Our diverse range of products is specifically designed to offer complete systems that meet European and Global FST standards & performance ratings. Our FST products are used in many industries including Rail, Building & Construction and Marine. Scott Bader aims to provide excellent technical support, expertise and advice to support our products.

Rail Application case study: VIP Chair for China High Speed Train manufactured by Shanghai Cedar Composites Co. Ltd using Crestapol® 1212

Scott Bader was established in 1921 and today we are an independent, multinational chemical company with over 650 employees worldwide. We are a common trusteeship company, which means Scott Bader is owned by all employees, and can operate with great agility and innovation for the customers and industries we serve.

Today Scott Bader is a US $287 million global chemical company, with manufacturing facilities in Europe, The Middle East, India, South Africa, Saudi Arabia, Canada and South America.

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For the full range of systems, please ask a Scott Bader representative for assistance.

Crestapal’s FST performance is achieved by the addition of aluminium trihydrate (ATH). Due to the inherently low viscosity of Crestapol® Resins up to 200 phr of ATH can be incorporated to achieve a range of stringent fire, smoke and toxic fume standards (full details and certification can be found on page 7).

FST performance will also be dependent on glass content and profile thickness. Please contact Scott Bader Technical Services Dept. for advice on ATH loadings for specific applications.
Crestapol resins’ FST performance is achieved by the addition of aluminium trihydrate (ATH). Due to the inherent low viscosity of Crestapol® resins up to 200 phr of ATH can be incorporated to achieve a range of stringent fire, smoke and toxic fume standards. Fire performance will also be dependent on glass content and profile thickness. Please contact Scott Bader Technical Services Dept. for advice on ATH loadings for specific applications.

### Crestapol® 1211A
- Compounded Version of Crestapol® 1212
- Pre-accelerated and Pre-filled with ATH
- Closed Mould Applications
- Liquid Cure System
- Designed to be used with Fireguard GC 78PA for lighter weight FST Composite Parts

### Crestapol® 1212
- Urethane Acrylate based
- Thermosetting resin
- Very Low viscosity
- Flexibility to adjust ATH & Accelerator levels
- Pultrusion & Close moulding applications

### Crestapol® 1213A
- Compounded version of Crestapol® 1212
- Pre-accelerated and Pre-filled with ATH
- Hand Lamination & Close moulding applications

### Crestapol® 1214
- Urethane Acrylate based
- Comparable FST performance of Crestapol® 1212
- Low Profile technology for aesthetically demanding applications
- Pultrusion grade only

### Crestapol® 1261
- Urethane Acrylate based
- Excellent mechanical performance & toughness
- Compatible with glass & carbon fibres
- Designed for structural FST composite parts with Fireguard GC 78PA

#### Liquid properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit of Measurement</th>
<th>Crestapol® 1212</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>-</td>
<td>Clear yellowish brown</td>
</tr>
<tr>
<td>Viscosity @ 25°C 4500 sec⁻¹</td>
<td>Poise</td>
<td>0.7</td>
</tr>
<tr>
<td>Density @ 25°C gcm⁻³</td>
<td></td>
<td>1.07</td>
</tr>
<tr>
<td>Volatile Content %</td>
<td></td>
<td>49</td>
</tr>
<tr>
<td>Stability in the dark @ 20°C Months</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

### Crestapol® 1212 fracture toughness

- VE
- ISO UP
- Crestapol® 1212

<table>
<thead>
<tr>
<th>Fire requirement</th>
<th>Minimum ATH Loading</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>French NFP 92-501</td>
<td>170</td>
<td>M1</td>
</tr>
<tr>
<td>French NFP 16-101</td>
<td>170</td>
<td>F0</td>
</tr>
<tr>
<td>UNE 23721 : 1990</td>
<td>170</td>
<td>M1</td>
</tr>
<tr>
<td>UNE 23727 : 1990</td>
<td>170</td>
<td>S4/SR2/ST2</td>
</tr>
<tr>
<td>DIN 5510</td>
<td>100</td>
<td>S4/SR2/ST2</td>
</tr>
<tr>
<td>ASTM 162</td>
<td>100</td>
<td>IS = 10 (limit &lt;35)</td>
</tr>
<tr>
<td>ASTM 662</td>
<td>165</td>
<td>Ds (max) = 119</td>
</tr>
<tr>
<td>ASTM EB4</td>
<td>100</td>
<td>Dm (1.5) = 1</td>
</tr>
<tr>
<td>ISO 5658</td>
<td>170</td>
<td>Dm (4) = 4</td>
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<tr>
<td>ISO 5659-2</td>
<td>170</td>
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<tr>
<td>ISO 5660-142</td>
<td>170</td>
<td></td>
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</tbody>
</table>

#### Pultrusion guidelines

**Typical formulation**

- Crestapol® 1212 and 1214 100 pbw
- ATH 100 - 200 pbw
- BYK W996 # 3 - 6 pbw
- TBPB* 1 pbw
- TBP** 0.5 pbw
- PAT 654 (internal release agent) † 1 - 3 pbw
- Pigment (if required) 2 - 5 pbw

#### Start up approx 0.2 metre/minute

#### Features
- **High Reactivity**
  - Offering the potential for high line speeds compared to other typical thermosetting resins.
- **Mechanical Performance**
  - The inherent “toughness” of the cured resin matrix results in profiles exhibiting excellent mechanical performance despite the presence of high levels of filler.
- **Pigmentable**
  - Crestapol® 1212 is pigmentable and fully compatible with polyester pigment pastes.