Advanced Materials
Reliable and comprehensive insulation solutions

Selector guide for electrical engineering
For more than 60 years, Huntsman Advanced Materials has been developing innovative solutions that are used during virtually every stage in the production of power applications. Our know-how and expertise allow us to answer the most stringent requirements for electrical engineering:

- High thermal resistance and thermal conductivity
- Flame-retardancy (UL94 V0/HB listing and EN/TS 45545 qualifications)
- Excellent mechanical and dielectric properties
- Variable hardness and high dimensional stability
- Good chemical resistance and low water uptake
- Reduced production costs and improved efficiency

**More than just products**

All products are tested in our in-house electrical and mechanical testing laboratories to ensure they provide the desired properties and comply with environmental requirements. Our own ISO/IEC 17025 accredited laboratory can speed up the approval process and minimize time-to-market. Moreover, our global manufacturing footprint including ISO/TS (IATF) 16949 certified plants in Europe, China and the US and our local technical support teams ensure the highest proximity to our customers.
Switchgears

Araldite® and Aradur® casting systems can be used in indoor and outdoor applications and fulfill the general requirements for casting systems for switchgear parts which are medium to high glass transition temperature.

Your needs
> Medium to high glass transition temperature
> Tg adjusted to service temperature
> High resistance to mechanical creeping
> Good weathering resistance

Our solutions
> Araldite® casting systems
> Araldite® HCEP systems reduce leakage currents and improve reliability and extend life expectancy
> EHP system, with low exothermic reaction
> Cost effective filament winding systems

Instrument transformers

One of the major properties of Araldite® and Aradur® casting systems is high crack resistance, which is mandatory for instrument transformer castings.

Your needs
> High crack resistance
> Low partial discharge level of castings
> Flame-retardancy

Our solutions
> Solid Araldite® resins
> Flexibilised Araldite® system, Tg adjustable
> Prefilled, toughened systems for indoor and outdoor

Dry-type distribution transformers

The dry-type distribution transformer application is one of the fields where Araldite® systems have gained their long successful experience. Our Araldite® product range fulfills the very demanding requirements on insulation systems which are high crack resistance, slow curing process and a high thermal class.

Your needs
> High crack resistance
> Slow curing process
> High thermal class
> Flame-retardancy

Our solutions
> Araldite® vacuum casting systems with thermal class F/H

Generators and motors

Araldite® and Aradur® impregnation systems can be used in all insulation components of motors and generators thanks to their high mechanical strength, the strong adhesion to various metals and substrates and their excellent dielectric properties.

Your needs
> High mechanical strength
> Strong adhesion to various metals and substrates
> Excellent dielectric properties
> Anhydride free

Our solutions
> Araldite® impregnation systems with thermal class F/H
Our extensive range of experts enables us to provide more than chemical products by activating the best-in-class service for our customers and partners.

More than 30 years of in-house expertise

Our technical experts answer your challenges
We have an extensive field experience in the global electrical insulation sector. We guide you through our product portfolio and recommend the most efficient systems to meet your needs and process. We know the technical factors of success and travel to your location to assist and collaborate.

Our electrical insulation R&D team prepares you for the future
Our experienced chemists in Europe work constantly on innovations that improve products features, processability and solutions that address upcoming REACH restrictions.

State-of-the-art in-house facilities

Dedicated electrical insulation application center
> can produce according to your specs using our in-house equipments such as Vacuum casting, Automated Pressure Gelation (APG) and Vacuum Pressure Impregnation (VPI)
> can help you to simulate and optimize the casting process
> deals with your challenges and finds the best solutions for you.

In-house electrical and mechanical testing center
All of our products are tested in our in-house electrical and mechanical testings center. We can also provide thermal shock, thermal ageing, UV and weathering ageing tests that ensure the long-term reliability of our products.

We have built substantial knowledge, expertise and practical skills from decades of developing, testing, implementing and analyzing solutions for various industry challenges.

