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[Table of Contents 2](#)

[List of Tables & Charts 3](#)

[Study Overview 4](#)

[Sample Text, Table  
& Chart 5](#)

[Sample Profile, Table &  
Forecast 6](#)

[Order Form & Corporate  
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[About Freedonia,  
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Related Studies, 8](#)

# Custom Thermoplastic Compounding

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

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Study #2991 | February 2013 | \$5100 | 285 pages

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## Table of Contents

### EXECUTIVE SUMMARY

### MARKET ENVIRONMENT

General .....	4
Macroeconomic Overview .....	5
Demographic Trends .....	8
Manufacturing Outlook .....	12
Thermoplastics Overview .....	15
Thermoplastic Resins .....	17
Thermoplastic Elastomers .....	19
Thermoplastic Compounding Overview .....	20
Historical Market Trends .....	22
Pricing Trends .....	24
Regulatory Considerations .....	26
Recycling Activity .....	28
International Activity .....	32

### RESINS

General .....	34
Polyvinyl Chloride .....	37
Characteristics & Producers .....	38
Markets .....	41
Engineering Thermoplastics .....	46
Characteristics & Producers .....	49
Markets .....	53
Nylon .....	57
Acrylonitrile-Butadiene-Styrene .....	59
Polycarbonate .....	60
Other Engineering Thermoplastics .....	63
Polypropylene .....	64
Characteristics & Producers .....	65
Markets .....	67
Polyethylene .....	71
Characteristics & Producers .....	72
Markets .....	73
Thermoplastic Elastomers .....	76
Characteristics & Producers .....	77
Markets .....	79
Polystyrene .....	83
Characteristics & Producers .....	84
Markets .....	85
Other Thermoplastic Resins .....	88
Characteristics & Producers .....	89
Markets .....	90

### MARKETS

General .....	93
---------------	----

Construction .....	95
Building Construction Outlook .....	96
Resins .....	98
Applications .....	102
Pipe & Fittings .....	103
Siding, Windows, & Doors .....	105
Other Uses .....	107
Motor Vehicles .....	107
Motor Vehicle Outlook .....	108
Resins .....	111
Engineering Thermoplastics .....	113
Polypropylene .....	115
Thermoplastic Elastomers .....	116
Other Resins .....	118
Applications .....	118
Interior .....	119
Engine & Mechanical .....	121
Structural & Exterior .....	122
Consumer & Institutional .....	123
Consumer Spending Outlook .....	124
Resins .....	127
Polyvinyl Chloride .....	130
Polypropylene .....	131
Engineering Thermoplastics .....	131
Thermoplastic Elastomers .....	132
Other Resins .....	133
Applications .....	133
Electrical & Electronic Equipment .....	136
Electrical & Electronic Equipment Outlook .....	137
Resins .....	139
Applications .....	144
Insulated Wire & Cable .....	147
Insulated Wire & Cable Outlook .....	148
Resins & Applications .....	149
Other Markets .....	154
Packaging .....	155
Packaging Industry Outlook .....	156
Resins & Applications .....	158
Appliances .....	162
Appliance Industry Outlook .....	163
Resins & Applications .....	165
Machinery .....	169
Machinery Outlook .....	169
Resins & Applications .....	171
All Other Markets .....	174

### INDUSTRY STRUCTURE

General .....	177
Market Share .....	180
Acquisitions & Divestitures .....	184

Types of Compounders .....	188
Processors .....	190
Independent Compounders .....	190
Resin Producers .....	191
Marketing Strategies .....	191
Channels of Distribution .....	193
Research & Development .....	194
Competitive Strategies .....	196
Cooperative Agreements .....	197

### COMPANY PROFILES

Adell Plastics .....	201
Americhem Incorporated .....	202
AMETEK Incorporated .....	205
Ampacet Corporation .....	207
Asahi Kasei .....	209
Axiall Corporation .....	211
BASF SE .....	213
Bayer AG .....	217
Berkshire Hathaway .....	219
Celanese Corporation .....	222
Citadel Plastics .....	224
Clariant International .....	226
Dow Chemical .....	228
Dow Corning .....	231
DuPont (EI) de Nemours .....	232
Exxon Mobil .....	234
Ferro Corporation .....	236
ICC Industries .....	239
Kraton Performance Polymers .....	241
LANXESS AG .....	243
LyondellBasell Industries .....	245
Mitsui Chemicals .....	248
PolyOne Corporation .....	250
Ravago SA .....	257
RheTech Incorporated .....	260
Royal DSM .....	261
RTP Company .....	263
Saudi Basic Industries .....	265
Schulman (A.) Incorporated .....	267
Shin-Etsu Chemical .....	272
Spartech Corporation .....	273
Standridge Color .....	275
Techmer PM LLC .....	276
Teknor Apex .....	278
3M Company .....	282
Washington Penn Plastic .....	284

