Market Study: PUR - Paints & Coatings







Dear decision-makers,

Nowadays, information is available in overwhelming amounts. But what is the best way to find the crucial data?

Thousands of companies use our knowledge. Based on our experience, we provide decisive data for our clients.

Our extensive and practiceoriented studies offer precise market analyses and forecasts!

Why should you make use of our knowledge?

Our understanding of the markets helps you to assess potentials, products, and technologies, but also competitors. Our studies will help you save time and prevent costly wrong decisions. That way, you can create an ever more effective and efficient future for your company.

We are your experts

Ceresana has been the most trusted market research company for the industrial sector already for 15 years.

We would be pleased to assist you in this challenging market environment as well!

Oliver Kutsch, CEO



Our Market Studies

Your Strategic Planning

Your **Success**

Your competent partner for market studies:

- Experienced and neutral experts
- Quantitative and qualitative primary and secondary market research
- Reliable and objective survey, analysis, forecast, and preparation of data
- Expertise in branches, legal situation, innovations, and technologies

The basis for your strategic planning:

- Analysis of attractiveness and current situation of the market
- · Analysis of the future development of the market
- Analysis of competitors
- Analysis of customer industries
- · Analysis of supply industries

With our studies you will recognize:

- Current market trends and developments on time
- Ideal procurement and sales markets
- Relevant future markets and target groups
- · Risks and market chances on time
- Candidates for mergers and acquisitions as well as divestments

The strategic planning enables you to:

- Restructure your product portfolio
- Evaluate current and potential locations
- Plan and develop new marketable products
- Better adapt to needs and requirements of customers
- · Deal with future markets

Polyurethane coatings offer excellent optical properties, such as high gloss and brilliance. Polyurethanes (PUR) are reaction products of polyisocyanate curing agents with several polymers, e.g. with polycarbonates. Especially PUR-based twocomponent coatings are very solid, offer good resistance to aggressive chemicals, weathering, and mechanical stress. For the first time, Ceresana examined the global market for PUR paints and coatings in detail: The market research institute forecasts revenues generated with these products to rise to USD 20.3 billion until 2025. The most important applications are furniture and wood processing, transportation, and other industries. In 2017, approx. 53 % of global demand was registered in Asia-Pacific, followed by North America and Western Europe.

The most important sales market for PUR paints and coatings in 2017 was the segment wood processing/furniture with a share of 37.0% of total global demand. Color, structure, and pore formation of the wood are properties, which should be retained or reinforced during coating. Two-component PUR systems are highly reactive, can be sanded quickly, are resistant to household chemicals, have a good filling power, improve grain contrasts, and provide mechanical stability.

Glossy Cars

Demand for PUR coatings for vehicles (OEM and refinishing) accounted for more than 28% of the global market in 2017. Series painting (OEM coatings) can be divided into the stages cathodic electrodeposition, car underbody protection and application of primer surfacers, basecoat, and clearcoat. The electrodeposition coating protects from corrosion, primer surfacers provide an even foundation, the basecoat provides color and effect, and the clearcoat offers chemical and scratch resistance. Refinishing coatings is used in case of damages, for used cars as well as for special coating for new vehicles. Of all applications of PUR coatings, the segment transportation (OEM) will account for the highest growth in percentages until 2025 at an AAGR of 3.9%.

Protected Buildings

Ceresana expects the construction segment to increase its demand for PUR coatings by 2.6% per year. This downstream market is decisively

affected by residential construction, commercial construction, and projects regarding infrastructure construction. PUR coatings are also utilized for particular products, e.g. façade elements, doors, window profiles, and gutters besides protection of buildings and bridges.

Coatings for the Industry

Demand for PUR coatings in the industrial sector amounted to about 325,000 tonnes in 2017. Protection coatings for industrial facilities and machines account for the major share within this application area: Aggressive conditions prevail during oil production, petrochemical processing, and energy generation in particular. Commonly, a long durability of the paints and coatings is desirable to prolong service intervals. The group of other applications is the smallest segment: This category comprises all special applications of paints and coatings, e.g. the use for electrical and electronic devices, packaging, sports equipment, toys, medical products, and textiles.

