Asia Pacific portfolio

Tackifiers and polymers for better bonding

Energy lives here®
Hot-melt technology – a binding force

As a leading supplier of tackifiers and polymers to adhesive formulators, ExxonMobil Chemical provides you with:

- Reliable supply of consistent high-quality products from readily available feedstocks
- Worldwide manufacturing facilities
- Opportunities for low odor and minimal color adhesives
- Global technical support resources from fundamental polymer research to application development and testing
- Regional sales support and customer service teams

### Escorez tackifiers - typical values

<table>
<thead>
<tr>
<th></th>
<th>Softening point</th>
<th>Initial color 50% in toluene</th>
<th>Tg</th>
<th>GPC molecular weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>°C</td>
<td>YI</td>
<td>°C</td>
<td>g/mol</td>
</tr>
<tr>
<td>Test Method</td>
<td>ETM 22-24</td>
<td>ETM 22-13</td>
<td>ETM 300-90</td>
<td>ETM 300-83</td>
</tr>
<tr>
<td><strong>Escorez 1000 Series-aliphatic resins</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1102</td>
<td>98.7</td>
<td>27</td>
<td>46</td>
<td>1200</td>
</tr>
<tr>
<td>1204LS (1)</td>
<td>93.8</td>
<td>32</td>
<td>47</td>
<td>1000</td>
</tr>
<tr>
<td>1304 (1)</td>
<td>99.7</td>
<td>29</td>
<td>51</td>
<td>1000</td>
</tr>
<tr>
<td>1310</td>
<td>92.7</td>
<td>39</td>
<td>43</td>
<td>1000</td>
</tr>
<tr>
<td>1401 (1)</td>
<td>118.4</td>
<td>31</td>
<td>69</td>
<td>700</td>
</tr>
<tr>
<td>ECR288S (1)</td>
<td>99.5</td>
<td>32</td>
<td>52</td>
<td>1200</td>
</tr>
<tr>
<td><strong>Escorez 2000 Series-aromatic modified aliphatic resins</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2203LC (1)</td>
<td>91.6</td>
<td>23</td>
<td>44</td>
<td>900</td>
</tr>
<tr>
<td>ECR807 (1)</td>
<td>89.0</td>
<td>32</td>
<td>45</td>
<td>1000</td>
</tr>
<tr>
<td><strong>Escorez 5300 Series-water white hydrogenated cycloaliphatic resins</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5300</td>
<td>105.0</td>
<td>≤ 1</td>
<td>51</td>
<td>410</td>
</tr>
<tr>
<td>5320</td>
<td>124.0</td>
<td>≤ 1</td>
<td>69</td>
<td>400</td>
</tr>
<tr>
<td>5340</td>
<td>139.5</td>
<td>≤ 1</td>
<td>86</td>
<td>400</td>
</tr>
<tr>
<td>5380</td>
<td>86.2</td>
<td>≤ 1</td>
<td>36</td>
<td>350</td>
</tr>
<tr>
<td><strong>Escorez 5400 Series-light color hydrogenated cycloaliphatic resins</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5400</td>
<td>103.4</td>
<td>≤ 2</td>
<td>49</td>
<td>400</td>
</tr>
<tr>
<td>5415</td>
<td>118.3</td>
<td>≤ 2</td>
<td>63</td>
<td>430</td>
</tr>
<tr>
<td><strong>Escorez 5600 Series-light color hydrogenated aromatic modified cycloaliphatic resins</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5600</td>
<td>102.5</td>
<td>≤ 2</td>
<td>52</td>
<td>500</td>
</tr>
<tr>
<td>5615</td>
<td>117.8</td>
<td>≤ 2</td>
<td>68</td>
<td>570</td>
</tr>
<tr>
<td>5637</td>
<td>129.7</td>
<td>≤ 2</td>
<td>77</td>
<td>570</td>
</tr>
<tr>
<td>5690</td>
<td>90.5</td>
<td>≤ 2</td>
<td>39</td>
<td>450</td>
</tr>
</tbody>
</table>

(1) Initial color test method: ETM-E-13, GPC Molecular weight test method: ETM-E-83, ETM: ExxonMobil test method

Typical values are not specifications, but are provided to aid formulators in the selection of products for evaluations.
### Polyolefin copolymers - typical values

<table>
<thead>
<tr>
<th>Comonomer content</th>
<th>Melt index</th>
<th>Tensile strength at break</th>
<th>Elongation at break</th>
<th>Peak melting temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit</strong></td>
<td><strong>Weight %</strong></td>
<td><strong>g/10 min</strong></td>
<td><strong>MPa</strong></td>
<td><strong>%</strong></td>
</tr>
<tr>
<td><strong>Test Method</strong></td>
<td><strong>ETM</strong></td>
<td><strong>ASTM D 1238</strong></td>
<td><strong>ASTM D 638</strong></td>
<td><strong>ASTM D 638</strong></td>
</tr>
</tbody>
</table>

