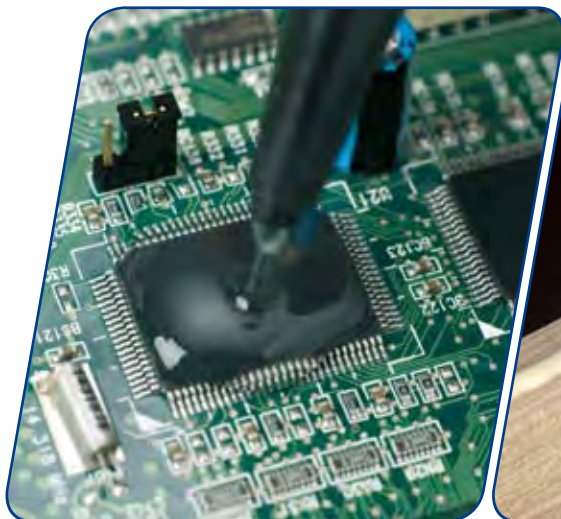
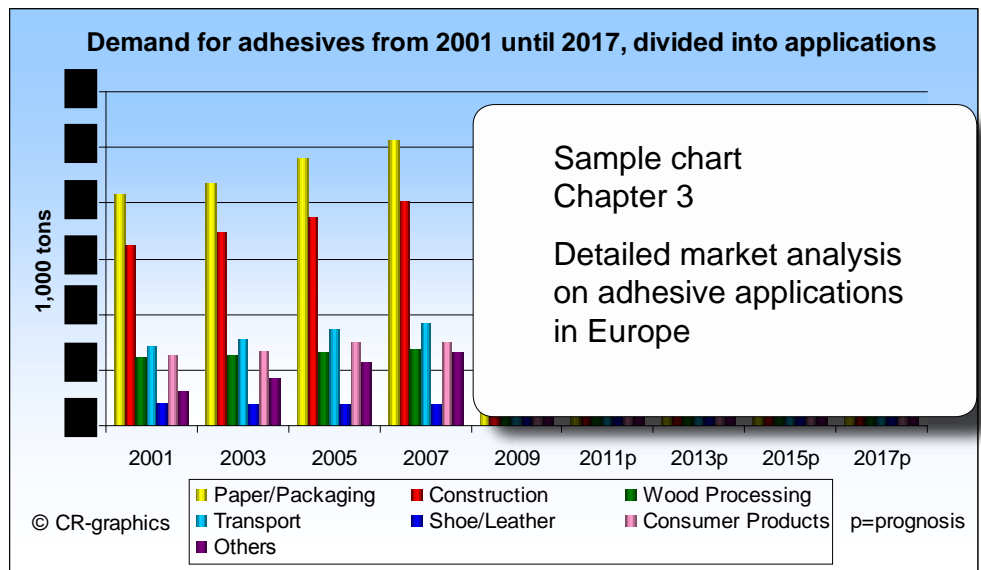


Market Study: Adhesives



**Ceresana
Research**

Market Study: Adhesives



Ceresana Research has scrutinized the European adhesive market from top to bottom. With an 18.5% share of all European demand, Germany constitutes the largest sales market, followed by France, Italy, the UK, Russia, and Turkey. We expect that the adhesives revenue will reach €8.25 billion by 2017. Above average increases in demand of 2.7% to 4.8% were achieved on sales markets in Russia, Poland, and Turkey. Winners in Western Europe include above all Germany, Finland, and Sweden.

The most important fields of application – paper/packaging and the construction industry – have a market share of more than 58%. In the construction industry, there are two significant trends. On the one hand, there are moderate demand stimuli due to new constructions and publicly financed infrastructure projects. Because of EU subsidies, this effect can be felt more clearly in Eastern than in Western Europe. On the other hand, adhesives are increasingly needed to renovate buildings in connection with the continuing need for energy efficiency and CO2 reduction.

