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# Recycled Plastics

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US Industry Study with Forecasts for **2016 & 2021**

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*Gains will be driven in part by a growing emphasis on sustainability among packaging and consumer product manufacturers, and advancements in processing and sorting technologies.*

## US demand to rise 6.5% annually through 2016

US demand for post-consumer recycled plastic is forecast to rise 6.5 percent per year to 3.5 billion pounds in 2016. Gains will be driven by a number of factors, including a growing emphasis on sustainability among packaging and consumer product manufacturers, advancements in processing and sorting technologies allowing a wider variety of plastic to be recycled into high quality resins, and an improved collection infrastructure which raises the plastic recycling rate. Continued support by federal, state, and local governments for recycling efforts will also provide a significant boost to recycled plastic collection, processing, and demand. However, the overall rate of plastic recycling in the US will remain relatively low, since only about half of the plastic collected for recycling makes its way to manufactured products in the US market.

## Bottles to remain leading source of recycling plastic

Bottles will remain the leading source of plastic for recycling, accounting for over half of all plastic collected in 2016. The well-established collection infrastructure, including deposit laws in several states, makes bottles one of the most widely recycled plastic products. More rapid gains, however, are forecast for other sources, particularly rigid plastics, film, and carpet. The recycling industry has put significant efforts into increasing the

## US Recycled Plastic Demand, 2016 (3.5 billion pounds)



PET  
36%

HDPE  
33%

LDPE/LLDPE  
15%

Other Resins  
16%

collection of rigid plastic, including thermoformed packaging and bulk containers, particularly at the commercial level. Bag and film recycling will also be bolstered by private sector collection initiatives, as these are a key source of raw materials for plastic bag and wood-plastic composite producers.

## Recycled PET products to see good growth, while HDPE gains will be subpar

Polyethylene terephthalate (PET) and high density polyethylene (HDPE) were the two leading resins used in recycled plastic products in 2011, accounting for over 70 percent of demand. While PET will see above average gains in demand,

fueled by rising recycled content in beverage bottles and thermoformed containers, subpar increases in HDPE collection will limit the availability of recycled resin. The most rapid growth is forecast for recycled low density polyethylene, which will benefit from a rebound in the construction market. Recycled polypropylene will also see healthy gains in demand as collection volumes increase and processing techniques improve the quality of the resin. Rapid growth is expected for smaller volume resins such as nylon and polystyrene, fueled by rising collection of products such as carpet, plastic foam, and consumer electronics for recycling.

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## Sample Text, Table & Chart

### RECYCLED PLASTIC RESINS

#### Markets: PET

Recycled PET demand is expected to increase from 1.1 billion pounds in 2011 to 1.5 billion pounds in 2016, a 45 percent per cent increase. This is a substantial increase from the 2001-2011 period, when demand improved only 10 percent. This increase is due to improved output from the pet and furnishings markets and increased activity in the other markets. Additionally, PET demand is expected to increase use in high performance resin applications, especially bottles and food containers. The availability of recycled PET in the US market, due to PET recycling efforts and expansions in processing capacity, will increase demand. However, advances will be limited by the difficulty of producing high performance food-grade PET from recycled plastic, particularly with ongoing issues related to contamination in the stream.

**SAMPLE  
TEXT**

PET has one of the oldest recycled plastic markets, as the resin has been widely recycled in the US since the 1980s. As a result, the industry is far enough along in its life cycle that some major applications have achieved maturity status. This is most evident in fiber applications for recycled PET, such as carpet, furnishings, apparel, and strapping. In these markets, recycled PET tends to compete strictly on price considerations, rather than by adding value through sustainability or “green” cachet. During the 2006-2011 period, many of these markets experienced declining demand, impacted by the economic recession (carpets, strapping) or overseas competition (apparel, furnishings). For example, in 2001 carpets and rugs accounted for 42 percent of recycled PET demand, but this had fallen to 25 percent of demand in 2011.

Nonetheless, many of these more mature recycled PET markets are expected to rebound strongly through 2016 as economic projections improve. Carpet manufacturers are showing a renewed interest in recycled PET, particularly as the marketability of sustainable products is expected to grow due to their appeal to US consumers. Many carpet manufacturers

88

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TABLE IV-3

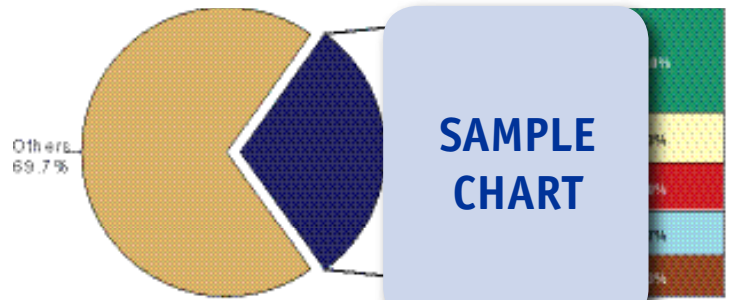
RECYCLED PET COLLECTION & DEMAND  
(million pounds)

Item	2001	2006	2011	2016	2021
Polyethylene Terephthalate Demand					
% collected					
Recycled PET Collection					
Bottles:					
Soft Drink					
Water					
Other					
Rigid Plastics					
Carpet & Film					
lb demand/lb collected					
Recycled PET Demand					

**SAMPLE  
TABLE**

CHART VI-1

US RECYCLED PLASTICS MARKET SHARE  
(\$1.5 billion, 2011)