#### Escor® Ultra ethylene vinyl acetate (EVA) copolymers

<table>
<thead>
<tr>
<th>Comonomer content</th>
<th>Melt index</th>
<th>Tensile strength at break</th>
<th>Elongation at break</th>
<th>Peak melting temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AD 0428EM1</strong></td>
<td>27.5</td>
<td>400</td>
<td>3</td>
<td>700</td>
</tr>
<tr>
<td><strong>AD 0433EH2</strong></td>
<td>33</td>
<td>400</td>
<td>1.7</td>
<td>710</td>
</tr>
<tr>
<td><strong>UL 00218CC3</strong></td>
<td>18</td>
<td>1.7</td>
<td>46</td>
<td>&gt;100</td>
</tr>
<tr>
<td><strong>UL 00328</strong></td>
<td>27</td>
<td>3</td>
<td>19</td>
<td>&gt;100</td>
</tr>
<tr>
<td><strong>UL 00728</strong></td>
<td>27.5</td>
<td>7.0</td>
<td>17</td>
<td>&gt;100</td>
</tr>
<tr>
<td><strong>UL 02133EN2</strong></td>
<td>33</td>
<td>21</td>
<td>&gt;5</td>
<td>&gt;750</td>
</tr>
<tr>
<td><strong>UL 02528</strong></td>
<td>27.5</td>
<td>25</td>
<td>&gt;6.5</td>
<td>&gt;700</td>
</tr>
<tr>
<td><strong>UL 04028CC</strong></td>
<td>27.5</td>
<td>41</td>
<td>6.5</td>
<td>720</td>
</tr>
<tr>
<td><strong>UL 04533EH2</strong></td>
<td>33.0</td>
<td>45</td>
<td>&gt;4.0</td>
<td>&gt;750</td>
</tr>
<tr>
<td><strong>UL 05540EH2</strong></td>
<td>39.0</td>
<td>60</td>
<td>&gt;1.8</td>
<td>&gt;750</td>
</tr>
<tr>
<td><strong>UL 15019CC</strong></td>
<td>19</td>
<td>150</td>
<td>4.9</td>
<td>650</td>
</tr>
<tr>
<td><strong>UL 15028CC</strong></td>
<td>27.5</td>
<td>150</td>
<td>3.6</td>
<td>830</td>
</tr>
<tr>
<td><strong>UL 40028</strong></td>
<td>28.0</td>
<td>400</td>
<td>2.5</td>
<td>570</td>
</tr>
<tr>
<td><strong>UL 53019</strong></td>
<td>19.0</td>
<td>530</td>
<td>3.2</td>
<td>230</td>
</tr>
<tr>
<td><strong>AD 2528</strong></td>
<td>27.6</td>
<td>3200(2)</td>
<td>2</td>
<td>240</td>
</tr>
<tr>
<td><strong>UL 7510</strong></td>
<td>18.7</td>
<td>500</td>
<td>2.9</td>
<td>330</td>
</tr>
<tr>
<td><strong>UL 7511</strong></td>
<td>18.7</td>
<td>500(1)</td>
<td>3</td>
<td>330</td>
</tr>
<tr>
<td><strong>UL 7521</strong></td>
<td>18.5</td>
<td>150(1)</td>
<td>3</td>
<td>610</td>
</tr>
<tr>
<td><strong>UL 7710</strong></td>
<td>26.7</td>
<td>420</td>
<td>1.6</td>
<td>500</td>
</tr>
<tr>
<td><strong>UL 7711</strong></td>
<td>26.7</td>
<td>420(1)</td>
<td>2</td>
<td>500</td>
</tr>
<tr>
<td><strong>UL 7720</strong></td>
<td>27.6</td>
<td>150(1)</td>
<td>2</td>
<td>640</td>
</tr>
<tr>
<td><strong>UL 7741</strong></td>
<td>26.7</td>
<td>43</td>
<td>4.0</td>
<td>&gt;800</td>
</tr>
<tr>
<td><strong>UL 7765</strong></td>
<td>26.2</td>
<td>2.3</td>
<td>10</td>
<td>&gt;800</td>
</tr>
<tr>
<td><strong>UL 8705</strong></td>
<td>27.6</td>
<td>9300(3)</td>
<td>2</td>
<td>360</td>
</tr>
<tr>
<td><strong>UL 7520</strong></td>
<td>18.5</td>
<td>140</td>
<td>4.2</td>
<td>&gt;800</td>
</tr>
<tr>
<td><strong>UL 7740</strong></td>
<td>27.6</td>
<td>43</td>
<td>1.9</td>
<td>&gt;800</td>
</tr>
<tr>
<td><strong>UL 7760</strong></td>
<td>26.7</td>
<td>5.7</td>
<td>8.3</td>
<td>&gt;800</td>
</tr>
<tr>
<td><strong>UL 7840E</strong></td>
<td>31.4</td>
<td>43</td>
<td>3</td>
<td>&gt;800</td>
</tr>
</tbody>
</table>

