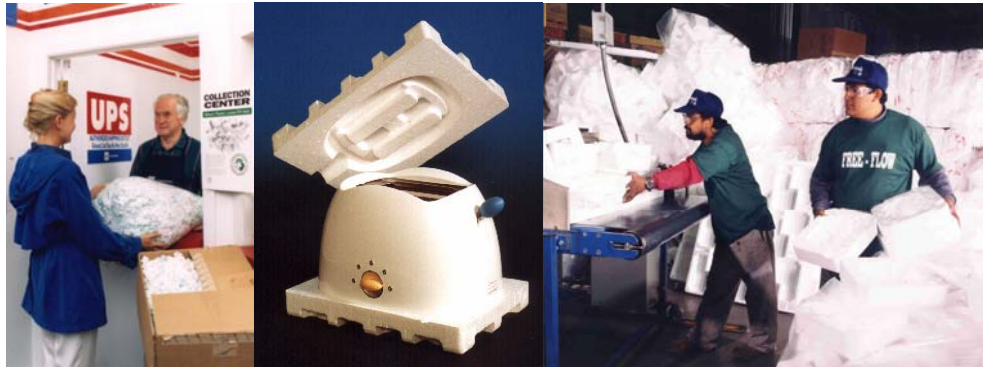


2004 EPS Recycling Rate Report



2004 Results Reflect Challenging Economics

The 2004 Expanded Polystyrene (EPS) Packaging Recycling Rate Study (the “Rate Study”) was conducted by Diagnostics Plus on behalf of the Alliance of Foam Packaging Recyclers (AFPR). The 2004 results reflect an overall increase in the total number of pounds recycled for both post-consumer and post-industrial EPS. The survey results are based on data received from fifty-one EPS recyclers.

As reflected in Table 1, more than 57 million pounds of EPS was recycled during calendar year 2004. This figure includes 25 million pounds of post-consumer packaging and 32.9 million pounds of post-industrial recovery. Post-consumer recycling is defined as any material that is recycled after its intended end-use – while post-industrial recovery would include EPS facility scrap that is recycled but never served its intended end-use as a packaging material.

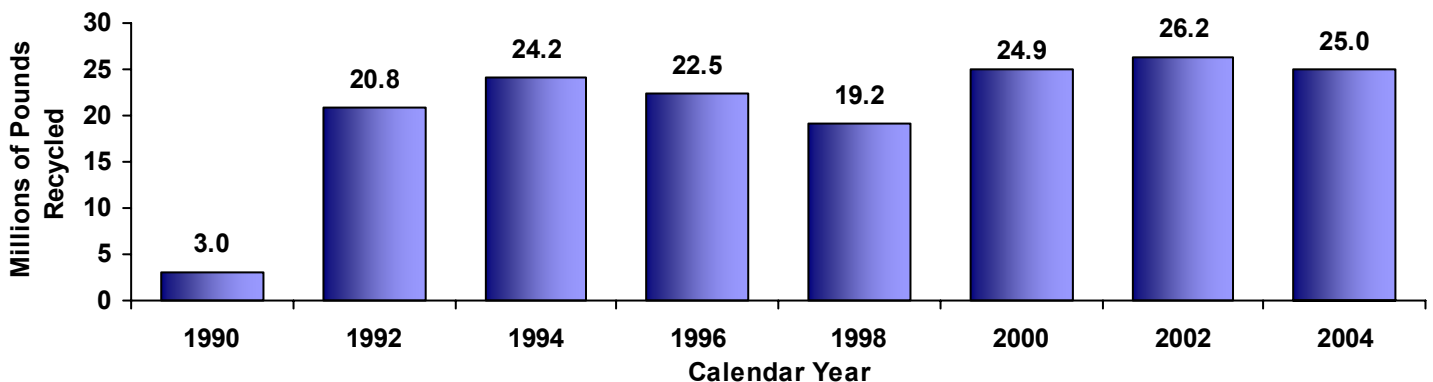
As shown in Figure 1, post-consumer EPS recycling experienced a small decrease, from 26.2 million pounds in 2002 to 25.0 million pounds in 2004. This figure reflects a downturn in the U.S. economy compounded by a shift in U.S.-based manufacturing to the Pacific Rim. This poses challenges to the EPS industry’s recycling equation as more packaging is produced outside the U.S., but still requires a recycling outlet on the domestic front. Since the majority of EPS recycling is based on a closed-loop system, a decreased manufacturing demand will dictate a decrease in markets for recycled content EPS packaging.

Markets for recycled post-consumer EPS include a variety of packaging and durable products. Diagnostics Plus estimates that approximately 11.6 million pounds (56 percent) of the 25 million pounds recycled during 2004 were remanufactured into new EPS custom molded packaging.