The Study in Brief:

Chapter 1 provides a depiction of the global market for paints and coatings based on PUR – including forecasts up to 2025: Data on demand and revenues are analyzed for the regions Western Europe, Eastern Europe, North America, South America, Asia-Pacific, the Middle East, and Africa.

Chapter 2 provides market data for the 16 most important countries, that is, country-specific information on demand and revenues. Furthermore, demand is split by application areas.

Chapter 3 analyzes the regional markets for paints and coatings: Data and factors influencing demand in the segments transportation (OEM, refinish), construction, wood processing / furniture, industry, and others.

Chapter 4 provides profiles of the largest manufacturers – clearly arranged according to contact details, turnover, profit, product range, production sites, and profile summary. Extensive profiles of 106 producers are given, including Akzo Nobel, ALTANA, Asian Paints, Kansai Paint, KCC, Nippon Paint, PPG, RPM, Sherwin-Williams, and Sika.

1 Market Data

- 1.1 World
- 1.1.1 Demand
- 1.1.2 Revenues
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- 1.3 Eastern Europe
- 1.4 North America
- 1.5 South America
- 1.6 Asia-Pacific
- 1.7 Middle East
- 1 8 Africa

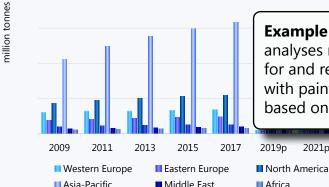
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- 2.5.5 Other Asia-Pacific

3 Applications

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 - 3.1.1 Transportation OEM
- 3.1.2 Transportation Refinish
- 3.1.3 Construction
- 3.1.4 Wood Processing /
- **Furniture**
- 3.1.5 Industry
- 3.1.6 Others

Ceresana Demand for paints and coatings based on polyurethane, split by regions



Example from chapter 1 analyses regarding demand for and revenues generated with paints and coatings

based on PUR

2019p 2021p 2023p

Africa

South America

2025p

3.2 Western Europe

3.3 Eastern Europe

3.4 North America

3.5 South America

3.6 Asia-Pacific

3.7 Middle East

3.8 Africa

4 Company Profiles

4.1 Western Europe Austria (2 Producers)

Denmark (2)

Finland (2)

France (3)

Germany (23)

Italy (4)

Norway (1)

Portugal (1)

Spain (1)

Switzerland (5)

The Netherlands (2)

4.2 Eastern Europe

Russia (2)

Turkey (2)

4.3 North America Canada (1) USA (15)

4.4 South America Brazil (1)

Venezuela (1)

4.5 Asia-Pacific

Australia (1)

China (5)

Hong Kong (1)

India (3)

Japan (15)

Philippines (1)

South Korea (5)

Taiwan (1)

Thailand (1)

4.6 Middle East

Israel (2)

United Arab Emirates (1)

4.7 Africa

Egypt (2)

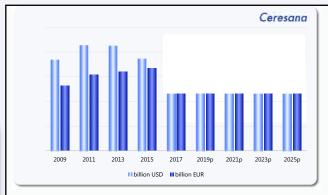
1.2 Western Europe

About X tonnes of paints and coatings were utilized in Western Europe in 2017. Until 2025, we expect an increase in demand by X % p.a. Due to this growth rate, Western Europe's share of global demand is likely to decline from X % in 2016 to roughly X % in 2024. About EUR X billion were generated with the sales of paints and coatings in Western Europe in 2017. We forecast an increase at growth rates of X % p.a. in the next



Graph: Demand for paints and coatings in Western Europe from 2009 to 2025

About X % of Western European demand originated in Germany. The remaining Western European countries (the Netherlands, Sweden, Austria, Portugal, Belgium, Denmark, Switzerland, Finland, Norway, and Ireland) reached an aggregated market share of X %. The most dynamic growth rate of X % p.a. in the upcoming eight years is projected for Germany. Spain will incur the least dynamic development.



