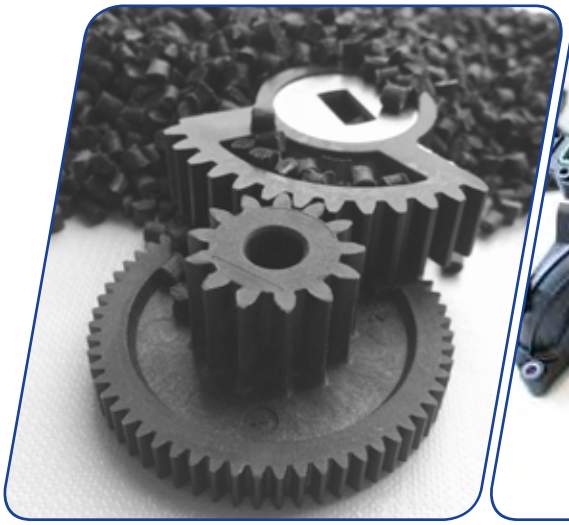
Market Study: Polyamide - PA6 & PA66



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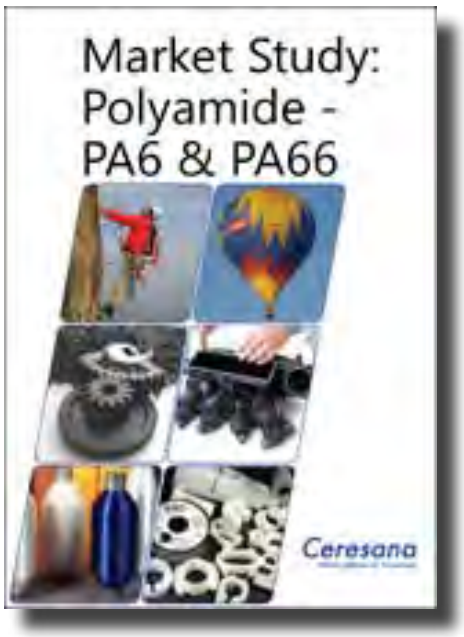
  Who exactly are your competitors - and what are their strengths and weaknesses
- **Obtain a more detailed picture of your segment**
  Learn which time is the best for entering or leaving a market
- **Have a look at the future**
  Find out if new investments and technologies are worthwhile and how to gain access to future markets. We also show possible market scenarios
- **Recognize opportunities and risks**
  Identify opportunities and risks on your target markets in time

This study is useful for:

- Producers, traders and converters of Polyamide 6 and Polyamide 66 as well as other plastics
- Suppliers of raw materials and additives
- Companies operating in the fields of: Transportation, electrical applications and electronics, consumer goods, packaging and films, textiles, fibers
- Associations and institutes
- Executive board, technology and production, strategic planning, R&D, market research, marketing, sales and distribution, procurement

In this brochure you will find information on the Market Study Polyamide:

- An introduction on page 3
- A summary of the table of contents on page 4
- In the following, there are example pages from the study
- Please use the form on the last page to easily order your copy or a free reading sample!



There are different types of polyamides that vary in their chemical constitution and are derived from different raw materials. The most important polyamides are the product types polyamide 6 (PA6) and polyamide 66 (PA66). All details of the present study relate to the two products. In 2014, a worldwide turnover of around 24.4 billion US$ was achieved with PA6 and PA66. Ceresana expects annual revenues to increase by 3.1% p.a. to approximately 31.2 billion US$ until 2022.

Fibers and filaments vs. Technical plastic

The most important sales market for PA6 and PA66 is the production of fibers and filaments. Polyamide fibers are synthetic fibers and are considered to be especially tearing and abrasion-resistant and have a high elasticity and shape stability. PA6 and PA66 are used for the production of textiles and industrial filaments as well as for carpet and staple fibers.
About 43% of global demand for PA6 and PA66 are used as technical plastic in a large number of different applications. Polyamide is mainly used in the transportation area, for example for brake hoses, plug connectors, battery cases, oil sumps, switches and handles. The highest growth rate between 2014 and 2022 we forecast for the second largest application area electrical applications and electronics that is likely to see market volume increase by 4.3% p.a. during the next eight years.

