

Powder and Waterborne Coatings 2000–2010 – Is Past Growth Sustainable?

New Technological Developments and the Impact on Future Markets, A World Overview

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Symmary: Globally, the penetration of POWDER COATINGS in the Industrial Paints sector is 6%. The deepest penetration is in Europe with just over 9%, of which Italy leads, also worldwide, with the highest degree, 15%. Follow Asia-Pacific, North America. In ten years time, global penetration of powder coatings will reach the 10% level. Penetration of powder coatings is much different in the individual European countries. By the year 2010, penetration of WATERBORNE industrial coatings will reach a level of over 30%. The European Waterborne Industrial Coatings Industry was over 500,000 Tonnes in 1999 and will reach the one million Tonnes mark by the year 2010. Overall, the penetration of Waterborne Coatings in the Industrial Paints sector is currently around 20%. When considering individual market segments, penetration varies from 3% to 70%. Selected industrial coatings sectors, having low penetration of 3% in 2000, will reach up to 15% by the year 2010 at the expense of solvent borne paints and other non-environmentally-friendly systems. Main resin systems include: acrylics, epoxies, alkyds/polyesters, polyurethanes, PUDs, 2K-PU, alkyd emulsions and other. The paper will also cover an in-depth analysis of the inter-competition between solvent borne coatings, waterborne, powder coatings, radiation cureables. The increasing use of a combination of environment-friendly technologies such as *powders / WB: powders/radcure* (UV, EBC) and *WB/radcure* will be considered. Chemical intermediates and additive manufacturers have been developing novel raw materials both for waterborne paints and powder coatings.

Keywords: Waterborne coatings, powder coatings, markets, UV-curable powders, UV-curable waterborne coatings, paint technology forecast.

Introduction

Waterborne products, including both Architectural and Industrial paints, currently, account for an estimated 50% of the Paint and Coatings consumption in Western Europe,

roughly estimated at 6.4 Million Tonnes. By the year 2010, Waterborne Paints and Coatings, will represent over 55% of total European paint consumption. Powder coatings and radiation-cureables will account for at least 11%, while in the same year, about one-third of all paints and coatings will still be solvent-based.

In contrast to early projections, paint technologies and markets have developed in different directions and at different rates. Penetration degree and growth of Powder Coatings and Waterbornes are very different in the various Regions. Resin, chemical intermediates and additive manufacturers have been developing novel raw materials for latter paint technologies. Reportedly, pigment manufacturers are lagging behind in the development of products for waterborne and powder coatings applications. Because of the variety and diversity of the paint technologies in the different regions, this provides tools for strategic decision making to identify untapped opportunities and explore new geographical markets.

Environmental considerations continue to be a major force behind technical innovation, exemplified by the search for technically viable coatings with little or no solvent content. Different research goals prevail in the three leading markets of the world.

Environmentalists, crying for more green, have elevated Powder and Waterborne Coatings to the forefront of paint technology development in the Industry. Is this growth sustainable over the next ten years, until the year 2010? Baring current economy conditions, what developments are occurring today and what are the trends driving powder and waterborne coating applications to 2010 in terms of technologies, markets, applications, raw materials and strategies?

POWDER COATINGS

Penetration degree of Powder Coatings

A differentiated development pattern of powder coatings compared to solvent-based, waterbornes and radiation-curable coatings in the different regions of the world exists. Globally, the penetration of Powder Coatings in the Industrial Paints sector is 6%. The deepest penetration of powder coatings worldwide is in Europe with just over 9%, of which Italy leads, also worldwide, with the highest degree, 15%; Asia-Pacific follows with 5-6%, North America with 4-5%. In ten years time, global penetration of powder

coatings will reach the 10% level. This means that there is still plenty of room for powder coatings to penetrate in the world paints arena.

The use of the combination of environment-friendly technologies such as *powders /WB*, *powders/radcure* (UV, EBC), is increasing.

The Trends

Globally, for the period 2000-2010, a yearly growth rate for powder coatings of about 7% is forecast. The hiccup in Asian demand of recent years is being taken over by growth, driven by the relentless demand for improving standards of living.

For newly industrialised countries in particular, powder coatings offer a clean and performing technology without the problems and consequences of solvent based coatings. The technology is easily accessible. One can consider investment in powder coatings is the technology of choice.