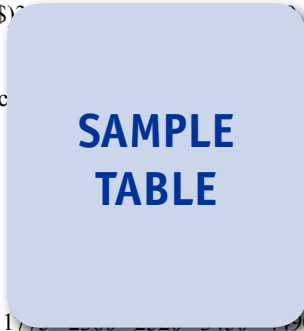


**SAMPLE  
CHART**

## Sample Profile, Table & Forecast

**TABLE V-2**  
**PACKAGING MARKETS FOR RECYCLED PLASTIC**  
 (million pounds)

Item	2001	2006	2011	2016	2021
Plastic Packaging Shipments (bil 2005\$) lb recycled plastic/000\$ pkg					
Packaging Markets for Recycled Plastic					
Bottles					
Containers					
Bags & Film					
Strapping					
Other					
% packaging Recycled Plastic Demand	17				20



### COMPANY PROFILES

#### MRC Polymers Incorporated

3535 West 31st Street  
 Chicago, IL 60623  
 773-890-9000  
<http://www.mrcpolymers.com>

Annual Sales:  
 Employment:

Key Products: commodity thermoplastic compounds

MRC Polymers reclaims various grade thermoplastics from post consumer plastic scrap and post industrial plastic wastes and uses them in the production of engineering grade and commodity thermoplastic compounds. The privately held company conducts manufacturing operations at its headquarters site in Chicago, Illinois and also performs toll plastic recycling services.

The Company's range of more than 120 recycled thermoplastic compounds includes polycarbonate, polycarbonate alloys, polycarbonate/acrylonitrile butadiene styrene (ABS) compounds, polycarbonate/polybutylene terephthalate compounds, polyethylene terephthalate (PET) compounds, polycarbonate/PET compounds, and nylon. These products are sold under such tradenames as NAXALOY, EMAREX, MAXNITE, NAXELL, MAXTEL, MAXNITE, and SATRAN. The Company's polymer compounds are high quality, engineering grade products that are marketed as cost competitive alternatives to virgin resins. The Company reclaims thermoplastics from such post consumer plastic scrap materials as large water bottles, advertisement sheets, and car bumpers. Among the post industrial plastic waste recycled by MRC Polymers are compact discs, DVDs, and DVD covers.

"Demand for recycled plastic in bottles will rise 4.7 percent per year to 860 million pounds in 2016. Bottles will continue to account for the majority of recycled content plastic packaging due to the presence of well developed and economically viable recycling infrastructures for polyethylene terephthalate (PET) and HDPE, and expanding bottle-to-bottle recycling activity in PET bottles. Additionally, ..."

--Section V, pg. 131



**OTHER STUDIES**

**Natural Polymers**

US demand for natural polymers is forecast to expand 6.9 percent annually to \$4.6 billion in 2016. Cellulose ethers, led by methyl cellulose, will remain the largest product segment. Exudate and vegetable gums will enjoy the most rapid gains in demand. The oilfield market will grow the fastest, driven by rising demand for guar gum in hydraulic fracturing fluids. This study analyzes the \$3.3 billion US natural polymer industry, with forecasts for 2016 and 2021 by market and product. The study also evaluates company market share and profiles industry players.  
 #2963 ..... November 2012 ..... \$4900

**Fluoropolymers**

US demand for fluoropolymers is forecast to increase 5.3 percent annually to \$2.4 billion in 2016. Polytetrafluoroethylene (PTFE) will remain the largest and most valuable segment, while polyvinyl fluoride (PVF) and polyvinylidene fluoride (PVDF) will grow the fastest. The construction and electrical/electronics markets will be the fastest growing outlets. This study analyzes the \$1.9 billion US fluoropolymer industry, with forecasts for 2016 and 2021 by product, application and market. The study also evaluates company market share and profiles industry players.  
 #2938 ..... August 2012 ..... \$4900

**Bioplastics**

US demand for biodegradable and non-biodegradable bio-based resins is forecast to climb at a 20 percent annual pace through 2016 to 550 million pounds. Polylactic acid will remain the largest bioplastic segment, while bio-based polyethylene and degradable polyesters will grow the fastest at double-digit rates. Nonpackaging markets will outpace packaging uses. This study analyzes the 220 million pound US bioplastic industry, with forecasts for 2016 and 2021 by resin, product and market. The study also evaluates company market share and profiles industry players.  
 #2908 ..... June 2012 ..... 4900

**High Performance Composites**

US demand for polymer materials containing advanced fiber reinforcements is forecast to rise almost 15 percent per year to \$10.2 billion in 2016. Aerospace will remain the dominant and fastest growing market, followed by the energy market. Carbon will continue as the dominant and most rapidly growing fiber, followed by S-glass. This study analyzes the \$5.1 billion US high performance composite industry, with forecasts for 2016 and 2021 by fiber, market and resin. The study evaluates company market share and profiles industry players.  
 #2905 ..... June 2012 ..... \$4900

**Silicones**

US demand for silicones is forecast to climb 5.6 percent annually to \$4.1 billion in 2016. Silicone resins and elastomers will be the fastest growing products, with elastomers overtaking silicone fluids as the largest segment by 2016. The industrial market will remain dominant while the construction segment grows the fastest as it rebounds from previous declines. This study analyzes the \$3.1 billion US silicone industry, with forecasts for 2016 and 2021 by product, market and application. It also evaluates company market share and profiles industry players.  
 #2879 ..... April 2012 ..... \$4900

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