

Resins



Source: Evonik Industries

Resins technology adapts to changing market conditions

Michael Herson, London

To examine market trends, current developments in resins technologies and the consolidation that has been taking place in the industry, "The Strategy Works" (TWS), a strategic marketing consultancy, has interviewed two of the world's leading manufacturers of ketone and aldehyde resins – Hexion and Evonik Degussa. The market conditions for both resin groups are clearly changing.

Market structure

Jack Baarends – Global Marketing Director (Publication Inks) for Hexion – has recently had cause to closely study the structure of the market, in connection with submissions made to the EU, during their acquisition of the Ink and Adhesive Resins division of Akzo Nobel in 2006. Hexion – a USD 6 billion private equity owned US company, that itself has been created by acquisition, is a combination of four companies; Resolution; Speciality Materials/ Performance Polymers; Borden Chemical and Bakelite. Hexion admits that it would be unlikely that Hexion would be allowed to make any additional acquisitions (in offset), due to EU competition law.

Evonik Industries is also a newly formed industrial group which comprises the businesses of chemicals, energy and real estate, also with private equity investment. Group turnover is EUR 14.8 billion and Evonik claim to be clear leader in volume of sales in resins used as co-binders. Hexion in turn claim the number 2 position with 15 % of the global market.

Indian producers

Another major global player in resins is Indian based Micro Inks but, apart from small quantities of ketone resins for export, Micro Inks mainly supply resins for ink manufacture to Huber – their parent company in Germany – and do not compete in the open market; in effect backwards integration. Indeed ink is the major application for resins and Baarends reports that the offset market for inks represents 85 % of Hexion's global resins sales. Strong competition from Asia has emerged recently, particularly on ketone resins, which has necessitated a greater focus on added value products for the European manufacturers. Another key driver is new EU legislation such as REACH and Hexion, who sell ketone resins for food packaging application, has growing concerns about formaldehyde as a constituent for these resins, which



More info on resins: www.european-coatings.com/raw_materials/>>binders

Baarends feels "has the potential to be banned". For this reason, Evonik have responded by launching formaldehyde free resins, which are available globally.

Hexion have observed strong price competition from the Far East as India is a major exporter and producer. Export statistics show that in the year to August 2008, Micro Inks and Suparna between them exported over 1,100 tonnes of ketone resins, more than half of India's total resins exports. Micro Inks have six plants in India and one in the USA.

Main Technologies used in Europe

Hexion calculate the chemistry breakdown for solvent-based liquid inks for packaging to be as follows:

Nitrocellulose	35 %
Polyurethane	22 %
Polyamides	20 %
Polyketones	3 %
Others.....	20 %

According to Dr. *Andreas Wenning*, Technical Director for Specialty Resins, most Evonik ketone resins are used as co-binders, often with polyurethane, polyamides or nitrocellulose resins, as a quality improver. "Evonik focus on modified ketone resins which are used not only in solventborne but also in more environmentally friendly systems like waterborne, UV/EB or 100 % liquid technologies. Evonik consider these criteria to be core market drivers, in addition to cost and legislation", states Dr. Wenning. Baarends, Hexion, considers the market for ketone resins to be a mature market in Europe and USA, although still growing in Asia.

Environmental impact/EU legislation

Hexion are also developing other technologies and regard sulfo-polyesters as more environmentally friendly for water-based, but for solvent-based, polyamides are preferred. However Baarends sees a paradox in respect of water-borne resins "Water-borne is not really environmentally friendly, because it is mainly based on acrylics, which are not biodegradable, so it's very difficult. The second point is that it contains a lot of additives like

anti-foam agents, wetting agents, surfactants. "Sulfo-polyesters do not contain any additives and are more environmentally friendly, as well better biodegradable."

Hexion have anticipated the new EU legislation and see the market is starting to replace ketone with polyurethane and polyamides, driven by customer demand. Urea aldehyde resins are regarded as a sustainable technology, even though they are under some environmental pressure in Europe and North America. REACH is now a big issue for polyketones in terms of usage of raw materials and Hexion feels that this may rationalise the market, particularly in inks.

The environmental impact of solvent-based products can be mitigated if the customer buys a new incinerator or special abatement equipment, thus extending the life of these products.

But the widely held view is that cost and legislation are the two factors that are really driving customers to change - i.e. eco-efficiency.

Conclusion

Ketone and aldehyde resins are considered to be long established technologies. However, both resin groups still have a strong market position and competitors differentiate and deal with legislative and cost pressures by applying different strategies, technologies, innovation, and manufacturing platforms. ◀

The Strategy Works

This article has been prepared by Michael Herson of London based The Strategy Works - a strategic marketing consultancy specialising in original business to business research within the European chemicals sector.

Michael Herson
T +44 20 8868 0212
mherson@thestrategyworks.com.
www.thestrategyworks.com.



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