We anticipate that the demand for adhesives in medical engineering and the automobile, electrical and electronics industries will see growth rates of 2.7% to 3.8%. Es-

pecially manufacturers of acrylate adhesives, which are needed for the construction of cars and rail vehicles, are profiting from the industry's good economic development. The same applies to epoxy resin adhesives that are used in aircraft construction. Radiation curing adhesives will enjoy significant growth rates in the electrical and electronics industry. Natural adhesives made from starch, cellulose or animal glues will especially see increases in the paper, cardboard and packaging sector. The trend to replace solvent-based by solvent-free adhesives is continuing in Western Europe, and companies in Eastern Europe are also increasingly investing in the development of new adhesive systems. In addition, environmentally friendly adhesives are gaining importance. There are different starting points, from renewable resources to the use of non-polluting additives.

The Study in Brief:

Vol. I / Chapter 1: A concise overview provides the most important facts on the different types of adhesives, manufacturing processes, environment, health, fields of application, and legal situations.

Chapter 2: Analysis of the European adhesive market, including forecasts until 2017. Demand and production, revenues, import, and export are evaluated. In addition, the report offers a comprehensive insight into market dynamics, innovations, and trends.

Chapter 3: 31 European countries are analyzed in detail: valuable data and influential factors on demand development. Furthermore, demand is described and analyzed in detail. Applications covered include: Paper, packaging, construction industry, wood processing, vehicle industry, shoes, leather, and consumer goods. Further applications include products for the electrical and electronics industry, technical textiles, sports goods, toys, and medical applications.

Vol. II / Chapter 4 provides a useful list of producers: 199 profiles of manufacturers of adhesives from 28 countries – clearly arranged according to contact details, figures, types of adhesives and their applications, and production sites.

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1.2 Types of Adhesives

Subsections:

- Natural adhesives
- Polymer dispersion adhesives / emulsion adhesives
- Hotmelts
- Thermally activated adhesives
- Radiation curing adhesives
- Solvent-based adhesives / contact adhesives
- Reactive adhesive systems
- Pressure sensitive adhesives (PSAs)
- Water-soluble polymer adhesives
- Inorganic adhesives

Vol. I / Chapter 1

Concise information on adhesive types, manufacturing processes, technical properties and fields of applications of adhesives, as well as legal situation.

Natural Adhesives

Adhesives made of natural materials, such as starch, casein, animal glue, white, or oils, are known for thousands of years. When it comes to natural adhesives.

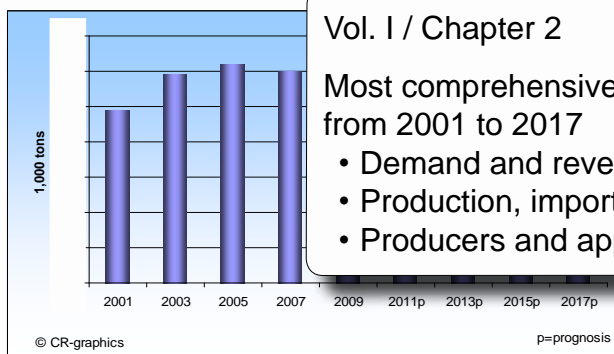
- Glue is an adhesive made of animal and/or vegetable raw materials. Water serves as a solvent.
- Paste is an aqueous suspension, which already forms a highly viscous mass at a low raw material concentration.

Due to environmental and financial reasons, research focuses on renewable raw materials. In the case of natural adhesives, vegetable and animal raw materials can be discerned:

- Vegetable glues include, e.g., pastes made from starch, dextrin (a starch degradation product), cellulose, proteins of soybeans, tannins, and gum arabic, derived from acacia tree sap. Wallpaper paste mainly consists of cellulose.
- Animal glues are made from blood, skin, bones, leather, or fish scraps. Casein glue (made from acid casein) is the most important glue for bottle labeling. It bonds quickly, is water-resistant, but soluble in alkaline washing liquid.

2.32.2 Production, Import and Export – United Kingdom

While production amounted to approx. X tons of adhesives in 2001, this jumped to X tons in 2006. However, production decreased steadily during the following years and reached a volume of X tons in 2009. This translated to a X% share of European output (Graph). We anticipate seeing only minimal increases of X% annually over the next years. Consequently, the UK will most likely manufacture X tons of adhesives during 2017.