Regional differences: Polyamide 6 and Polyamide 66

At a global level, PA6 accounted for the largest part of total demand for polyamide. This market is dominated by the Asia-Pacific region that reached a global demand of approx. 68% in 2014. Here, mainly the high demand for PA6 in the segment textile filaments plays an important role: In Asia, around 1.5 million tonnes account for this application. While global demand for PA6 is mainly determined by the segments textile and industrial filaments, technical applicants account for almost 56% of demand for PA66 - in Western Europe even 71%.

The Study in Brief:

Chapter 1 provides a presentation and analysis of the global market for polyamide (PA6 and PA66), including forecasts up to 2022: revenues development as well as production and demand volumes are analyzed.

Chapter 2 offers a detailed analysis of the polyamide market in the 19 major countries. Data on demand, revenues, production, producers of PA and their capacities as well as import and export is provided. Demand for PA split by applications is examined in more detail for the individual countries. Furthermore, the aggregated demand for PA is split by technical and fiber quality as well as by the individual product types PA6 and PA66.

Chapter 3 offers a detailed analysis of the applications for polyamide (PA6 and PA66). The segments transportation, electrical applications and electronics, consumer goods, packaging and foils, other technical applications, textile filaments, industrial filaments as well as other fiber applications are examined.

In Chapter 4, the product types PA6 and PA66 are examined individually. Development of demand as well as the application areas for the world and the regions Western Europe, Eastern Europe, North America, South America and Asia-Pacific are examined.

Chapter 5 provides useful company profiles of the largest producers of PA – clearly arranged according to contact details, turnover, profit, product range, production sites, capacities and profile summary.

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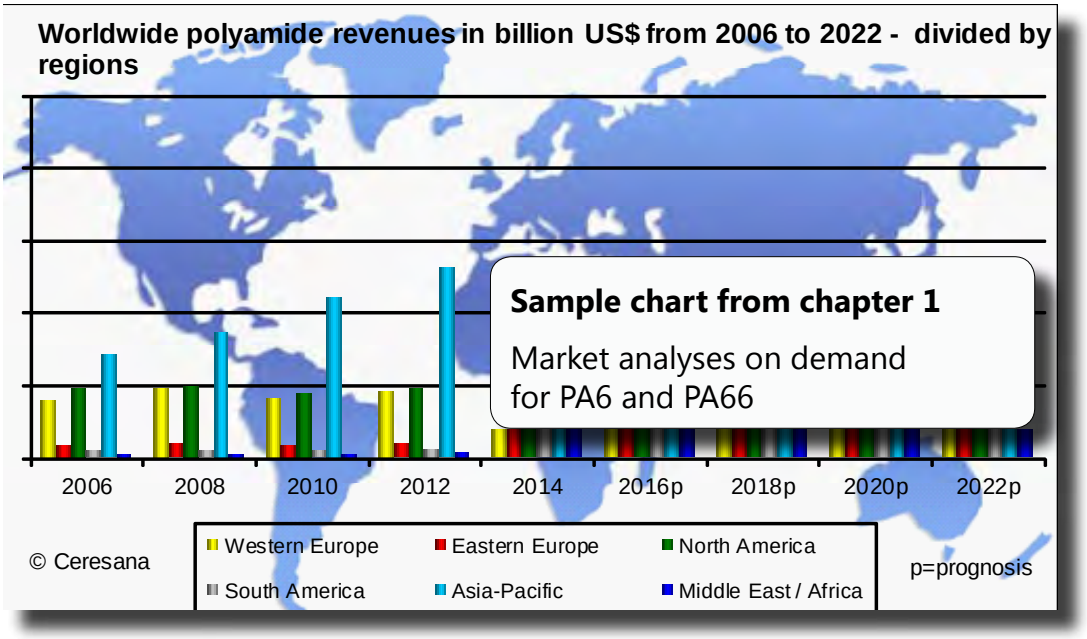

