Specialty Plastic Additives

US Industry Study with Forecasts for **2017 & 2022**

Study #3016 | April 2013 | $4900 | 297 pages

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US Industry Study with Forecasts for ***2017 & 2022***

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MARKET ENVIRONMENT

DEMAND BY TYPE

DEMAND BY RESIN

INDUSTRY STRUCTURE

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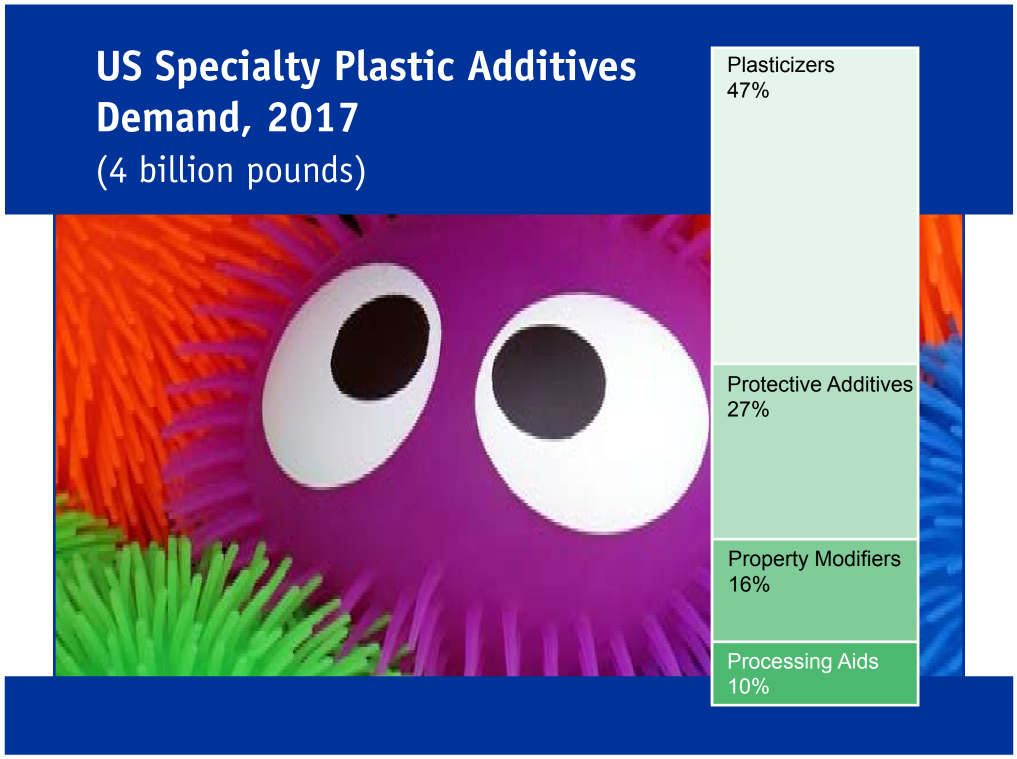
Demand will be driven by significant opportunities in a rebounding construction market, which is anticipated to generate over two-thirds of new demand for plastic additives through 2017.

US demand to rise 4.5% annually through 2017

US demand for specialty plastic additives is forecast to rise 4.5 percent annually to 4.0 billion pounds in 2017, with market value increasing 6.6 percent per year to $7.3 billion. Advances will be fueled by an improved macroeconomic climate, which will boost overall demand for plastics in a number of markets. In particular, a strong rebound in construction activity following the severe declines of the recession-impacted 2007-2012 period will provide significant opportunities in the construction market, which is anticipated to generate over two-thirds of new demand for plastic additives through 2017. The ability of additives to enhance the performance properties of plastic resins, thus making them more competitive with alternative materials in a widening array of applications, will continue to drive their use through the forecast period.



Plasticizers to be paced by non-phthalate types

Plasticizers are by far the largest type of specialty plastic additive, accounting for nearly half of total market volume in 2012. The outlook for plasticizers is tied closely to that for flexible polyvinyl chloride (PVC) products, which accounted for the vast majority of demand. Although phthalates will continue to dominate the plasticizers market, more rapid gains are anticipated for non-phthalate types due to ongoing concerns regarding the health and environmental risks associated with phthalate exposure. Spurred by mounting unease among consumers, producers are phasing out the use of controversial compounds such as diethylhexyl phthalate (DEHP) plasticizers in favor of higher molecular weight phthalates and phthalate-free formulations that are safer.