Powder Coatings Developments In The Asia-Pacific Region

There is a major trend towards the use of 'superdurable' polyesters for exterior applications. This is due to the high heat and humid climate which prevails in the Region. TGIC-free powders have only recently successfully started in Australia.

Japan is a forerunner in the application of powder coatings for blanks for white goods. In Japan has the largest demand for polyurethanes and is also developing UV curable powders. The newly and more industrialised countries such as China, Taiwan and Korea mainly require standard hybrids.

Japan, one of the most industrialised countries in the world, is still averse to the use of 'clean' technologies. The latter only represent a meagre 16 percent of the total Industrial Paints in Japan. In February 1998 a coatings care plan and promotion committee was established and a prototype guidance for paint producing companies is being developed, but on a voluntary basis.

Powder coatings and resin prices, particularly of polyesters, are significantly lower than those in Europe and the USA.

Like in Japan, in Korea dedicated coating lines exist for the powder coating of blanks for household articles. VOC regulation is expected to be applied within 3 years.

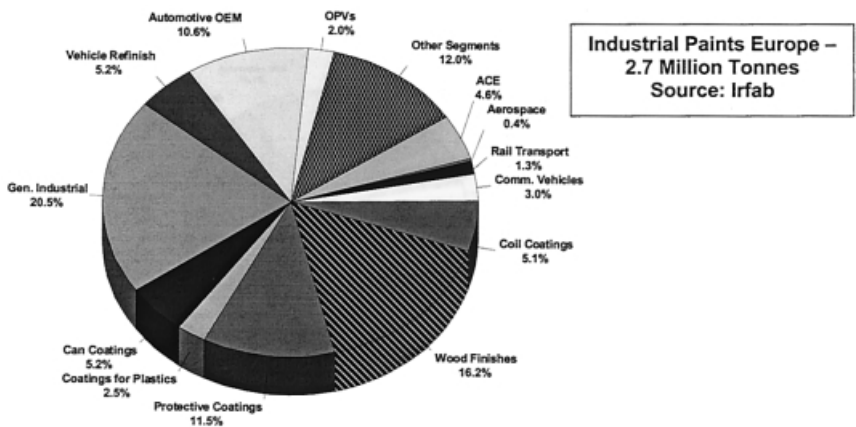
Major international companies have started buying companies or forming joint ventures.

WATERBORNE COATINGS

Trends and Growth rates

Preliminary analysis shows that waterborne paints and coatings as a whole, by the year 2010, will not grow as dramatically as Raw Material Manufacturers and the Paint Industry, overall, have anticipated. By the year 2010, penetration of waterborne industrial coatings will reach a level of 30%. The European Waterborne Industrial Coatings Industry was over 500,000 Tonnes in 1999 and will reach the one million Tonnes mark by the year 2010. The penetration of Waterborne Coatings in the Industrial Paints sector, overall, is currently around 20%. When considering individual market segments, penetration varies from 3% to 70%. Penetration of waterbornes in the General Metal industrial sector will double by the year 2010. Selected industrial coatings sectors, having low penetration of 3% in 2000, will reach up to 15% by the year 2010 at the expense of solvent borne paints and other non environment-friendly systems. This means there is still plenty of room for increased penetration of Waterborne Coatings in the world paints arena. The CAGR of waterborne coatings will outpace that of the overall industrial coatings industry by at least four times. Average growth rates for *waterborne* industrial paints vary, depending on the single end-use segments, from a minimum of 3% to over 15% per year.

Main resin systems present in waterbornes include: acrylics, epoxies, alkyds/polyesters, polyurethanes (PUDs, 2K-PU), alkyd emulsions and other.



Participation of SMEs

It is important to stress that not only multinational companies, but also SMEs are heavily involved in developing global strategies to exploit renewed growth in the waterborne and powder coatings arena, as is clearly shown for Europe in Table 1.

Table 1. SALES BREAKDOWN BY "PAINT TECHNOLOGY – SMEs AND LARGE COMPANIES 2000 – Europe

PAINT TECHNOLOGY	SMEs	% OF TOTAL
Conventional SB	58 %	67 %
High Solids SB	21	9,5
Waterborne	9	15
Powders	9	6.5
Radcure	3	2
TOTAL	100%	100%

Source: Irfab Chemical Consultants