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South Korea (1)
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Iran (1)
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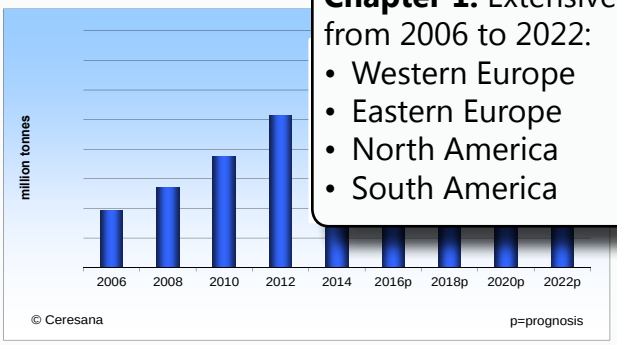
1.3.2 Production – Eastern Europe

In 2014, about X tonnes of polyamide 6 and polyamide 66 were produced in Eastern Europe. For the upcoming eight years, we forecast a continous increase of Eastern European polyamide output at average rates of X% per year. Major producer of polyamide in Eastern Europe is Russia. In 2014, almost half of the total production with a volume of X tonnes was produced there.

Chapter 1: Extensive market data from 2006 to 2022:

- Western Europe
- Eastern Europe
- North America
- South America
- Asia-Pacific
- Middle East/ Africa



Graph 1: Production of polyamide in Eastern Europe from 2006 to 2022

in 1000 tonnes	2006	2008	2010	2012	2014	2016p	2018p	2020p	2022p	2014-2022
Poland	X	X	X	X	X	X	X	X	X	XX% p.a.
Russia	X	X	X	X	X	X	X	X	X	XX% p.a.
Turkey	X	X	X	X	X	X	X	X	X	XX% p.a.
Others	X	X	X	X	X	X	X	X	X	XX% p.a.
Total	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**XX% p.a.**

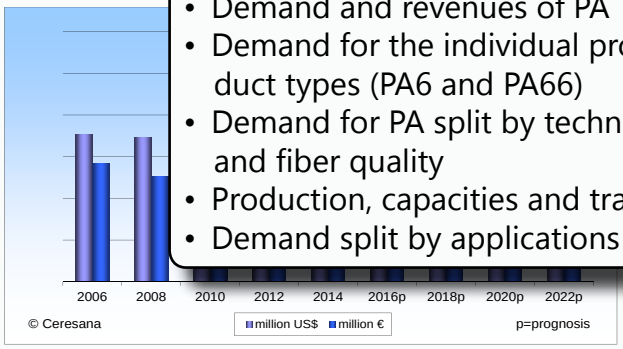
Table: Production of polyamide in Eastern Europe from 2006 to 2022 – split by major countries

2.5.4.1 Demand and revenues - South Korea

Demand for polyamide in South Korea amounted to around X tonnes in 2014. Thus, demand fell by an average of X% p.a. since 2006. We expect demand in South Korea to increase again by X% per year to X tonnes by 2022. Polyamide revenues in South Korea amounted to ar
million US$ to be gene

Chapter 2: Market analyses for 19 countries:

- Demand and revenues of PA
- Demand for the individual product types (PA6 and PA66)
- Demand for PA split by technical and fiber quality
- Production, capacities and trade
- Demand split by applications



Graph: Polyamide revenues in South Korea from 2006 to 2022 in million US$ and million €

In 2014, the largest sales market for polyamide in South Korea was the segment textile filaments. The second largest sales market, the transportation sector, followed at a considerable distance in front of the segment industrial filaments. Within the next eight years, we expect demand for polyamide in the segment transportation to develop the most dynamically by approx. X% p.a. Through this increase, demand in the segment transportation will be larger than demand in the sector industrial filaments.

