



Sid Harris highlights, this month, how an American company is using UV curable powder coatings to achieve growth potential and also the pressures of health and safety compliance

Emission free coatings

Although there has been no positive response to the benefits of UV-curable powder coatings in Europe and other industrialised regions globally, despite the genuine advantages of higher profits and significant energy savings of this coatings technology, which could meet the real needs of industrial coatings applicators as they struggle to survive in this era of fierce price cutting competition, this can only result in the demise of many small to medium sized trade coaters and OEM manufacturers. In the high energy wasting climate of the USA there is, however, a prime example of how a small company can utilise this technology to foster both steady and sustained growth and profitability in the face of severe competition from alternative industrial coatings, including thermally cured powder coatings.

This company, Keyland Polymer Ltd, based in Cleveland, Ohio has announced an Exclusive Sales Representation Agreement with RND Ltd, a sister company of Tekiz Makina Sanayi to promote UV-cured powder coating chemistry and application technology in Turkey. Keyland Polymer is a subsidiary of DVUV Holdings LLC, a vertically integrated company that supplies UV-curable powder coatings, application systems and finished product solutions for heat sensitive materials; MDF, metals, plastics and composites. DVUV Holdings' three operating companies DVUV, DVUV Systems and Keyland Polymer, offer a complete UV-cured powder coating and application solution for a multitude of finishing needs and products. Turkey has become an attractive market not only because of its size but

because of its development into a strong and stable emerging market.

The Turkish government has enacted numerous policies for promoting R&D and industrial investment through grants and loan incentive packages. These incentives make Turkey one of the most attractive and favourable destinations for foreign investments and joint ventures. RND's UV systems are successfully deployed in many different industries including printing and packaging, marble, wood finishing, printed electronics and field applied curing applications.

INK MARKET

RND's UV product lines include desktop conveyor belt UV systems for industrial use, UV roll coating lines, UV curing systems for flexo, narrow web and web applications, as well as UV curing systems for large format inkjet printers.

There is increasing evidence that industrial coatings based upon both solvent and waterborne liquid coatings are likely to be targeted by air pollution legislation and the Turkish agreement seems to reflect the growing concerns in some industrialised countries that all industrial coatings should be intrinsically safe.

Keyland's success in establishing UV-curable powder coatings that completely eliminate emissions and, at the same time, greatly reduce both energy and raw material costs, offers proven facts that no responsible government should ignore.

Almost monthly, buyers are informed of rising costs in raw materials and these will continue to increase along with energy costs. When will the manufacturers reach breaking

point? They must update their existing industrial coatings if they wish to survive in this market. Although, it is more likely that even major suppliers of liquid industrial coatings will rationalise by opting out of this market segment completely!

NANO-PARTICLE INFLUENCE

Interest in the use of nano-sized materials in powder coatings is growing and a recent research project into the packing of dry powder coatings in fluidised bed applications has examined the value of these ultra fine particles in counteracting the effects of gravity and van der Waal forces, upon powder bed porosity. It is also known that particle size distribution and the shape of coarse particles is a major influence on porosity, together with surface roughness.

Since it is not possible to alter particle size and shape, this study concentrated on reducing the inter-particle forces by surface modification. The project details are lengthy and only the value-added use of nano-sized particles is stressed. It does, however, serve as a reminder of the important role that nano-technology can contribute, for it can significantly improve the mechanical and overall performance qualities of the cured coating.

There is, of course, the important matter concerning the potential hazard of nano-particles and its long term effect upon both powder production and application employees to be considered. These are matters that are best left to the producers of nano-materials and the health and safety investigators at this stage of development.

The pressures of stringent health and safety compliance are emphasised

in the report that DT Powder Coating, now trading as XL Powder Coating, has been fined £36,000 after failing to report an injury incident within 15 days specified by UK law. The incident happened on September 26, 2012, involving an employee of the company suffering serious hand injuries after the company's lifting equipment failed. The company was also ordered to pay £10,509 after being found guilty of breaching the three UK regulations about work safety.

Industry reports are dominated by news of investments by major coatings producers to expand their influence in emerging markets. Jotun Paints has opened a protective coating and powder coating factory in the Leningrad region of Russia, where it plans to produce up to 12M lits/yr of paint and 3600t/yr of powder coating. Production is scheduled to begin in the third quarter of this year with a two shift operation employing 150 people. It is to be hoped that the current stand-off between European countries and Russia relating to the future of the Ukraine does not jeopardise this new venture for the Russian market for powder coatings has considerable growth potential.

GREEN ASIA

Market reports predict a strong move to green technology in Asia but it is unlikely to have any positive effect in China where pollution is increasing dramatically on a daily basis. The prospect of greater use of waterborne industrial coatings will only add to their existing dilemma. The greater, unreported, growth in Chinese industrial finishing is due to the ever expanding powder coatings market. ■

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