Adwel® 1650

Aqueous Polyurethane Dispersion

Technical Data Sheet

Name: Adwel® 1650
Revision Date: 2017-12-20

Product Description

Adwel® 1650 is an aliphatic anionic polyurethane dispersion that can be used with water dispersible polyisocyanate hardener (such as Aquolin® 161) as a two-component waterborne laminating adhesive for flexible substrates including polyolefin, polyester, nylon, et al. Biocide: CMIT/MIT 0.049‰ and MIT 0.100 ‰.

Properties

1. High bonding strength
2. Good construction properties
3. Applicable in a variety of substrates

Characteristic data*

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Unit</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Milky white liquid</td>
<td>%</td>
<td>Visual</td>
</tr>
<tr>
<td>Weight Solids</td>
<td>48±1</td>
<td>%</td>
<td>WHPU/T011-571-2017 (5cm,150°C,20min)</td>
</tr>
<tr>
<td>pH</td>
<td>7.5-9.5</td>
<td>%</td>
<td>GB 6920-1986</td>
</tr>
<tr>
<td>Viscosity</td>
<td>50-1000</td>
<td>mPa·s</td>
<td>Brookfield,LV,63#,100rpm,25°C</td>
</tr>
<tr>
<td>OH content</td>
<td>1.5</td>
<td>%</td>
<td>Theoretical value</td>
</tr>
<tr>
<td>Density</td>
<td>1.04</td>
<td>g/cm³</td>
<td>GB/T4472-2011</td>
</tr>
</tbody>
</table>

*These properties are typical but do not constitute specifications.

Handling and Precautions

1. If Adwel® 1650 needs to be diluted, deionized water must be used; if not, flocculation or demulsification may occur;
2. For ease of operation, Aquolin® 161 can be diluted with proper amount of acetic ether;
3. The prepared two-component adhesive should be used up within 4 hours, and should not be poured back to the resin if not used completely; otherwise, the adhesive will be cured after long time storage;
4. The laminated products using Adwel® 1650/Aquolin® 161 need to be cured to achieve good
bonding strength, and the curing condition is recommended at 50°C for 24 hours;
5. Due to the different lamination process and materials, pretests always should be carried out.

Storage
The product should be stored in dry conditions above 5°C and below 35°C with the integrity of the packaging, and prevent direct sunlight. The validity of this product is for 6 months, performance assessment is recommended before use after shelf life. The product should be protected from freezing during storage. It is suggested to filter before application and use up once the package is open.

Disclaimer: Wanhua Chemical Group Co., LTD. recommends that customers should check with Materials Safety Data Sheet (MSDS) for details about safety instructions. We also suggest that you contact the suppliers of other materials used in our recommended formulations and consult appropriate health and safety regulations prior to use. The information contained herein is believed to be reliable. However, nothing in this technical sheet should be considered as a representation of warranty, express or implicit, regarding the product characteristics, application, quality, safety, merchantability or fitness for a particular purpose. Nothing contained herein is to be considered as permission, recommendation, nor as an inducement to practice any patented invention without permission of the patent owner.