Trust our team of experts
### Impregnation systems

<table>
<thead>
<tr>
<th>Product designation</th>
<th>Mix ratio</th>
<th>Tg</th>
<th>Viscosity</th>
<th>Thermal class</th>
<th>Manufacturing process</th>
<th>Main features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resin XD 4410</td>
<td>1-component</td>
<td>125</td>
<td>1500</td>
<td>F</td>
<td>Vacuum pressure impregnation</td>
<td>1-component, excellent dielectric properties, Anydride-free.</td>
</tr>
<tr>
<td>Araldite® MY 790-1 / Aradur® HY 1102</td>
<td>100 : 100</td>
<td>143</td>
<td>400</td>
<td>H</td>
<td>Vacuum pressure impregnation</td>
<td>Standard system, thermal class H, high Tg, Excellent bath stability, low tan delta at high temperature.</td>
</tr>
<tr>
<td>Araldite® CY 192-1 / Aradur® HY 918-1</td>
<td>100 : 100</td>
<td>92</td>
<td>200</td>
<td>F</td>
<td>Vacuum pressure impregnation</td>
<td>Outstanding arc and tracking resistance, high flexibility and crack resistance.</td>
</tr>
</tbody>
</table>

### Monolithic insulators and bushings - Casting systems

<table>
<thead>
<tr>
<th>Product designation</th>
<th>Mix ratio</th>
<th>Tg</th>
<th>KIC</th>
<th>Manufacturing process</th>
<th>Main features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoor applications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® CY 228-1 / Aradur® HY 918-1 / Accelerator DY 062 or DY 087 / Filler Silica</td>
<td>100 : 85 : 0.8 : 345</td>
<td>110</td>
<td>2.1</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>Hydrophobic pre-filled system, low thermal expansion coefficient, high crack resistance, moderate reactivity, UL 746 B recognition for 200°C service temperature.</td>
</tr>
<tr>
<td>Resin XB 5915 / Hardener XB 5916</td>
<td>70 : 100</td>
<td>140</td>
<td>2.7</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>Toughened, high Tg, wollastonite pre-filled, suitable for medium voltage and high voltage, high crack resistance.</td>
</tr>
<tr>
<td>Outdoor applications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® CEP standard systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® CY 184 / Aradur® HY 1235 / Accelerator DY 062 or DY 087 / Filler Silica-EST</td>
<td>100 : 80 : 0.6 : 370</td>
<td>110</td>
<td>2.5</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>Long experience, liquid hardener, also used in severe indoor conditions (pollution humidity), EDF approved (HN-26-E-20).</td>
</tr>
<tr>
<td>Resin XB 5919-3 / Hardener XB 5919-3</td>
<td>100 : 100</td>
<td>110</td>
<td>2.6</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>Core shell toughened outdoor system, pre-filled, high crack resistance.</td>
</tr>
<tr>
<td>Araldite® HCEP systems with hydrophobic properties</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® CY 5622 / Aradur® HY 1239 / Accelerator DY 062 or DY 087 / Filler Silica-EST</td>
<td>100 : 82 : 0.45 : 355</td>
<td>110</td>
<td>2.5</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>Hydrophobic cycloaliphatic system with liquid hardener, excellent thermal cycle resistance, hydrophobicity transfer and recovery, extended insulator lifetime, utility approvals. Approved according to EN 45545 for railway applications: best class F23 / H2 suited for tunnels.</td>
</tr>
<tr>
<td>Resin XB 5957 / Hardener XB 5958</td>
<td>100 : 100</td>
<td>110</td>
<td>2.5</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>Hydrophobic pre-filled cycloaliphatic system, improved crack resistance, hydrophobicity transfer and recovery, extended insulator lifetime.</td>
</tr>
</tbody>
</table>
## Insulators and bushings - Impregnation systems