Graph: Revenues generated with paints and coatings in Western Europe from 2009 to 2025 in billion USD and billion EUR

in 1,000 tonnes	2009	2011	2013	2015	2017	2019p	2021p	2023p	2025p	2017- 2025
Germany	Х	Х	Х	Х	Х	Х	Х	Х	х	X% p.a.
France	Х	Х	Х	Х	x	х	х	х	Х	X% p.a.
United Kingdom	Х	Х	Х	Х	Х	Х	Х	Х	х	X% p.a.
Italy	Х	х	х	х	х	х	х	х	х	X% p.a.
Spain	Х	Х	Х	Х	х	Х	Х	Х	х	X% p.a.
Other	Х	х	х	х	х	х	х	х	х	X% p.a.
Total	х	x	х	х	х	х	х	х	х	X% p.a.

Table: Demand for paints and coatings in Western Europe from 2009 to 2025 – split by major countries

2.5.3 Japan

In 2017, about X tonnes of coatings were utilized. We forecast a positive growth of X % p.a. for the 2017 to 2025 period. Market volume will amount to approx. X tonnes in 2025.

Revenues generated with PUR paints and coatings totaled about USD X million in 2017. Therefore, Japan's share of total regional revenues fell to about X % in 2017. We forecast a market value of approx. USD X million to be reported in 2025. Compared to 2017, this constitutes a growth rate of X % per year, which is considerably below the regional average.

Ceresana

Chapter 2: Data for 16 countries:

- Total demand
- Revenues
- · Demand split by applications
- Manufacturers of PUR paints & coatings



Graph: Revenues generated with paints and coatings in Japan from 2009 to 2025 in million USD and million EUR

The most important application area in 2017 was the segment transportation – OEM, consuming X tonnes. With the exception of the sector wood processing, which will lower its demand by presumably X % p.a. until 2025, we expect all other application areas to account for positive growth rates.

in 1,000 tonnes	2009	2011	2013	2015	2017	2019p	2021p	2023p	2025p	2017- 2025
Transportation – OEM	Х	Х	Х	Х	х	х	х	х	Х	X% p.a.
Transportation – Refinish	Х	Х	Х	х	х	х	х	х	Х	X% p.a.
Construction	х	х	х	х	х	х	х	х	х	X% p.a.
Wood Processing / Furniture	х	х	х	х	х	х	х	х	Х	X% p.a.
Industry	х	х	х	х	х	х	х	х	х	X% p.a.
Others	х	х	х	х	х	х	х	х	Х	X% p.a.
Total	х	x	x	x	х	х	х	х	х	X% p.a.

Table: Demand for paints and coatings in Japan from 2009 to 2025 – split by applications

In the fiscal year 2016, economic growth in Japan amounted to 1.0 % while a plus of 1.5 % is expected for the current period. The Olympic Games in Tokyo in 2020 will have a positive effect on some sectors and on the economy. In 2016, GDP data collection was adapted to UN directives of 2008. Therefore, the aim of a GDP of approx. USD 5.4 trillion until 2020 is not unlikely anymore. The increase in consumer tax from 8% to 10% that is planned for summer 2017 was postponed to 2019. This will attenuate the insecurity of private consumers and presumably increase demand. The executed resolution on a free trade agreement between Japan and Europe at the beginning of July 2017 is also beneficial. With the aid of cheaper imported products, Japanese consumers could cope with the tax increase more easily. Overall, the agreement is supposed to create an economic upswing for both Japan and Europe. At the moment, 70% of Japanese exports into the EU are dutiable while 70% of the imports from the EU into Japan are already free of duty. The reduction of duties will be made gradually. Depending on the product category, duties could be decreased right now or only within the next 15 years.