Flame retardants to remain key protective additive

Among protective additives, flame retardants dominate in volume terms and are projected to offer the best growth prospects, spurred by their use in construction products and related industries such as wire and cable. Health concerns about halogenated flame retardants, some of which are being voluntarily phased out, have resulted in a shift in product mix toward non-halogenated alternatives. Among the other protective additives, demand for heat stabilizers will rebound strongly based on their use in rigid PVC products, while antioxidants will also do well.

In the property modifiers segment, impact modifiers are the largest and fastest growing product type. These additives are chiefly employed in rigid PVC construction products and will therefore benefit from the turnaround in construction spending through 2017. This rebound will also benefit colorants used in wood-plastic composite lumber and chemical blowing agents used in the PVC decking, molding, and trim.

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Sample Text, Table & Chart

TABLE III-8

ANTIOXIDANTS DEMAND IN PLASTICS

Item	2002	2007	2012	2017	2022
Plastics Demand (bil lb)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
lb antioxidants/000 lb plastics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Antioxidants Demand (mil lb)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Hindered Phenols	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Phosphites	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Thioesters	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Amines & Other	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
$/lb	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Antioxidants Demand (mil $)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Hindered Phenols	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Phosphites	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Thioesters	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Amines & Other	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
% antioxidants	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Protective Additives Demand (mil $)	[illegible]	[illegible]	[illegible]	[illegible]	3080

SAMPLE TABLE

DEMAND BY TYPE

Plasticizers

SAMPLE TEXT

percent a ... is foreca ... This will ... eclines ex ... vances w ... particularl construction and automotive sectors. However, gains will be to some degree by ongoing health and environmental concern ated with PVC, particularly those linked to the phthalate plas commonly used in PVC compounding. This will support de less environmentally damaging substances such as polyolefi thermoplastic elastomers, particularly in sensitive application those in the medical field. Nevertheless, PVC will remain w and phthalate plasticizers will continue to account for the ma plasticizers demand through the forecast period.

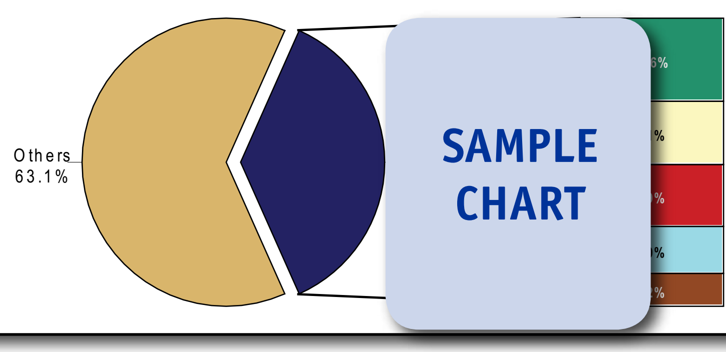
By far the largest single type of specialty plastic additive, plasticizers are used to improve the flexibility, resiliency, and flowability characteristics of plastics, primarily PVC, which accounts for the vast majority of total plasticizers demand. In general, plasticizers are liquid organic chemicals with high boiling points (i.e., solvents), although there are a few which are solids. In flexible PVC, plasticizers are used in extremely high quantities, with loadings ranging from 30 to over 100 parts per hundred resin. This is a significant barrier to new products entering the market, as they must have a low enough cost to compete wit commodity chemicals.

Due to its reliance on PVC, demand for plasticizers is c PVC consumption is tied to volatile markets such as constru motor vehicles. Key uses for PVC include pipe and tubing, w doors, siding, flooring, and packaging. Demand growth in co

40

CHART V-1

SPECIALTY PLASTIC ADDITIVES MARKET SHARE
($5.3 billion, 2012)



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Sample Profile, Table & Forecast

TABLE IV-10

POLYETHYLENE DEMAND FOR SPECIALTY PLASTIC ADDITIVES

Item	2002	2007	2012	2017	2022
Polyethylene Demand (mil lb)					
lb additives/000 lb polyethylene					
Plastic Additives in Polyethylene (mil l					
Property Modifiers					
Protective Additives					
Processing Aids & Plasticizers					
$/lb					
Plastic Additives in Polyethylene (mil $					
% polyethylene					
Specialty Plastic Additives (mil $)					

SAMPLE TABLE

COMPANY PROFILES

OMNOVA Solutions Incorporated
175 Ghent Road
Fairlawn, OH 44333
330-869-
http://wv

Sales: $
US Sales
Employ

Key Pro ... iers

SAMPLE PROFILE

OMNOVA Solutions Incorporated designs, develops, produces, and markets decorative and functional surfaces, emulsion polymers and specialty chemicals for a variety of commercial, industrial, and residential applications. The Company operates through two segments: Performance Chemicals and Engineered Surfaces.