## List of Tables

### EXECUTIVE SUMMARY

- 1 Summary Table..... 3

### MARKET ENVIRONMENT

- 1 Macroeconomic Indicators ..... 8
- 2 Population & Households.....12
- 3 Manufacturers' Shipments .....15
- 4 Thermoplastics & Thermoplastic Elastomers Demand .....16
- 5 Thermoplastic Compounding Market, 2002-2012.....23
- 6 Thermoplastic Compounds Pricing .....26

### RESINS

- 1 Compounded Thermoplastics Demand by Resin .....36
- 2 Compounded Polyvinyl Chloride Demand...38
- 3 Compounded Polyvinyl Chloride Demand by Market .....45
- 4 Compounded Engineering Thermoplastics Demand .....49
- 5 Compounded Engineering Thermoplastics Demand by Market .....56
- 6 Compounded Polypropylene Demand.....65
- 7 Compounded Polypropylene Demand by Market .....70
- 8 Compounded Polyethylene Demand .....72
- 9 Compounded Polyethylene Demand by Market .....75
- 10 Compounded Thermoplastic Elastomers Demand .....77
- 11 Compounded Thermoplastic Elastomers Demand by Market .....82
- 12 Compounded Polystyrene Demand .....84
- 13 Compounded Polystyrene Demand by Market .....87
- 14 Other Compounded Thermoplastics Demand .....89
- 15 Other Compounded Thermoplastics Demand by Market .....92

### MARKETS

- 1 Compounded Thermoplastics Demand by Market .....94

- 2 Building Construction Expenditures.....97
- 3 Construction Market for Compounded Thermoplastics by Resin..... 101
- 4 Construction Market for Compounded Thermoplastics by Application..... 103
- 5 Motor Vehicle Indicators..... 111
- 6 Motor Vehicle Market for Compounded Thermoplastics by Resin..... 112
- 7 Motor Vehicle Market for Compounded Thermoplastics by Application..... 119
- 8 Personal Consumption Expenditures ..... 127
- 9 Consumer & Institutional Market for Compounded Thermoplastics by Resin 129
- 10 Consumer & Institutional Market for Compounded Thermoplastics by Application..... 136
- 11 Electrical & Electronic Equipment Shipments ..... 139
- 12 Electrical & Electronics Market for Compounded Thermoplastics by Resin 143
- 13 Electrical & Electronics Market for Compounded Thermoplastics by Application..... 146
- 14 Insulated Wire & Cable Shipments..... 149
- 15 Wire & Cable Market for Compounded Thermoplastics by Resin..... 153
- 16 Other Markets for Compounded Thermoplastics ..... 155
- 17 Packaging Supply & Demand ..... 158
- 18 Packaging Market for Compounded Thermoplastics by Resin..... 162
- 19 Appliance Shipments ..... 164
- 20 Appliance Market for Compounded Thermoplastics by Resin..... 168
- 21 Machinery Shipments ..... 171
- 22 Machinery Market for Compounded Thermoplastics by Resin..... 174
- 23 All Other Markets for Compounded Thermoplastics by Resin..... 176

### INDUSTRY STRUCTURE

- 1 US Sales of Selected Custom Thermoplastic Compounders by Company, 2012..... 178
- 2 Selected Acquisitions & Divestitures..... 186
- 3 Selected Cooperative Agreements..... 199

## List of Charts

### MARKET ENVIRONMENT

- 1 Thermoplastics & Thermoplastic Elastomers Demand by Type, 2012 ..... 17
- 2 Thermoplastic Compounding Market, 2002-2012.....24

### RESINS

- 1 Compounded Thermoplastics Demand by Resin, 2012 .....37
- 2 Compounded Polyvinyl Chloride Demand by Market, 2012.....46
- 3 Compounded Engineering Thermoplastics Demand by Market, 2012.....57
- 4 Compounded Polypropylene Demand by Market, 2012.....71
- 5 Compounded Polyethylene Demand by Market, 2012.....76
- 6 Compounded Thermoplastic Elastomers Demand by Market, 2012.....83
- 7 Compounded Polystyrene Demand by Market, 2012.....88