Vol. I / Chapter 2

Most comprehensive market data from 2001 to 2017

- Demand and revenue
- Production, import and export
- Producers and applications

Graph: Production of adhesives in the UK from 2001 until 2017

Company	Transport	Construction Industry	Wood Processing Industry	Shoes, Leather and Textiles	Paper Processing and Books	Packaging Industry	Electronics	Medical Applications	Home, Hobby, Office	Adhesive Tapes	Others
	x	x		x			x				
		x					x				
	x	x	x	x	x	x					Industrial assembly

Table: British manufacturers of adhesives and their applications

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3 Market Data Applications

- 3.1 Paper & Packaging Industry
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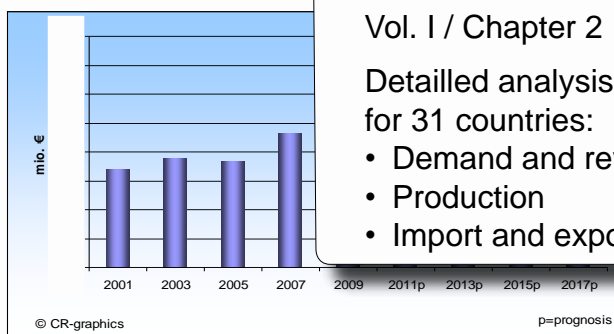
Volume II

4 Company Profiles

- 4.1 Austria (1 Producer)
- 4.2 Belarus (3)
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- 4.7 Finland (4)
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- 4.9 Germany (42)
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- 4.11 Hungary (1)
- 4.12 Ireland (1)
- 4.13 Italy (17)
- 4.14 Norway (1)
- 4.15 Poland (6)
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- 4.17 Romania (2)
- 4.18 Russia (7)
- 4.19 Serbia (3)
- 4.20 Slovakia (1)
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- 4.23 Sweden (2)
- 4.24 Switzerland (15)
- 4.25 The Netherlands (11)
- 4.26 Turkey (12)
- 4.27 Ukraine (2)
- 4.28 United Kingdom (21)

2.31.1 Demand and Revenue – Turkey

The Turkish adhesive market accounted for approx. X% of the European demand for adhesives in 2009. The market volume amounted to about X tons – an increase of more 5% per year since 2001 (Graph). In 2009, the construction industry had the largest share of demand, namely X% (Table).



Graph: Adhesives revenue in Turkey from 2001 until 2017 in millions of €

in 1,000 tons	2001	2003	2005	2007	2009	2011p	2013p	2015p	2017p
Paper/Packaging	X	X	X	X	X	X	X	X	X
Construction	X	X	X	X	X	X	X	X	X
Wood Processing	X	X	X	X	X	X	X	X	X
Transport	X	X	X	X	X	X	X	X	X
Shoe/Leather	X	X	X	X	X	X	X	X	X
Consumer Products	X	X	X	X	X	X	X	X	X
Others	X	X	X	X	X	X	X	X	X
Total	X	X	X	X	X	X	X	X	X

Table: Demand for adhesives in Turkey from 2001 until 2017 – divided by application

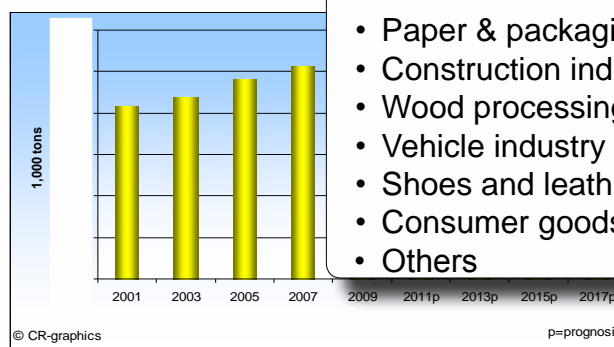
Vol. I / Chapter 2

Detailed analysis and forecasts for 31 countries:

- Demand and revenue
- Production
- Import and export

3.1 Paper and Packaging Industry – Europe

Demand for adhesives in the paper and packaging industry in Europe has grown at an annual rate of X% over the past eight years and is projected to continue to grow at this rate until 2017. The market volume will most likely grow by X% per year until 2017, reaching about X million tons. With a X% share, Germany has the largest demand in 2009, followed by Italy, France, and the UK.