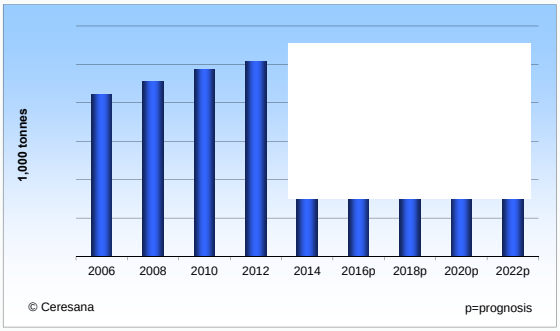
In 2014, PA6 was the most important product type in South Korea with a market volume of around X tonnes. Over the forecasting period until the year 2022, PA6 and PA66 will develop positively with an annual growth rate of X%. Demand will increase to X tonnes and X tonnes.

in 1,000 tonnes	2006	2008	2010	2012	2014	2016p	2018p	2020p	2022p	2014-2022
Polyamide 6	X	X	X	X	X	X	X	X	X	XX% p.a.
Polyamide 66	X	X	X	X	X	X	X	X	X	XX% p.a.
Total PA6 & PA66	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**XX% p.a.**
PA6 & PA66 – Technical	X	X	X	X	X	X	X	X	X	XX% p.a.
PA6 & PA66 - Fibers	X	X	X	X	X	X	X	X	X	XX% p.a.

Table: Demand for polyamide in South Korea from 2006 to 2022 – split by polyamide types

2.5.4.2 Production, capacities and trade

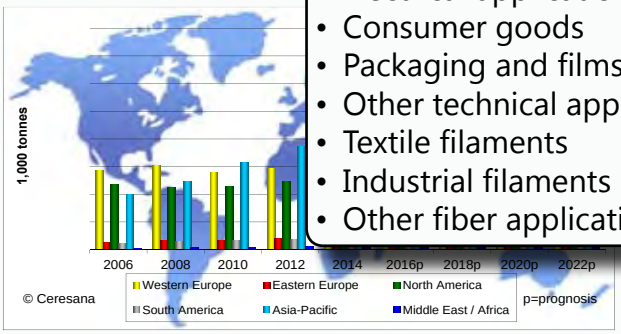
About X tonnes of polyamide were produced in South Korea in 2014. We forecast production volume to increase by X% p.a. during the upcoming eight years. In 2022, South Korea is likely to produce more than X tonnes of polyamide.



Graph: Production of polyamide in South Korea from 2006 until 2022

3.1.1 Applications - Transportation

In 2014, around X million tonnes of polya
portation (Graph). Thus, demand in this ap
an expected X% p.a. increase, global dema
amount to approx. X million tonnes in 202



Graph: Global demand for polyamide in transportation from 2006 to 2022 – split by regions

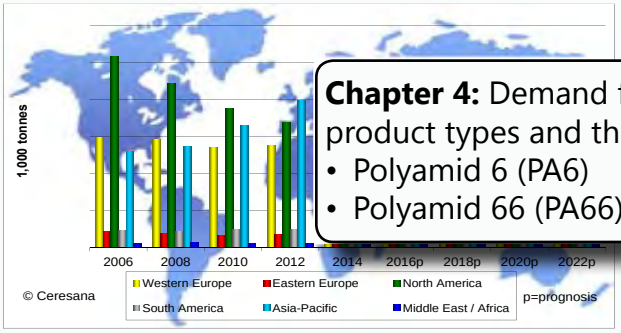
While demand will increase at only low growth rates in the industrialized regions Western Europe and North America in the next eight years, growth rates in all other regions are likely to be considerably higher; market volume will increase by between X% p.a. and X% per year. With X tonnes, Asia-Pacific had the highest demand of polyamide (Table). Processors in Western Europe ranked second, followed by North America. At a significant distance followed demand recorded in Eastern Europe and South America. We expect demand for polyamide in the segment transportation to continue to develop at the favor of Asia-Pacific in the future. This region is projected to increase demand by X% p.a. until 2022.