#### ExxonMobil™ ethylene n-butyl acrylate (EnBA) copolymers

<table>
<thead>
<tr>
<th>Comonomer content</th>
<th>Melt index</th>
<th>Tensile strength at break</th>
<th>Elongation at break</th>
<th>Peak melting temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EN 33331</strong></td>
<td>32.5</td>
<td>330(1)</td>
<td>1</td>
<td>270</td>
</tr>
<tr>
<td><strong>EN 33901</strong></td>
<td>32.5</td>
<td>8340(2)</td>
<td>1</td>
<td>135</td>
</tr>
</tbody>
</table>

#### Optema™ EMA (ethyl methyl acrylate) resins(3)

<table>
<thead>
<tr>
<th>Comonomer content</th>
<th>Melt index</th>
<th>Tensile strength at break</th>
<th>Elongation at break</th>
<th>Peak melting temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TC 110</strong></td>
<td>21.5</td>
<td>2</td>
<td>20/21 (MD/TD)(4)</td>
<td>370/650 (MD/TD)(4)</td>
</tr>
<tr>
<td><strong>TC 114</strong></td>
<td>18</td>
<td>3.2</td>
<td>20/20 (MD/TD)(4)</td>
<td>380/670 (MD/TD)(4)</td>
</tr>
<tr>
<td><strong>TC 120</strong></td>
<td>21.5</td>
<td>6</td>
<td>5.9</td>
<td>&gt;800</td>
</tr>
<tr>
<td><strong>TC 220</strong></td>
<td>24</td>
<td>5</td>
<td>5.9</td>
<td>&gt;800</td>
</tr>
</tbody>
</table>

Remark:

1. Value reported is an estimate based on ExxonMobil Chemical's correlation from melt flow rate data measured at other standard conditions.
2. Bookfield viscosity at 190°C in mPa.s using ASTM D 3236 test method.
3. Technical data sheets are also available for Optema products for other fabrication processes such as cast film, molding, and extrusion coating.
4. The data are based on blown film sample using ASTM D 882 test method.

Typical values are not specifications, but are provided to aid formulators in the selection of products for evaluations.

ETM: ExxonMobil Test Method
Vistamaxx™ performance polymers - typical values

<table>
<thead>
<tr>
<th>Grade</th>
<th>Density ExxonMobil method, g/cm³</th>
<th>Viscosity at 190°C (374°F) ExxonMobil method cP (mPas)</th>
<th>Melt mass-flow rate (MFR) ExxonMobil method 230°C/2.16 kg</th>
<th>Glass transition, Tg ExxonMobil method °C</th>
<th>Melting point, Tm ExxonMobil method °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>8880</td>
<td>0.879</td>
<td>1200</td>
<td>-</td>
<td>-22</td>
<td>97</td>
</tr>
<tr>
<td>8780</td>
<td>0.864</td>
<td>3980</td>
<td>-</td>
<td>-32</td>
<td>96</td>
</tr>
<tr>
<td>8380</td>
<td>0.864</td>
<td>7570</td>
<td>-</td>
<td>-31</td>
<td>100</td>
</tr>
<tr>
<td>6502</td>
<td>0.865 (1)</td>
<td>-</td>
<td>48 (2)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6202</td>
<td>0.863 (1)</td>
<td>-</td>
<td>20</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3980FL</td>
<td>0.878 (1)</td>
<td>-</td>
<td>8</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3000</td>
<td>0.873 (1)</td>
<td>-</td>
<td>8</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

(1) Test method based on ASTM D1505
(2) Test method based on ASTM D1238

Tackifiers and polymers for adhesion applications

<table>
<thead>
<tr>
<th>End-use</th>
<th>Escorez™ 1000 tackifier</th>
<th>Escorez™ 2000 tackifier</th>
<th>Escorez™ 5000 tackifier</th>
<th>Escorene™ Ultra EVA</th>
<th>Vistamaxx™ performance polymers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot-melt adhesives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonwovens</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packaging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bookbinding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woodworking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assembly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carpet backing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sealants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Converting | | | | |
| Tapes | | | | |
| Labels | | | | |
| Pipe wrapping | | | | |
| Wax blending | | | | |
| Road marking | | | | |
| Tire | | | | |