<table>
<thead>
<tr>
<th>Product designation</th>
<th>Mix ratio</th>
<th>Tg (°C)</th>
<th>Viscosity (mPa.s)</th>
<th>Flexural strength (MPa)</th>
<th>Manufacturing process</th>
<th>Main features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Composite insulators and bushings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>For rods and tubes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® MY 740 / Aradur® HY 1102 / Accelerator DY 062 or DY 067</td>
<td>100 : 90 : 0.2</td>
<td>140</td>
<td>1 000</td>
<td>115</td>
<td>Pultrusion, filament winding, vacuum impregnation</td>
<td>Standard system with variable accelerator amount.</td>
</tr>
<tr>
<td>Araldite® MY 740 / Aradur® HY 906 / Accelerator DY 070</td>
<td>100 : 95 : 1.2</td>
<td>170</td>
<td>1 500</td>
<td>145</td>
<td>Pultrusion, filament winding</td>
<td>High Tg system with good mechanical properties.</td>
</tr>
<tr>
<td>Araldite® MY 740 / Aradur® HY 918-1 / Accelerator DY 062 or DY 067</td>
<td>100 : 85 : 1.3</td>
<td>120</td>
<td>700</td>
<td>160</td>
<td>Pultrusion, filament winding</td>
<td>Standard system with high mechanical performance.</td>
</tr>
<tr>
<td>Araldite® CY 170 / Aradur® HY 907 / Accelerator DY 062</td>
<td>100 : 105 : 8.5</td>
<td>155</td>
<td>280</td>
<td>100</td>
<td>Filament winding</td>
<td>Low viscosity standard system for high Tg. Moderate reactivity. System also available with liquid hardener.</td>
</tr>
<tr>
<td><strong>For resin impregnated paper bushings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resin XB 5860 / Aradur® HY 1235</td>
<td>100 : 85</td>
<td>130</td>
<td>850</td>
<td>170</td>
<td>Vacuum impregnation</td>
<td>Very good mechanical properties, preaccelerated, moderate reactivity, low exothermic reaction.</td>
</tr>
<tr>
<td>Araldite® MY 740 / Aradur® HY 1102 / Accelerator DY 062 or DY 067</td>
<td>100 : 90 : 0.2</td>
<td>140</td>
<td>1 000</td>
<td>115</td>
<td>Vacuum impregnation</td>
<td>Standard system with variable accelerator amount.</td>
</tr>
<tr>
<td>Araldite® MY 790-1 / Aradur® HY 1102 / Accelerator DY 062 or DY 067</td>
<td>100 : 90 : 0.16 : 0.04</td>
<td>143</td>
<td>400</td>
<td>135</td>
<td>Vacuum impregnation</td>
<td>Thermal class H, high Tg. Ultra high voltage bushings.</td>
</tr>
<tr>
<td><strong>Gap filling dielectric - PU foam</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® CY 11035-1 / Aradur® HY 11035</td>
<td>100 : 25</td>
<td>-65</td>
<td>2 400</td>
<td></td>
<td>Elongation: 200%</td>
<td>Gas injected, mixing and dosing</td>
</tr>
</tbody>
</table>

## Switchgears

### Indoor systems

<table>
<thead>
<tr>
<th>Product designation</th>
<th>Mix ratio</th>
<th>Tg (°C)</th>
<th>KIC (MPa.m0.5)</th>
<th>Manufacturing process</th>
<th>Main features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>For medium voltage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® CY 228-1 / Aradur® HY 918-1 / Accelerator DY 062 or DY 067 / Filler Silica</td>
<td>100 : 85 : 0.8 : 345</td>
<td>110</td>
<td>2.1</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>High mechanical and electrical properties, good thermal shock resistance, high filler content possible.</td>
</tr>
<tr>
<td>Araldite® CY 225 / Aradur® HY 925 / Filler Silica</td>
<td>100 : 80 : 280</td>
<td>115</td>
<td>1.9</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>High mechanical and electrical properties, good thermal shock resistance.</td>
</tr>
<tr>
<td>Araldite® CY 5997 / Aradur® HY 5998-1 / Accelerator DY 062 or DY 067 / Filler Silica</td>
<td>100 : 85 : 0.75 : 340</td>
<td>115</td>
<td>2.4</td>
<td>Automatic pressure gelation</td>
<td>Preaccelerated hardener, high mechanical and electrical properties, good thermal shock resistance, high filler content possible.</td>
</tr>
<tr>
<td>Araldite® CY 5995 / Aradur® HY 925 / Filler Silica</td>
<td>100 : 80 : 270</td>
<td>120</td>
<td>2.5</td>
<td>Vacuum casting</td>
<td>Toughened system with high mechanical properties and excellent thermal shock resistance.</td>
</tr>
<tr>
<td>Araldite® CW 229-3 / Aradur® HW 229-1</td>
<td>100 : 100</td>
<td>115</td>
<td>2.9</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>Wollastonite prefilled system, low thermal expansion coefficient, high crack resistance, moderate reactivity, best suited for vacuum casting, UL 746 B recognition for 200°C service temperature.</td>
</tr>
<tr>
<td><strong>For high voltage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® CY 5995 / Aradur® HY 925 / Filler Al2O3</td>
<td>100 : 87 : 400</td>
<td>120</td>
<td>2.3</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>Toughened system for high-voltage GIS.</td>
</tr>
<tr>
<td>Resin XB 5950 / Hardener XB 5951 APG</td>
<td>100 : 100</td>
<td>130</td>
<td>2.0</td>
<td>Automatic pressure gelation</td>
<td>Alumina prefilled system for high-voltage GIS applications with high Tg and high mechanical properties.</td>
</tr>
<tr>
<td>Solid resin Araldite® B 41 / Aradur® HT 003 / Filler Silica or Al 203</td>
<td>100 : 40</td>
<td>115</td>
<td>2.4</td>
<td>Vacuum casting</td>
<td>High mechanical and electrical properties, good thermal shock resistance, big volume casting possible, high process temperatures needed.</td>
</tr>
</tbody>
</table>
**Switchgears (continued)**