Chapter 3: Demand per region and country split by the following applications:

- Transportation
- Electrical applications and electronics
- Consumer goods
- Packaging and films
- Other technical applications
- Textile filaments
- Industrial filaments
- Other fiber applications

4.2.1 Polyamide 66 (PA66)

In 2014, about X million tonnes of PA66 were processed worldwide. In the past eight years, demand rose at an average rate of X% per year. Around X% of global demand in 2014 originated in Asia-Pacific. Western Europe ranked second, followed at a considerable distance by North America. Far behind, South America, Eastern Europe and the Middle East / Africa revealed significantly lower market shares.



Graph: Global demand for PA66 from 2006 to 2022 – split by regions

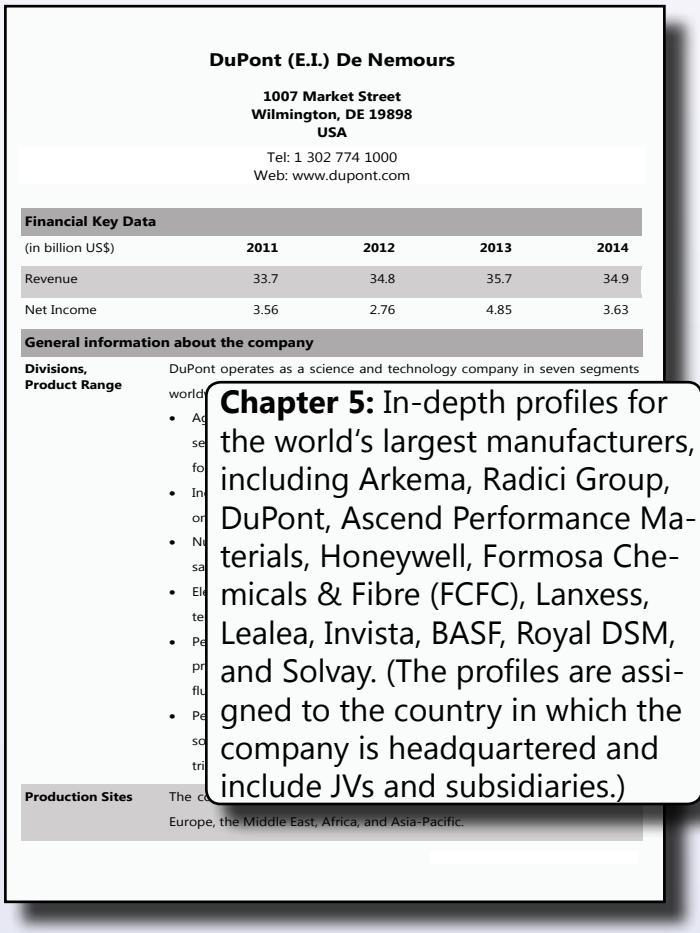
in 1,000 tonnes	2006	2008	2010	2012	2014	2016p	2018p	2020p	2022p	2014 - 2022
Transportation	X	X	X	X	X	X	X	X	X	XX% p.a.
Electrical & Electronics	X	X	X	X	X	X	X	X	X	XX% p.a.
Consumer goods	X	X	X	X	X	X	X	X	X	XX% p.a.
Packaging and films	X	X	X	X	X	X	X	X	X	XX% p.a.
Other Technical Application	X	X	X	X	X	X	X	X	X	XX% p.a.
Textile filaments	X	X	X	X	X	X	X	X	X	XX% p.a.
Industrial filaments	X	X	X	X	X	X	X	X	X	XX% p.a.
Other Fiber application	X	X	X	X	X	X	X	X	X	XX% p.a.
Total	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**XX% p.a.**

Table: Global demand for PA66 from 2006 to 2022 – split by applications

Chapter 4: Demand for PA split by product types and their applications:

- Polyamid 6 (PA6)
- Polyamid 66 (PA66)

Market Study Polyamide - PA6 & PA66: 19 Countries, 68 Producers, 380 Pages



DuPont (E.I.) De Nemours

1007 Market Street
Wilmington, DE 19898
USA

Tel: 1 302 774 1000
Web: www.dupont.com

Financial Key Data				
(in billion US$)	2011	2012	2013	2014
Revenue	33.7	34.8	35.7	34.9
Net Income	3.56	2.76	4.85	3.63

