

Flooring solutions for individual customer needs



Enriching lives through innovation

Technical Details

Huntsman PU, global manufacturer of MDI, and Alberdingk Boley, one of Europe's leading producers of water-based dispersions and 100% polyols, have teamed up to develop new concepts for two-pack VOC-free coatings for the industrial flooring market.

This partnership will provide customers with highly versatile flooring

solutions that can be engineered for a diverse number of applications.



Industrial flooring coatings need to provide long-term protection coupled with aesthetic, structural and safety functions. Depending on the application, they need to be tough and impact resistant, hard or elastic, anti-static or sound absorbing, smooth or non-slip, matt or glossy. Thanks to the partnership between Huntsman, supplying high quality SUPRASEC® MDI-products,

and Alberdingk Boley, offering functionalised, castor oil-modified hydrophobic ALBODUR® polyols, the wide property range described above is now within reach.

SUPRASEC®

The versatility of HUNTSMAN'S MDI technology allows the design of specific properties to meet the needs of many different industries. In order to adjust the application viscosity and reactivity of the formulated coating, blends of SUPRASEC® pre-polymers can be made.

| | SUPRASEC® 2496 | SUPRASEC® 2651 | SUPRASEC® 2647 |
|-------------------------|----------------|----------------|----------------|
| NCOv (%) | 31,3 | 31,8 | 32,4 |
| Viscosity (mPa.s @ 20C) | 100 | 30 | 25 |
| Specific gravity (g/ml) | 1,2 | 1,2 | 1,2 |
| Av. functionality | 2,5 | 2,3 | 2,2 |

Fig 1: SUPRASEC® product range

One of the most important features for the industrial flooring applicator is to know the pot life or self levelling capabilities. Once the products are mixed together, the reaction starts and the viscosity increases until a solid material is obtained. Pot life measurement gives a clear idea for how long the mixed product can be manipulated

without any visible effect on the coating. Here, the choice of SUPRASEC® MDI pre-polymer will greatly influence pot life. SUPRASEC® 2647 will give the longest pot life whereas SUPRASEC® 2496 is easier to apply and therefore more suited for coating larger areas.

ALBODUR®

The diversity of ALBERDINGK BOLEY'S ALBODUR®-polymerisation technology allows the creation of special features to fulfil the requirement of several industries (flooring, adhesives etc.). For the purpose of achieving different coating properties it is possible to compound the ALBODUR® types in every mixing ratio. Thus tailor-made products for every demand can be made.

| | ALBODUR® 901 | ALBODUR® 912 | ALBODUR® 941 |
|-------------------------|--------------|--------------|--------------|
| OH (%) | 5,62 | 6,29 | 9,64 |
| Viscosity (mPa.s @ 20C) | 800 - 1100 | 800 - 1000 | 400 - 700 |
| Acid No (mg KOH/g) | < 2 | < 2 | < 2 |
| Specific gravity (g/ml) | 0,98 | 0,98 | 0,98 |
| Av. functionality | 2,1 | 2,3 | 3,0 |

Fig 2: ALBODUR® product range

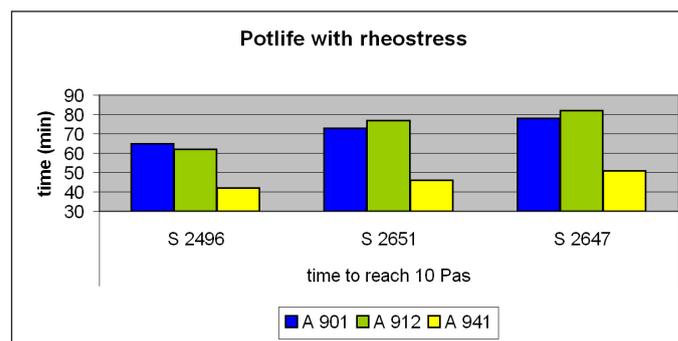


Fig 3: Pot life measured with RheoStress at 25°C



Another important feature is the hardness of the final coating. As fig 4 shows, the hardness is mainly influenced by the choice of the ALBODUR® polyol.

ALBODUR® 901 VP will give a soft and more resilient coating, whereas ALBODUR® 941 VP results in a hard wearing and durable coating. Two other important features of the

PU flooring systems are the crack-bridging capabilities and the high tear strength. SUPRASEC® 2651 resin offers the best possibilities where high elongation is

required. Tear-resistant coatings can also be achieved by using ALBODUR® 941 VP in combination with SUPRASEC® 2496.

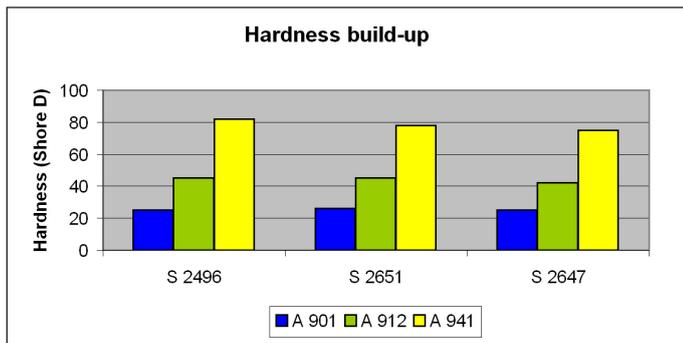


Fig 4: Initial hardness

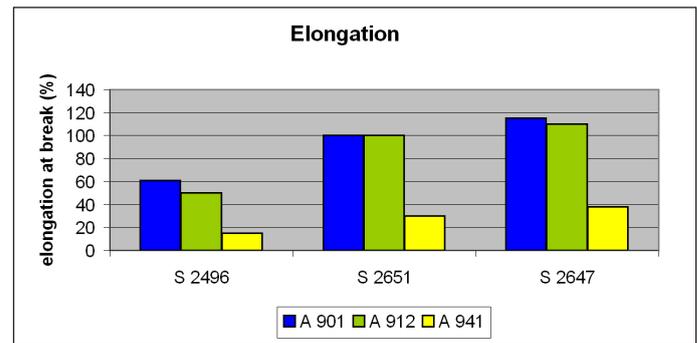


Fig 5: Elongation at break

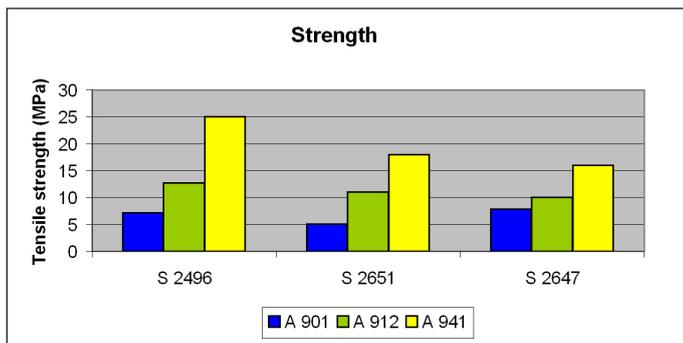


Fig 6: Tensile strength

ALBERDINGK BOLEY

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 derivatives. Today, aqueous polyurethane and acrylate dispersions form due to their broad range of applications the core of the company's product choice. Launched in 2005, the new generation of ALBODUR® 100% polyols based on renewable resources successfully connected 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. 300 employees generated a turnover of approximately 145 M. EUR in 2010.

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HUNTSMAN

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Huntsman Polyurethanes is a business division of Huntsman Corporation. Huntsman is a global manufacturer and marketer of differentiated and commodity chemicals. Its 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, rapid and integrated growth in petrochemicals.

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