Table 1
Domestic EPS Recycling During 2004
(In Millions of Pounds)

Post-Consumer	25.0
Post-Industrial	32.9
Total EPS Recycling	57.9

Figure 1
Domestic Post-Consumer EPS Recycling: 1990—2004



EPS Averages 11% Post-Consumer Recycling Rate

As shown in Figure 2 and Table 2 below, the post-consumer EPS packaging recycling rate remains one of the highest among the plastics family showing a dependable track record to deliver consistent results. Including rigid, durable polystyrene and other grade materials, EPS post-consumer and post-industrial recycling represent 89% of all polystyrene recycled in the U.S.

Figure 2
U.S. Post-Consumer EPS Recycling Rate Summary: 1990–2004
(millions of pounds)

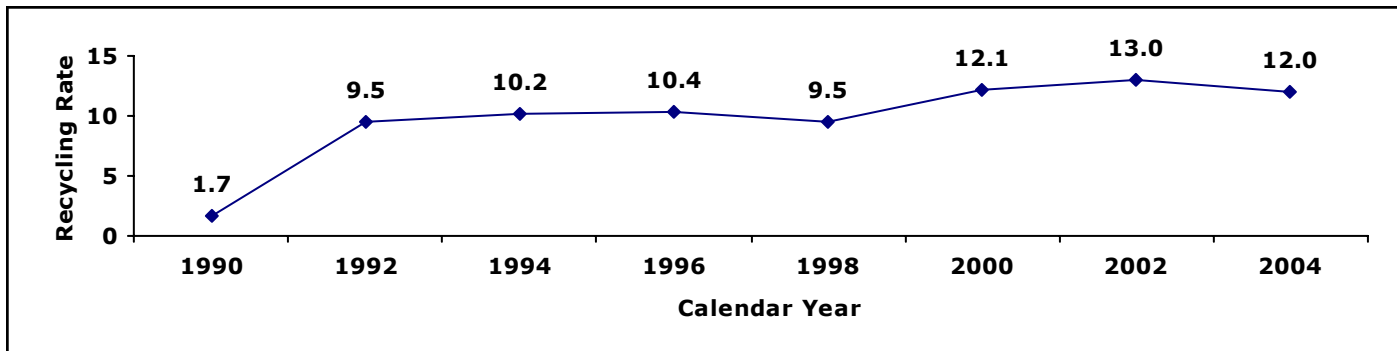


Table 2
U.S. Post-Consumer EPS Recycling Rate Summary: 1990–2004

Rate Component	1990	1992	1994	1996	1998	2000	2002	2004
Pounds Recycled	3.0	20.8	24.2	22.5	19.2	24.9	26.2	25.0
Pounds Sold	179	218	238	217	202	206	201	222
Recycling Rate	1.7	9.5	10.2	10.4	9.5	12.1	13.0	12.0

Report Methodology

The methodology for this annual report focuses on the development of a numerator and denominator figure. Recycled pounds, used as the numerator in the recycling rate equation, are based on an annual survey of post-consumer plastic recyclers and reflect a definitive quantity of EPS recycled each year. Recycled pounds were counted at the stage where materials enter a reclamation facility (as opposed to reclaimed quantities), making the data more comparable to recycling rates reported by other material industries.

To determine the percentage of EPS recycled in any given year, a denominator is achieved by estimations based on available data. Due to supply distribution chains and multiple end-use applications for EPS, a fixed number for EPS packaging generated each year is not available. Other manufacturing streams include building and construction applications, sporting goods and other durable products. In the spring of 1999, AFPR commissioned a survey of EPS molders to determine the quantities of EPS manufactured into packaging applications. The study documented 202 million pounds of custom-shape and block molded EPS packaging produced during calendar year 1998 (compared to 224 million pounds reported via the American Chemistry Council’s statistical program). The more accurate denominator figure developed as a result of the EPS molder survey resulted in a 1 percentage point increase in the 1998 EPS protective packaging recycling rate (9.5 percent as opposed to 8.5 percent).

Due to cost considerations, the EPS molder survey was not performed from 1999 through 2004. As a proxy for the production data in that timeframe, market growth figures for EPS packaging obtained from the American Chemistry Council statistical program were applied to the 1998 AFPR Study benchmark figure. This calculation resulted in an overall production figure of 222 million pounds for calendar year 2004.

EPS Collection & Reuse

Expanded polystyrene (EPS) foam packaging is an excellent material for recycling and reuse with a 12 year history of environmental stewardship. Members of the Alliance of Foam Packaging Recyclers sponsor these efforts with ongoing financial support and active involvement in the collection and reprocessing of EPS. The EPS industry also funds the Plastic Loose Fill Council (PLFC), a national reuse program for plastic loose fill, also known as ‘packing peanuts.’

