What is Acrylzan 201 Impact Modifier?

Acrylzan 201 is our unique PVC Impact Modifier which an interpenetrating network co-polymer (IPN) with the structure of CPE-interpenetrated Polyacrylate (mild-cross-linked). Its main function is to enhance the impact strength of PVC finished products under low temperature and to promote the fusion property of PVC blend. It can endow the best toughness to PVC finished products than other impact modifiers.

Classifications:

Acrylzan 201: Replace CPE or CPE+PA (processing aid) in recipe with less dosage.

The Benefits of Acrylzan 201:

- Better low temperature impact strength
- Higher toughness and elongation at break
- Faster fusion property
- Better surface gloss
- Better weather-resistance

Technical Standards:

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Acrylzan 201</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>--</td>
<td>Free-flow white powder</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>g/cm³</td>
<td>0.45±0.10</td>
</tr>
<tr>
<td>Sieve Residue (20 mesh)</td>
<td>%</td>
<td>≤2.0</td>
</tr>
<tr>
<td>Volatile Content</td>
<td>%</td>
<td>≤1.5</td>
</tr>
<tr>
<td>Foreign Particle</td>
<td>(10×10) cm²</td>
<td>≤20</td>
</tr>
</tbody>
</table>
Fusion properties comparison between our Acrylzan 201, Acrylzan 200 and competitor A based Ca-Zn stabiliser system:

1. Test conditions: 165°C 60rpm

<table>
<thead>
<tr>
<th>Samples</th>
<th>Using dosage</th>
<th>Fusion time (S)</th>
<th>Highest torque (Nm)</th>
<th>Equilibrium torque (Nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitor A</td>
<td>8.0phr</td>
<td>64.0</td>
<td>36.7</td>
<td>26.4</td>
</tr>
<tr>
<td>Acrylzan 200</td>
<td>8.0phr</td>
<td>64.0</td>
<td>36.1</td>
<td>26.4</td>
</tr>
<tr>
<td>Acrylzan 201</td>
<td>8.0phr</td>
<td>64.0</td>
<td>36.3</td>
<td>26.4</td>
</tr>
</tbody>
</table>

2. Test conditions: 180°C 60rpm
<table>
<thead>
<tr>
<th>Samples</th>
<th>Using dosage</th>
<th>Fusion time (S)</th>
<th>Highest torque (Nm)</th>
<th>Equilibrium torque (Nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitor A</td>
<td>8.0phr</td>
<td>44.0</td>
<td>32.9</td>
<td>22.7</td>
</tr>
<tr>
<td>Acrylz an 200</td>
<td>8.0phr</td>
<td>42.0</td>
<td>32.3</td>
<td>22.6</td>
</tr>
<tr>
<td>Acrylz an 201</td>
<td>8.0phr</td>
<td>42.0</td>
<td>32.4</td>
<td>22.7</td>
</tr>
</tbody>
</table>

3. Test conditions: 180°C 35rpm

![Graph showing test conditions and results](image1)

<table>
<thead>
<tr>
<th>Samples</th>
<th>Using dosage</th>
<th>Fusion time (S)</th>
<th>Highest torque (Nm)</th>
<th>Equilibrium torque (Nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitor A</td>
<td>8.0phr</td>
<td>113.0</td>
<td>28.7</td>
<td>23.5</td>
</tr>
<tr>
<td>Acrylz an 200</td>
<td>8.0phr</td>
<td>107.0</td>
<td>28.5</td>
<td>23.5</td>
</tr>
<tr>
<td>Acrylz an 201</td>
<td>8.0phr</td>
<td>107.0</td>
<td>29.1</td>
<td>23.5</td>
</tr>
</tbody>
</table>

4. Test conditions: 165°C 35rpm

![Graph showing test conditions and results](image2)
### Izod Impact Performance Comparison

Test Conditions: Relative Humidity: 50±10%

<table>
<thead>
<tr>
<th>Samples</th>
<th>Using dosage</th>
<th>Fusion time (S)</th>
<th>Highest torque (Nm)</th>
<th>Equilibrium torque (Nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitor A</td>
<td>8.0phr</td>
<td>175.0</td>
<td>33.8</td>
<td>30.9</td>
</tr>
<tr>
<td>Acrylzan 200</td>
<td>8.0phr</td>
<td>168.0</td>
<td>33.8</td>
<td>30.9</td>
</tr>
<tr>
<td>Acrylzan 201</td>
<td>8.0phr</td>
<td>170.0</td>
<td>34.1</td>
<td>31.0</td>
</tr>
</tbody>
</table>

### Table: Izod impact strength (KJ/m²) 25°C

<table>
<thead>
<tr>
<th>Samples</th>
<th>4.0phr</th>
<th>6.0phr</th>
<th>8.0phr</th>
<th>10.0phr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitor A</td>
<td>6.46</td>
<td>7.23</td>
<td>8.45</td>
<td>10.73</td>
</tr>
<tr>
<td>Acrylzan 200</td>
<td>6.48</td>
<td>7.32</td>
<td>8.65</td>
<td>10.92</td>
</tr>
<tr>
<td>Acrylzan 201</td>
<td>6.51</td>
<td>7.51</td>
<td>8.84</td>
<td>11.29</td>
</tr>
</tbody>
</table>

### Remarks

Test bar preparation:
- Firstly, milling for 7 mins under 185°C by opening mixing mill, then compression molding for 9 mins under 185°C. Secondly compact test sample for 3 min under the pressure of 15Mpa, and finally get the final test sample bar by cooling for 3 min.
- Executive standards: ASTM D256-10
Packing and Storage

25kg bag with PP bag, and PE inner bag or 500kg sack PP bag with PE liner. It should be stored in cool and dry surroundings with a shelf life of over two years. It can be used if qualified by inspection after the shelf life date.

Applications

Acrylzan 201 is mainly used to produce all kinds of opaque PVC products like PVC profile, PVC pipe, WPC and PVC fencing, etc.

Environmental and Safety Information

1. Acrylzan 201 is a high-molecular weight polymer, there is almost zero damage when it is released into the environment.

2. When handing the material, workers should obey the following safety operation procedures:

   A. Perfect ventilation Conditions
   B. Safety glasses should be sufficient for most operations
   C. Wearing rubber gloves
   D. Flush skin thoroughly after handing and touching the materials
   E. If the material comes into contact with the eyes, use clean water to wash the eye, and consult a doctor if necessary
   F. Before handling this material, ensure that you have read and understood the MSDS for additional information on personal protective equipment and for health and safety, and environmental information.