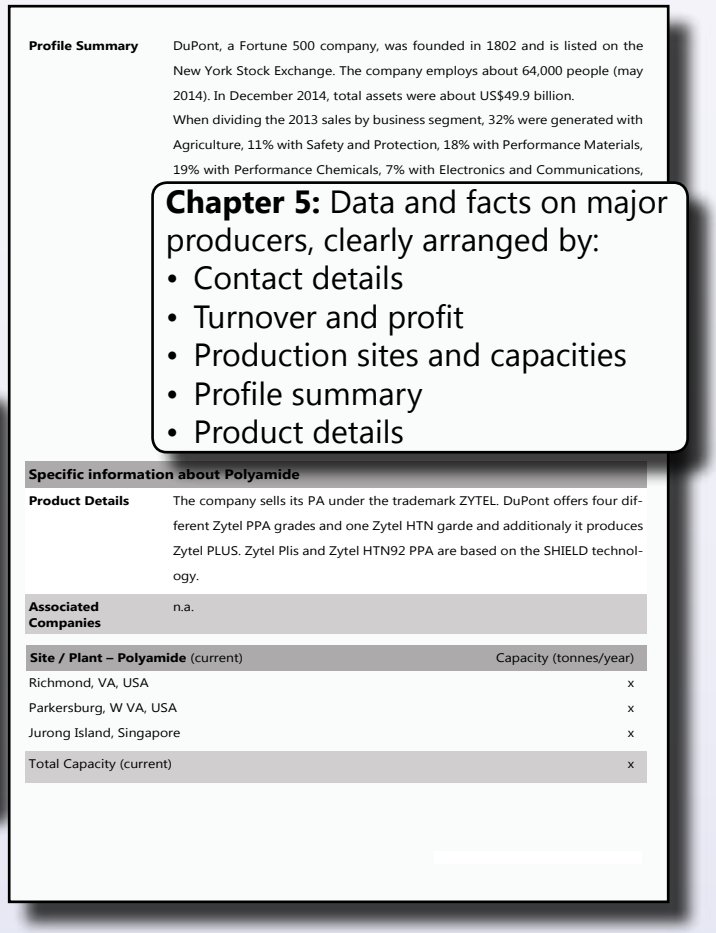
General information about the company

Divisions, Product Range DuPont operates as a science and technology company in seven segments

Production Sites The co

Europe, the Middle East, Africa, and Asia-Pacific.

Chapter 5: In-depth profiles for the world's largest manufacturers, including Arkema, Radici Group, DuPont, Ascend Performance Materials, Honeywell, Formosa Chemicals & Fibre (FCFC), Lanxess, Lealea, Invista, BASF, Royal DSM, and Solvay. (The profiles are assigned to the country in which the company is headquartered and include JVs and subsidiaries.)



Profile Summary DuPont, a Fortune 500 company, was founded in 1802 and is listed on the New York Stock Exchange. The company employs about 64,000 people (may 2014). In December 2014, total assets were about US$49.9 billion.
When dividing the 2013 sales by business segment, 32% were generated with Agriculture, 11% with Safety and Protection, 18% with Performance Materials, 19% with Performance Chemicals, 7% with Electronics and Communications,

Chapter 5: Data and facts on major producers, clearly arranged by:
- Contact details
- Turnover and profit
- Production sites and capacities
- Profile summary
- Product details

Specific information about Polyamide

Product Details The company sells its PA under the trademark ZYTEL. DuPont offers four different Zytel PPA grades and one Zytel HTN garde and additionaly it produces Zytel PLUS. Zytel Plis and Zytel HTN92 PPA are based on the SHIELD technology.

Associated Companies n.a.

Site / Plant – Polyamide (current)	Capacity (tonnes/year)
Richmond, VA, USA	x
Parkersburg, W VA, USA	x
Jurong Island, Singapore	x
Total Capacity (current)	x

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