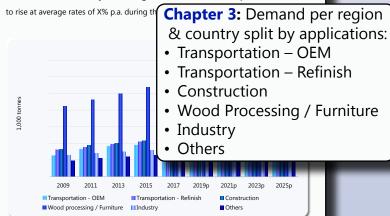
Construction projects in the run-up to the Olympics 2020 have positive effects on the construction economy. The number of started building projects of hotels increased considerably in 2016 due to the rising number of tourists. 40 million tourists are expected in 2020 and even 60 million in 2030, which is why hotel construction will presumably continue to increase in the years to come. Due to demographic reasons, housing meeting the needs of the elderly are built, which is another growth factor in the construction segment. Environmentally friendly technologies play an increasingly important role in Japan. New constructions but also renovations offer a great potential to construction companies.

The infrastructure is to be expanded by a support program with a volume of over 60 billion dollars in the upcoming years. The Olympic Games in 2020 in Tokyo already foreshadow these plans. In the upcoming years, investments are to be made in airports, railway networks, and roads.

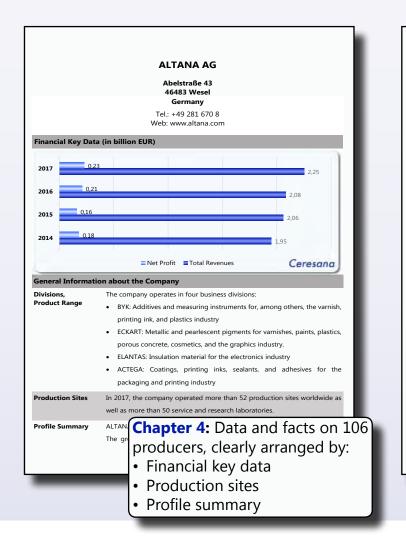
In the segment automobiles, the demand for "Mini Vehicles" in particular declined after taxes for this group of vehicles were raised. The recovery of the Japanese currency had a negative effect on the annual result. Vehicle production decreased compared to the previous year; about 9.20 million vehicles were produced in 2016 (2015: 9.29 million). However, we expect a slight increase in vehicle production in the upcoming eight years. Despite a decrease in state support for vehicles with alternative drive engines, autonomous vehicles are supposed to hold a share of 50-70%, hybrid vehicles of 30-40%, as well as electric and plug in vehicles 20-30% on the domestic traffic by 2030 according to a plan of the government. Already during the past years, about 30% of the newly registered passenger cars were hybrid vehicles. However, electric and hybrid vehicles only had a share of below 10%.

3.1 Applications - World

About X million tonnes of PUR paints and coatings were processed worldwide in 2017. The most important application areas are the segments transportation – OEM, transportation – refinish, construction, wood processing/furniture, and industry. The most important sales market in 2017 was the segment wood processing/furniture, consuming about X million tonnes. This corresponds to about X % of total global consumption. We forecast global demand to increase to approx. X million tonnes until 2025. The sector transportation – OEM is likely to develop at the most dynamic growth rates of X % p.a. between 2017 and 2025; although this development is based on a low baseline level, this sector will be the second largest in 2025. For all other application areas, we forecast relatively moderate growth rates. Overall, we expect total demand



Graph: Global demand for paints and coatings from 2009 to 2025 – split by applications



cosmetics segment as well as the electronics industry.

The company employs about 6,200 people and holds assets of EUR 3.15 million (12/31/2017). R&D expenditure amounted to about EUR 143 million in the financial year 2017. The company owns 65 consolidated subsidiaries and associated companies spread worldwide.

Split by business segments, 46% of revenues of 2017 were generated in BYK, 22% in ELENTAS, 17% in ECKART Effect Pigments, and 15% in ACTEGA Coatings & Sealants. Regarding the several regions, 38% of revenues of 2017 originated in Europe, 32% in Asia, 28% in America, and 2% in other regions. In 2016, ALTANA sold the ACTEGA Colorchemie Gruppe. The same year, ALTANA acquired Addcomp Holland BV, a Dutch developer and producer of innovative plastic additive solutions, to strategically expand the business division BYK Additives & Instruments in the segment plastic additives.