Graph: Demand for adhesives in the paper/packaging industry from 2001 until 2017

Country	Share in 2001	Share in 2009	Share in 2017p
Germany	X	X	X
France	X	X	X
United Kingdom	X	X	X
Italy	X	X	X
Spain	X	X	X
Poland	X	X	X
Russia	X	X	X
Turkey	X	X	X
Others	X	X	X

Table: Demand for adhesives in the paper/packaging industry divided by country, in percent

Vol. I / Chapter 3

Concise market data on applications for Europe and the 8 biggest countries

- Paper & packaging industry
- Construction industry
- Wood processing
- Vehicle industry
- Shoes and leather
- Consumer goods
- Others

DELO Industrie Klebstoffe GmbH & Co. KGaA	
DELO-Allee 1	
86949 Windach	
Germany	
Tel.	49 8193 9900 0
Fax	49 8193 9900 144
Web	www.delo.de
E-Mail	info@delo.de
Divisions, Product Range	The company is a manufacturer in the areas electronics / automotive, mechanical & photovoltaic as well as glass
Production Sites	The company's production sites • Windach, Germany
Profile Summary	DELO Industrie Klebstoffe has 250 employees, headquartered in 1961. Since a major owner-managed. In the fiscal year 2008/09 (2007/08), the turnover of the company amounted to almost €30 (€30.6) million. According to company statements, the turnover totaled about €30 million in the fiscal year 2009/10, with 57% of sales being generated outside of Germany. DELO has agencies in France, Austria, Sweden, Switzerland, Spain, China, Singapore, Korea, Taiwan, and the US. In addition, the company has own sales engineers in the Benelux countries, Italy, and England. Furthermore, DELO has representative offices in China, Shanghai, Singapore, and Taiwan, as well as a subsidiary in Boston, US. In the marketing of its products, the company is cooperating with
Products and Processes	n.a.
Adhesive-Type or Adhesive, Application	
Acrylate adhesives for bonding plastics, glass, and metals. Suitable for optical bonds.	
Photo-initiated epoxy resins in the electrical engineering and automobile supply industries.	
Epoxy adhesives for bonding metals and plastics in mechanical engineering, construction and electrical industries.	
Radiation curing adhesives with the opportunity of light and heat curing. Suitable for the adhesion in electronics processing, glass and plastic industry as well as electrical	
Methacrylate adhesives used as screw locking, thread sealant, and for shaft-hub connections.	ML
Cyanoacrylate adhesives for bonding plastics and industrial use.	CA
Silicone adhesives used to bond boards in the electrical industry.	Gum
PUR adhesives for industrial use in plastics and metal processing.	Pur

Vol. II / Chapter 4

Extensive company profiles for the biggest manufacturers, as for example 3M Europe, Akzo Nobel, Altana, AVEBE, BASF, Bostik, H.B. Fuller Europe, Henkel, ITW (Europe), Mapei, Sika, Tremco illbruck International, Uzin Utz und Wacker Chemie.

Note: The profiles are assigned to the country in which the company or holding is headquartered. Company profiles also include JVs and subsidiaries.