### MARKETS

- 1 Compounded Thermoplastics Demand by Market, 2012.....95
- 2 Construction Market for Compounded Thermoplastics by Resin, 2012 ..... 102
- 3 Motor Vehicle Market for Compounded Thermoplastics by Resin, 2012 ..... 113
- 4 Consumer & Institutional Market for Compounded Thermoplastics by Resin, 2012 ..... 130
- 5 Electrical & Electronics Market for Compounded Thermoplastics by Resin, 2012 ..... 144
- 6 Wire & Cable Market for Compounded Thermoplastics by Resin, 2012 ..... 154

### INDUSTRY STRUCTURE

- 1 US Custom Thermoplastic Compounding Market Share, 2012 ..... 181
- 2 Thermoplastic Compounding Industry Flowchart, 2012 ..... 189

*Advances will be fueled by continuing efforts among custom compounders to develop new and innovative products that will broaden the range of applications for thermoplastics.*

## US demand to rise 5% annually through 2017

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). The total value of custom thermoplastic compounding, including resins, additives, fillers, and other production costs, will reach \$18.4 billion at that time. Advances will be fueled by continuing efforts among custom compounders to develop new and innovative products that will broaden the range of applications for thermoplastics, making them more competitive with alternative materials.

## PVC to be largest, fastest growing compounded resin

Polyvinyl chloride (PVC) represents the largest, fastest growing resin in the custom thermoplastic compounding market. Advances will be based on the dominance of PVC in the rebounding construction market, where it is widely used for pipes, fittings, and siding. Rising construction activity will also create substantial opportunities for polyethylene in areas such as pipe, decking, and vapor barriers. Moreover, healthy gains are anticipated for polypropylene, engineering thermoplastics, and thermoplastic elastomers, with each deriving strength from the motor vehicle market, where they are valued for their ability to reduce vehicle weight and cut costs while providing enhanced aesthetics and innovative design features.

## US Compounded Thermoplastic Demand, 2017

(11.4 billion pounds)



## Construction to offer best market opportunities

Construction will offer the best prospects, as it was just beginning to emerge from its post-recession trough in 2012, leaving significant room for expansion going forward. Strong gains in the pipe and fittings segment will be supported by plastic pipe's competitive cost structure, light weight, corrosion resistance, long service life, and lower installed costs relative to competitive materials. Thermoplastic compounds also find favor in applications such as decking, fencing, siding, and windows due to a number of advantages over traditional wood products, including greater durability and lower maintenance requirements.

However, pipe and siding processors frequently perform compounding in-house, thus restricting opportunities for custom compounders.

Demand for thermoplastics used in motor vehicle parts and components will be driven by ongoing efforts of automakers to comply with increasingly stringent fuel economy standards, since thermoplastics can be used in place of metals to help reduce vehicle weight. Compounded plastics will also benefit from their durability, design flexibility, and relatively low cost. In particular, long glass fiber reinforced polypropylene is making significant inroads on steel in semi-structural applications, as well as in aesthetic and under-the-hood uses.

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## Sample Text, Table & Chart

### MARKETS

#### Machinery

Machinery applications accounted for just three percent demand for custom compounded thermoplastics in 2012. The market is diverse, including a wide range of products such as construction, and mining; industrial; commercial and service and metalworking machinery, as well as HVAC (heating/ventilation and conditioning) and commercial refrigeration equipment. Engineering and power transmission equipment is also included.

**Machinery Outlook --** Numerous macroeconomic and specific trends influence the health of the machinery industry. Factors include capital investment levels, development of new technologies, foreign trade, product pricing, and consumer income and spending patterns. Industrial machinery purchases are heavily dependent on overall macroeconomic growth, since much of this equipment represents significant capital purchases for manufacturers. Thus, as economic growth slows, expectations for production and profits decline, causing manufacturers to become more conservative in their capital expenditures, in turn leading to significant slowing in demand for industrial machinery. Conversely, when macroeconomic growth accelerates, manufacturers increase purchases of industrial machinery in response to rising demand and anticipation of higher profits.

In inflation-adjusted terms, machinery shipments are forecast to climb through 2017, accelerating from the marginal gains of 2012. Machinery shipments are expected to grow steadily as manufacturers replace old machinery with new capabilities to improve productivity. As the recession began in 2008, machinery shipments fell, but recovered relatively well through 2008, supported largely by government spending. The decline in 2009 was caused in part by the decline in the dollar against foreign currencies, but as the economic do