Recycling Criteria

Not all materials are well suited for recycling. Post-consumer EPS packaging must be clean and free of tape, film and cardboard. Expanded polystyrene made with a fire retardant additive, typically used in the manufacture of EPS building insulation, requires special reprocessing conditions. To enhance collection efforts and maximize the investment in recycling equipment, AFPR recycling locations concentrate on large volume, commercial sources of post-consumer EPS. Some locations also offer consumer drop-off access. To find out if EPS recycling is available in your area, call 800-828-2214 or visit www.epspackaging.org.

For consumers that do not have access to a local drop-off center, the Alliance of Foam Packaging Recyclers sponsors a National Take-Back Program intended for small quantities of EPS which can be mailed via U.S. Postal Service or UPS to its national headquarters at 1298 Cronson Blvd., Suite 201, Crofton, MD 21114.

EPS is renowned for its superior performance properties, which makes it one of the most efficient packaging materials available. It’s light weight reduces fuel and shipping costs while its insulating and cushioning properties protect both agricultural perishables and durable goods during transit.



**Peanut Hotline
(800) 828-2214**

The Plastic Loose Fill Council

The Plastic Loose Fill Council’s “Peanut Hotline” is a unique program that delivers tangible savings to the environment. The Hotline automatically directs consumers to local packing businesses willing to accept used EPS loose fill for their own packaging needs. With locations in all 50 states, close to 1,500 collection centers offer consumers an easy access opportunity to return post-consumer loose fill for reuse. This convenient, community-centered collection program reports a reuse rate as high as 50 percent. Over 800,000 calls to the Peanut Hotline have been received since the program was launched in 1991.

Made from both post-consumer and post-industrial feedstock, using up to 100% recycled content, EPS loose fill takes less energy—up to 50% - to produce than alternative packaging materials. Because it is over 99.6% air, EPS loose fill is extremely lightweight, resulting in reduced shipping costs. And, its superior performance properties significantly reduce damage during transit.

For more information on EPS loose fill reuse contact the PLFC Peanut Hotline at 800-828-2214 or visit them on the Internet at www.loosefillpackaging.com.

EPS Handles The Environment With Care

- Prior to 1988, there was essentially no recovery of post-consumer polystyrene for recycling. Although the availability of polystyrene recycling programs varies by community, in 2004 more than 57 million pounds of polystyrene was recycled.¹
- The percentage of post-consumer polystyrene diverted from landfills, as a result of source reduction, re-use and recycling, increased from 0.8% in 1974 to 15.7% in 1997.²
- Between 1974 and 1997, the amount of polystyrene packaging and disposals diverted from the waste stream through source reduction increased by 40 times its original amount, eliminating more than 1,453,000 tons of polystyrene. The amount of polystyrene source reduced in 1994 had an energy savings equivalent of having recycled 51% of polystyrene packaging and disposals produced that year.³
- No chlorofluorocarbons (CFCs) have ever been used in the manufacture of expanded polystyrene transport packaging.
- Nothing, not paper, plastic or even food, readily degrades in a landfill—and it's not supposed to. Because degradation creates harmful liquid and gaseous by-products that could contaminate ground water and air, modern landfills are designed to reduce the air, water and sunlight needed for degradation, thereby practically eliminating degradation of waste.⁴



Select Photography Courtesy of SCA Packaging North America & FP International.

References

- 1) Diagnostics Plus "2004 National Post Consumer EPS Recycling Rate Report", May 2005.
- 2) Franklin Associates, Ltd., "Waste Management and Reduction Trends in the Polystyrene Industry, 1974-1997", August 1999.
- 3) "Resource & Environmental Profile Analysis of EPS Packaging Products," Franklin Associates, 1996
- 4) "Rubbish" by William Rathje. The Atlantic, December 1989.

The information contained herein is provided without any express or implied warranty as to its truthfulness or accuracy. The Alliance of Foam Packaging Recyclers does not endorse the products or processes of any individual manufacturer or recycler.

AFPR Member Companies

AFM Corporation	HIRSCH USA
Agri-Cel, Inc.	Huntsman Expandable Polymers, LC
Alessio	Kalamazoo Plastics Company
Archbold Foam Company	KBM
Armstrong Brands, Inc.	Kurtz North America
Aqua-Pak Styro Containers Ltd.	Michigan Foam
Astrofoam Molding Co., Inc.	NOVA Chemicals
BASF Corporation	NuPak Solutions, Inc.
Cretec Corporation	Polar Industries
D8, Inc.	Polyfoam Corporation
Davis Core & Pad Company	RAPAC, Inc.
Downeast Plastics Ltd.	Recycle-Tech Corp.
EFP Corporation	SCA Packaging North America
Erlenbach USA	Storopack, Inc.
Fabricated Packaging Materials, Inc.	Styrotek, Inc.
Fanosia	Tempo Plastics Company
Foam Concepts, Inc.	Texas Foam
Foam Equipment & Consulting	Thermal Foams, Inc.
Foam Fabricators, Inc.	TKV Containers, Inc.
FP International	Tri State Foam

Versa-Tech, Inc.

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