The Company participates in the US specialty plastic additives industry through the Performance Chemicals segment, which posted FY 2012 sales of $865 million. The segment operates through two product groups: Specialty Chemicals, and Paper and Carpet Chemicals. Of these product groups, the Specialty Chemicals group, which accounted for FY 2012 sales of $521 million, includes such specialty plastic additives as antioxidants and elastomeric modifiers.

OMNOVA Solutions' antioxidants include WINGSTAY hindered phenol and amine based compounds that are designed to inhibit degradation caused by excessive exposure to oxygen, heat, and sunlight in acrylonitrile-butadiene-styrene (ABS) and thermoplastic polyesters. WINGSTAY antioxidants also resist moisture and quickly emulsify to

 281

"Demand for protective additives in polyethylene is forecast to increase 5.0 percent annually to more than 100 million pounds in 2017, outpacing all other additive types. In value terms, consumption is expected to surpass $290 million, rising 5.4 percent per year. Gains will be driven by healthy growth in antioxidants and flame retardants, the two largest protective additives in volume terms. Demand for light stabilizers will also expand, ..."
--Section IV, pg. 130

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Other Studies

Fiber-Reinforced Plastic Composites

US demand for fiber-reinforced plastic (FRP) composites will climb 4.7 percent annually to 4.3 billion pounds in 2017, valued at $22.9 billion. Motor vehicles will remain the largest market while construction will grow the fastest as it rebounds from the 2007-2012 period. Both thermoset and thermoplastic FRP composites will grow in line with the average. This study analyzes the 3.5 billion pound US FRP composites industry, with forecasts for 2017 and 2022 by fiber, product and market. The study also evaluates company market share and profiles industry players.

#3092 .... October 2013 .... $5100

World Bioplastics

Global demand for biobased and biodegradable plastics will rise 19 percent per year to 960,000 metric tons in 2017. Starch-based resins and polylactic acid (PLA) will remain the leading products, while the most rapid gains in demand are expected for biobased commodity resins such as polyethylene and polypropylene. This study analyzes the 408,000 metric ton world bioplastic industry, with forecasts for 2017 and 2022 by product, market, world region, and for 17 countries. The study also evaluates company market share and profiles industry players.

#3089 .... November 2013 .... $6300

High-Temperature Plastics

US demand for high-temperature plastics will rise 5.8 percent per year to $3.1 billion in 2017. Advances in the key fluoropolymers segment will trail the average growth rate, but these resins will continue to offer the best opportunities for growth. Polyketones, polyphenylene sulfide, and sulfone polymers will achieve the fastest gains from smaller bases. This study analyzes the $2.4 billion US high-temperature plastics industry, with forecasts for 2017 and 2022 by resin and market. The study also evaluates company market share and profiles industry players.

#3053 ....June 2013 .... $5100

Custom Thermoplastic Compounding

US demand for custom compounded thermoplastics is forecast to rise 5.0 percent annually to 11.4 billion pounds in 2017, valued at $14.3 billion (resin content only). Construction will offer the best market prospects, as the industry recovers from recession. PVC represents the largest and fastest growing compounded thermoplastic. This study analyzes the 8.9 billion pound US custom compounded thermoplastic industry, with forecasts for 2017 and 2022 by resin and market. The study also evaluates company market share and profiles industry players.

#2991 .... February 2013................. $5100

World Flame Retardants

World demand for flame retardant additives is forecast to rise 5.4 percent per year to 2.6 million metric tons in 2016. The Asia/Pacific region will continue to be largest and fastest growing market, accounting for over half of world demand in 2016. Boron and phosphorus compounds will be among the fastest growing types. This study analyzes the 1.9 million metric ton world flame retardant industry, with forecasts for 2016 and 2021 by product, market, world region and for 18 countries. The study also evaluates company market share and profiles industry participants.

#2987 .... February 2013................. $6100

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