### ADHESIVE SOLUTIONS FOR CIGARETTE INDUSTRY

Our TUBIBOND TE product range includes special adhesives for all requirements and applications in cigarette production.

1. Cigarette tobacco rod seaming
2. Cigarette filter rod seaming
3. Filter Tipping
4. Other adhesives (packaging, labeling etc.)

#### Requirements & Advantages of TUBIBOND TE product range:

- Excellent machine versatility
  TUBIBOND TE product range is suitable for a wide range of cigarette machines with average to extremely high speeds
- Special rheology
  For cigarette packaging sometimes a special rheology of the adhesive is required
- Clean running at production step
- Low VOC content (no smell) as required by the manufacturers
- Lower energy consumption
- Excellent aging resistance

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>CHEMICAL CHARACTER</th>
<th>ACTIVE CONTENT</th>
<th>VISCOSITY</th>
<th>MINIMUM FILM FORMING TEMPERATURE MFFT (°C)</th>
<th>GLASS TRANSITION TEMPERATURE Tg (°C)</th>
<th>pH (20°C)</th>
<th>FILM</th>
<th>APPLICATION FIELDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TUBIBOND TE 102</td>
<td>Ethylene vinyl acetate copolymer</td>
<td>46</td>
<td>2000 - 5000</td>
<td>&lt; 0</td>
<td>-2</td>
<td>4 - 6</td>
<td>Clear</td>
<td>Cigarette production up to 9000 rpm speed machines</td>
</tr>
<tr>
<td>TUBIBOND TE 103</td>
<td>Ethylene vinyl acetate copolymer blend</td>
<td>47</td>
<td>4000 - 6000</td>
<td>&lt; 0</td>
<td>1 - 35</td>
<td>4 - 6</td>
<td>Clear</td>
<td>Cigarette production with 2000 - 5000 rpm speed machines</td>
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<tr>
<td>TUBIBOND TE 105</td>
<td>Ethylene vinyl acetate copolymer</td>
<td>50</td>
<td>500 - 1000</td>
<td>&lt; 0</td>
<td>4</td>
<td>4 - 6</td>
<td>Clear</td>
<td>Cigarette production, side seaming</td>
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<tr>
<td>TUBIBOND TE 110</td>
<td>Ethylene vinyl acetate copolymer</td>
<td>50</td>
<td>1500 - 5500</td>
<td>&lt; 0</td>
<td>-2</td>
<td>4 - 6</td>
<td>Clear</td>
<td>Cigarette production, filter tipping</td>
</tr>
<tr>
<td>TUBIBOND TE 154</td>
<td>Vinyl acetate homopolymer</td>
<td>49</td>
<td>1500 - 3000</td>
<td>&lt; 0</td>
<td>18</td>
<td>4 - 5</td>
<td>Clear</td>
<td>Cigarette box production and package labelling</td>
</tr>
</tbody>
</table>
TESTS APPLIED TO THE CIGARETTE ADHESIVES

- **Speed of Water Release on Adsorbent Substrates**
  - Manual Method:
    Determination of the time until water has penetrated a porous paper

- **Open Time on Cardboard**
  - Manual Method:
    Determination of the open time on cardboard by checking the bonding ability using pieces of black cardboard of low firmness

- **Setting Speed: peel stress**
  - Measurement of peel force as function of closed time
  - Manual Method:
    Direct comparison of two adhesives

- **Setting Speed: peel and shear stress**
  - Measurement of delamination work depending on open time and closed time of the bond