Wilhelm Böllhoff GmbH & Co. KG (Bielefeld, Germany), an international, medium-sized group of companies, producing screws and other metal parts used for joining parts. The quality management of the company is certified according to ISO 9001:2010.	
Adhesive-Types and Adhesives	
Adhesive Types	<input type="checkbox"/> Pressure sensitive adhesives (PSA) <input type="checkbox"/> Inorganic adhesives <input type="checkbox"/> Hotmelts <input type="checkbox"/> Polymer dispersion / Emulsion adhesives <input type="checkbox"/> Natural adhesives <input checked="" type="checkbox"/> Heat activated adhesives <input type="checkbox"/> Adhesives based on water-soluble polymer <input checked="" type="checkbox"/> Reactive adhesives <input type="checkbox"/> Other: _____ <input type="checkbox"/> Solvent based / Co-solvent adhesives <input checked="" type="checkbox"/> Radiation cured adhesives <input type="checkbox"/> Other: _____
Adhesives	<input checked="" type="checkbox"/> Acrylic copolymers: <input checked="" type="checkbox"/> Cyanacrylate <input checked="" type="checkbox"/> Methacrylate <input checked="" type="checkbox"/> Dimethacrylate <input checked="" type="checkbox"/> Radiation curing adhesive <input type="checkbox"/> Formaldehyde condensate <input type="checkbox"/> Polyester resin <input type="checkbox"/> Cellulose ether <input type="checkbox"/> Furan adhesive <input type="checkbox"/> CP <input type="checkbox"/> EP <input type="checkbox"/> PE <input type="checkbox"/> PP <input type="checkbox"/> PIB <input type="checkbox"/> Plasti-sol / PVC <input checked="" type="checkbox"/> PUR <input type="checkbox"/> PA <input type="checkbox"/> Silicate <input type="checkbox"/> PI <input checked="" type="checkbox"/> Silicon <input type="checkbox"/> EVA <input type="checkbox"/> NR, SBR, Latex <input type="checkbox"/> Other: _____
Applications	<input checked="" type="checkbox"/> Transport <input checked="" type="checkbox"/> Construction Industry <input type="checkbox"/> Wood Processing Industry <input type="checkbox"/> Shoes, Leather and Textiles <input checked="" type="checkbox"/> Electronics <input type="checkbox"/> Medical Applications <input type="checkbox"/> Home, Hobby, Office <input type="checkbox"/> Adhesive Tapes

Vol. II / Chapter 4

Clearly arranged data and facts on 199 manufacturers:

- Contact details
- Foundation and staff
- Turnover and earnings
- Product range
- Production sites
- Types of adhesives
- Profile summary
- Adhesive types, their applications and brand names

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This study is especially useful for:

- Producers, traders and clients of adhesives for food and consumer goods packaging, adhesive tapes, hygiene products, paper bags, envelopes, labels, books and magazines, coverings, panels, heat-insulating materials, lamination, upholstery, soles, hand bags, clothes, medical engineering, do-it-yourself products, stationery, the electrical and electronics industry, and automotive interior parts.
- Suppliers of pre-products, such as acrylate, cellulose ether, synthetic resins, ethylene-vinyl acetate, rubber (NR, SBR, latex), PVC, polyamide, polyester, polyethylene, polypropylene, PUR, polyvinyl acetate, silicate and additives.
- Plant and mechanical engineers
- Investors and analysts
- Authorities and organizations
- Associations and institutes



Plasticsisers

69 Products; 145 Producers; 273 Pages, 19 Graphs, 18 Tables; 08/05

Solvents

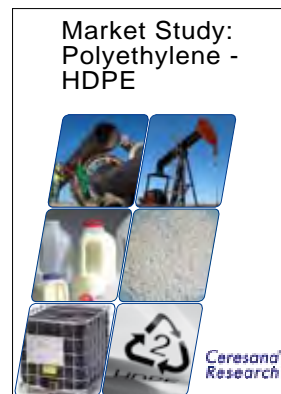
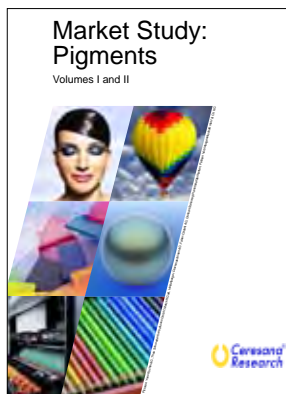
77 Products; 270 Producers; 452 Pages, 80 Graphs, 8 Tables; 01/06