**SAMPLE TEXT**

TABLE IV-9

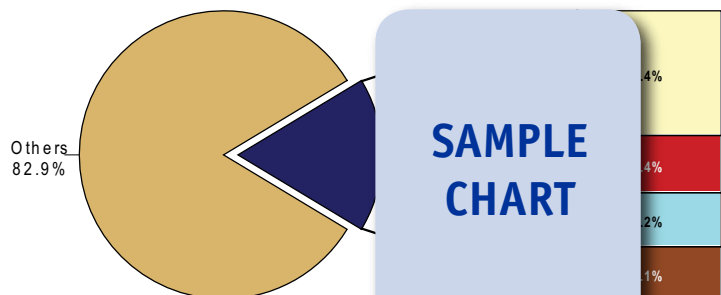
CONSUMER & INSTITUTIONAL MARKET FOR COMPOUNDED THERMOPLASTICS BY RESIN (million pounds)

Item	2002	2007	2012	2017	2022
Consumer Expenditures (bil 2005\$)					
lbs TP/000\$ expenditures					
TPs in Consumer/Institutional % compounded					
Compound TPs in Consumer/Institutional					
Polyvinyl Chloride					
Polypropylene					
Engineering Thermoplastics					
Thermoplastic Elastomers					
Polyethylene					
Polystyrene					
Other					
% consumer & institutional Compounded Thermoplastics Demand					

**SAMPLE TABLE**

CHART V-1

US CUSTOM THERMOPLASTIC COMPOUNDING MARKET SHARE (\$13.4 billion, 2012)

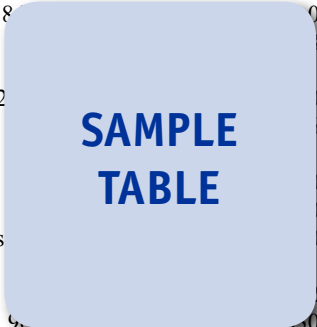


**SAMPLE CHART**

## Sample Profile, Table & Forecast

**TABLE III-8**  
**COMPOUNDED POLYETHYLELE DEMAND**  
 (million pounds)

Item	2002	2007	2012	2017	2022
Bldg Construction Expend (bil 2005\$)8 lbs polyethylene/000\$ construction					
Total Polyethylene Demand % custom compounded	2				
Compounded Polyethylene Demand High Density Polyethylene Low Density & Other Polyethylenes					
% polyethylene Compounded Thermoplastics Demand 9					



**COMPANY PROFILES**

**Dow Corning Corporation**  
 2200 West Salzburg Road  
 Midland, MI 48686  
 989-496-  
 http://wv

Sales: \$  
 Employr

Key Pro...  
 additive

...ic compounds, and

**SAMPLE PROFILE**

Dow Corning is a 50/50 joint venture between Corning Incorporated (Corning, New York) and Dow Chemical Company (Midland, Michigan). The Company develops, manufactures, and markets polymers and other materials based on silicon chemistry. Dow Corning's products are designed to release, defoam, insulate, waterproof, lubricate, seal, coat, and protect.

The Company participates in the US thermoplastic compounding industry through the Multibase SA subsidiary (France), which manufactures proprietary and custom thermoplastic compounds, as well as additive masterbatches for use in automotive, appliance, packaging, and other applications. Among Multibase's thermoplastic compounds are products sold under the MULTIFLEX, MULTIPRO, and TPSIV brand names. MULTIFLEX thermoplastic elastomers feature impact resistance and heat stability properties for use in injection and extrusion processes. The company's MULTIPRO polyolefin compounds are designed to resist flames, detergents, and ultraviolet light. TPSIV thermoplastic silicone vulcanizate compounds are available in grades that are approved for use with food and potable water. Multibase's additive masterbatches encompass products marketed under the MULTIBATCH

231

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"Demand for compounded polyethylene is expected to climb at a 4.9 percent annual pace to 1.4 billion pounds in 2017. High density polyethylene accounts for the majority of the total and is expected to advance at a more rapid rate than low density types through the forecast period. Nevertheless, opportunities are expected for compounded low density types due to advantages such as higher tensile and impact strength and better resistance to stress cracking. These types are more flexible than HDPE and are widely utilized in wire and cable applications ..."

--Section III, pg. 71

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**OTHER STUDIES**

**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

**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

**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

**Recycled Plastics**

US demand for post-consumer recycled plastic will rise 6.5 percent yearly to 3.5 billion pounds in 2016. Bottles will remain the leading source while other types gain market share. LDPE/LLDPE will be the fastest growing recycled resins. Packaging will continue as the top market, driven by food and beverage bottles and thermoformed containers. This study analyzes the 2.5 billion pound US recycled plastics industry, with forecasts for 2016 and 2021 by source, resin, and market. The study also evaluates company market share and profiles industry players.

#2961 ..... November 2012 ..... \$5100

**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

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