In early 2017, ALTANA strengthened its additive business by acquiring PolyAd Services. The US-American developer and producer of additive solutions for the global plastic market will be integrated into the Business Line Kunststoffadditive of BYK Additives & Instruments. Further, the Belgian chemical group Solvay's insulation resin business has been acquired. ALTANA has bought the new metallography technology from the Israeli Landa Gruppe. In August 2017, ALTANA acquired the technology portfolio of the US-based company NuLabel Technologies, Inc. for the segments Label and Packaging.

Specific Information About PUR Paints & Varnishes

Through the segment ACTEGA Premiata, the company manufactures PUR varnishes. This segment comprises the company ACTEGA Premiata Tintas e Especialidades Químicas Ltda., which has its

Additionally, the segment Acte

ACTEGA Premiata varnishes are Chapter 4: Detailed profiles of acrylic-based PUR varnish for bl the most important producers, such as Akzo Nobel, ALTANA, Asian Paints, Kansai Paint, KCC, Nippon Paint, PPG, RPM, Sherwin-Williams, and Sika.

This study is useful for:

- Manufacturers and traders of: Polyurethane (PUR), paints, and coatings
- Companies operating in the segments: construction, engineering, wood processing, furniture, transportation
- Associations and institutes, investors and consultations
- Executive board, technology and production, strategic planning, corporate development, R&D, market research, marketing, sales and distribution, procurement

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Bio-Economy

Automotive Coatings - World	Biobased Packaging - World
A C C DI C E	D' 1 (* 14/ 11

<u>Automotive Plastics - Europe</u>

<u>Bioplastics - World</u>

<u>Automotive Plastics - World</u>

<u>Polylactic Acid (PLA) - World</u>

Hybrid & Electric Cars - Europe Starch Based Plastics - World

Biocides - World Adhesives - Europe

Carbon Black - World Adhesives - World

<u>Chelating Agents - World</u> <u>Insulation Material - Europe</u>
<u>Fillers - Europe</u> <u>Insulation Material - World</u>

<u>Fillers - World</u> <u>Paints & Coatings - Europe</u>

Flame Retardants - World Paints & Coatings - World

<u>Pigments - World</u> <u>Plastic Extrusion - Europe</u>

<u>Plastic Additives - World</u> <u>Plastic Injection - Europe</u>

<u>Plastic Pipes - Europe</u>

<u>Solvents - World</u>

<u>Plastic Pipes - World</u>

<u>Stabilizers - World</u> <u>Plastic Windows - World</u>

<u>Surfactants - World</u> <u>Printing Inks - Europe</u>

<u>Titanium Dioxide (TiO2) - World</u> <u>Printing Inks - World</u>

Windows & Doors - Europe

Composites (CFRP & GFRP) - World

<u>Expandable Polystyrene (EPS) - World</u>
<u>Bags, Sacks & Pouches - Europe</u>

<u>Bags, Sacks & Pouches - World</u>

Masterbatches - World Corrugated Board & Solid Board - Europe

<u>Plastics - Europe</u>

<u>Plastics - World</u>

<u>Food Packaging - Europe</u>

<u>Polyethylene (HDPE) - World</u> <u>Labels - Europe</u>

<u>Polyethylene (LDPE) - World</u> <u>Plastic Caps & Closures - Europe</u>

Polyethylene (LLDPE) - World Plastic Caps & Closures - World

<u>Polypropylene - World</u> <u>Plastic Containers - Europe</u>

Polystyrene & EPS - World

Polyvinyl Chloride (PVC) - World

Plastic Films - Europe

Plastic Films - World

<u>Silicones - World</u> <u>Plastic Packaging for Cosmetics - Europe</u>

<u>Synthetic Rubber - World</u>
<u>Rigid Metal Packaging - Europe</u>

<u>Thermoplastic Elastomers (TPE) - World</u>
<u>Rigid Plastic Packaging - World</u>



Packagir