Combined Strengths for Customized Solutions

Innovative two-pack VOC-free polyurethane solutions based on low viscosity SUPRASEC® MDI-based isocyanates and castor oil-based 100% ALBODUR® polyols

... cooperating for future demands!
Bespoke solutions meeting individual customer needs

In 2007, Huntsman Polyurethanes teamed up with renewable resource-based polyol producer Alberdingk Boley to co-develop polyurethane solutions for the coatings market. At the time, the shared vision was to collaboratively develop new concepts for two-component polyurethane coatings, free from volatile organic compounds (VOCs).

Having achieved their goal in the coatings sector, the two companies have now extended the scope of their work to include applications in adhesives and elastomers markets.

Today, concepts based on Huntsman Polyurethanes’ advanced SUPRASEC® MDI-technology, and Alberdingk Boley’s ALBODUR® polyols, offer customers in Europe, America and the Middle East the chance to create high performance adhesive, coating and elastomer solutions that can meet strict environmental regulations regarding volatile organic compounds (VOCs).

In addition to meeting key environmental regulations, products developed by Huntsman Polyurethanes and Alberdingk Boley can have key advantages over existing products, including ease of use.

ALBODUR® is a range of VOC-free, 100% polyols based on renewable resources. The hydrophobic backbone and low viscosity of ALBODUR® can offer customers significant processing benefits over established products when combined with Huntsman Polyurethanes’ isocyanates technology.

The partnership between Huntsman Polyurethanes and Alberdingk Boley provides customers with highly versatile, bespoke solutions that can be engineered for a diverse number of applications. Testing by the TÜV SÜD Industrie Service GmbH, an independent German Technical Inspection Association, has shown excellent results.

A partnership for customized solutions that can exceed your future requirements!

The partnership between Huntsman Polyurethanes and Alberdingk Boley is a huge step forward and is bringing about a new level of product innovation.

The result of marrying the two companies’ chemistries together is adhesive, coating and elastomer (ACE) solutions that can be engineered to meet individual customer needs.
Benefits

Hydrophobic, two-component, polyurethane systems based on SUPRASEC® MDI and ALBODUR® polyols have the following advantages:

- cure at temperatures between 5°C and 30°C
- cure profile can be adjusted to individual needs
- 100% solids and thus VOC-free PU systems

Selection table

<table>
<thead>
<tr>
<th>SUPRASEC® Isocyanates</th>
<th>ALBODUR® Polyols</th>
<th>Flooring (Soft/Flexible, Industrial, Sport Floors)</th>
<th>Spray coatings (1:1)</th>
<th>Elastomers</th>
<th>Adhesives</th>
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The stoichiometric relationship of NCO/OH=1:1 is established when one equivalent of SUPRASEC® is combined with one equivalent of a hydroxyl-bearing product, for example:

- SUPRASEC® 2496 = NCO equivalent weight approx. 134
- ALBODUR® 912 VP = OH equivalent weight approx. 270

The stoichiometric (100%) crosslinking of 270g ALBODUR® 912 VP requires 134g SUPRASEC® 2496. The equivalent weight is a guide value. The quantity of SUPRASEC® required to provide optimum results in a given application is best determined by trials.

These differences are expressed by the NCO/OH ratio of the co-reactants used. The ratio for any SUPRASEC®/ALBODUR® combination can be calculated as shown below:

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\text{NCO/OH ratio} = \frac{\text{pbw SUPRASEC® x 17 x %NCO}}{\text{pbw ALBODUR® x 42 x %OH}}
\]

\[
\text{NCO/OH ratio} = \frac{\text{pbw SUPRASEC® x equiv.weight ALBODUR®}}{\text{pbw ALBODUR® x equiv.weight SUPRASEC®}}
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Alberdingk Boley GmbH
is a leading German producer of water-based binders for coatings and finishes of all substrates. Originally established in 1828, Alberdingk Boley is the leading European supplier of castor oil and linseed oil as well as its derivates. Thanks to their broad range of applications, water-based polyurethane and acrylate dispersions today form the basis of the company’s product portfolio. Launched in 2005, the new generation of ALBODUR® 100% polyols, based on renewable resources, successfully combines the company’s vast background in oleochemicals with its state-of-the-art technologies for polymerization. Based in Krefeld (Germany) and with facilities in Kerpen (Germany), Greensboro (USA) and Shenzhen (China), the independent, privately-owned company operates worldwide. In 2011, 300 employees generated a turnover of approx. € 190 M.

Huntsman Polyurethanes
is part of Huntsman, a global manufacturer and marketer of differentiated chemicals. Huntsman’s operating companies manufacture products for a variety of global industries, including chemicals, plastics, automotive, aviation, textiles, footwear, paints and coatings, construction, technology, agriculture, health care, detergent, personal care, furniture, appliances and packaging.

Originally known for pioneering innovations in packaging and, later, for rapid and integrated growth in petrochemicals, Huntsman has approximately 12,000 employees and operates from multiple locations worldwide. The Company had 2011 revenues of over $11 billion.

For more information about Huntsman, please visit the company’s website at: www.huntsman.com

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