Flame Retardants

44 Products; 241 Producers; 627 Pages, 82 Graphs, 33 Tables; 07/06

Fillers

21 Products; 702 Producers; 2 Vol., 1,074 P., 88 Graphs, 28 Tables; 07/07



Pigments

300 Products; 250 Producers; 2 Vol., 1,154 P., 53 Graphs, 56 Tables; 12/07

Antioxidants

90 Products; 68 Producers; 505 Pages, 53 Graphs, 3 Tables; 04/08

Polypropylene

64 Countries; 101 Producers; 2 Vol., 1,030 P., 313 Graphs, 118 Tables; 06/08

Polyethylene - HDPE

65 Countries, 100 Producers; 2 Vol., 994 P., 285 Graphs, 99 Tables; 09/08

About Ceresana Research

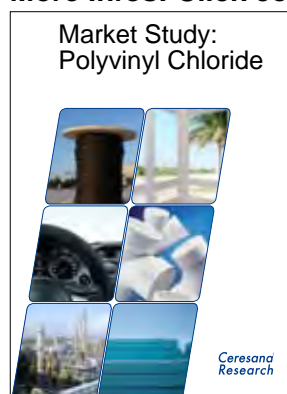
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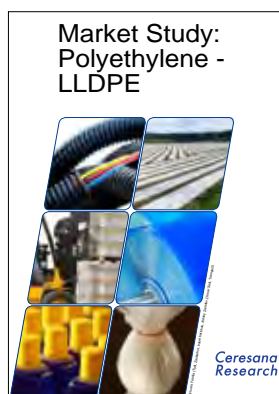
Polyvinyl Chloride

61 Countries, 122 Producers; 2 Vol., 977 P., 364 Graphs, 108 Tables; 11/08



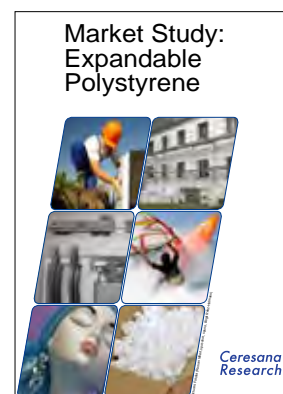
Bioplastics

7 Countries; 12 Products, 77 Producers; 400 P., 80 Graphs, 32 Tables; 06/09



Polyethylene - LLDPE

67 Countries, 80 Producers; 2 Vol., 830 P., 305 Graphs, 100 Tables; 03/10



Expandable Polystyrene

64 Countries, 63 Producers; 2 Vol., 690 P., 287 Graphs, 87 Tables; 03/10



Polyethylene - LDPE

67 Countries, 87 Producers; 2 Vol., 850 P., 300 Graphs, 100 Tables; 04/10



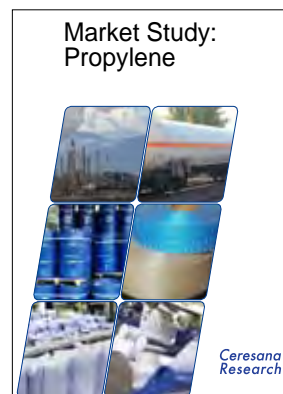
Plastic Caps

31 Countries, 379 Producers; 2 Vol., 1,100 P., 139 Graphs, 72 Tables; 09/10



Ethylene

55 Countries, 117 Producers; 2 Vol., 801 P., 288 Graphs, 191 Tables; 12/10



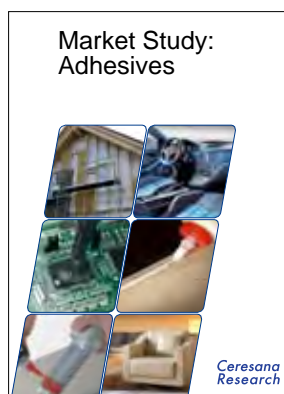
Propylene

51 Countries, 137 Producers; 2 Vol., 760 P., 257 Graphs, 137 Tables; 01/11



Plastic Pipes

30 Countries, 135 Producers; 2 Vol., 590 P., 131 Graphs, 101 Tables; 03/11



Adhesives

31 Countries, 199 Producers; 2 Vol., 870 P., 133 Graphs, 48 Tables; 03/11

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