### Outdoor systems

<table>
<thead>
<tr>
<th>Product designation</th>
<th>Mix ratio</th>
<th>Tg</th>
<th>KIC</th>
<th>Manufacturing process</th>
<th>Main features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>For medium voltage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® CEP standard systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® CY 184 / Aradur® HY 1235 / Accelerator DY 062 or DY 067 / Filler Silica-EST</td>
<td>100 : 80 : 0.6 : 370</td>
<td>110</td>
<td>2.5</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>Long experience, liquid hardener, also used in severe indoor conditions (pollution humidity), EDF approved [HN-26-E-20].</td>
</tr>
<tr>
<td>Resin XB 5919-3 / Hardener XB 5919-3</td>
<td>100 : 100</td>
<td>110</td>
<td>2.6</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>Core shell toughened outdoor system, pre-filled, high crack resistance.</td>
</tr>
<tr>
<td>Araldite® HCEP systems with hydrophobic properties</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® CY 5622 / Aradur® HY 1235 / Accelerator DY 062 or DY 067 / Filler Silica-EST</td>
<td>100 : 82 : 0.45 : 355</td>
<td>110</td>
<td>2.5</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>Hydrophobic cycloaliphatic system with liquid hardener, excellent thermal cycle resistance, hydrophobicity transfer and recovery, extended insulator lifetime.</td>
</tr>
<tr>
<td>Resin XB 5957 / Hardener XB 5958</td>
<td>100 : 100</td>
<td>110</td>
<td>2.6</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>Hydrophobic pre-filled cycloaliphatic system, improved crack resistance, hydrophobicity transfer and recovery, extended insulator lifetime.</td>
</tr>
</tbody>
</table>

### Systems for medium voltage

<table>
<thead>
<tr>
<th>Product designation</th>
<th>Mix ratio</th>
<th>Tg</th>
<th>KIC</th>
<th>Manufacturing process</th>
<th>Main features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Indoor applications</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® CY 228-1 / Aradur® HY 918-1 / Flexibilizer DY 045 / Accelerator DY 062 or DY 067 / Filler Silica</td>
<td>100 : 85 : 20 : 0.8 : 385</td>
<td>70</td>
<td>2.7</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>Standard, low viscosity, high filler load, DY 042 available as flexibilizer with improved toughness.</td>
</tr>
<tr>
<td>Araldite® CW 229-3 / Aradur® HW 229-1</td>
<td>100 : 100</td>
<td>115</td>
<td>2.9</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>Wollastonite pre-filled system, low thermal expansion coefficient, high crack resistance, moderate machinability, best suited for vacuum casting, UL 746 B recognition for 200°C service temperature.</td>
</tr>
<tr>
<td>Araldite® CY 5995 / Aradur® HY 227 / Filler Silica</td>
<td>100 : 100 : 300</td>
<td>80</td>
<td>3.5</td>
<td>Vacuum casting</td>
<td>Highest toughness and crack resistance.</td>
</tr>
<tr>
<td><strong>Outdoor applications</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® CEP standard systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resin XB 5919-3 / Hardener XB 5919-3</td>
<td>100 : 100</td>
<td>110</td>
<td>2.6</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>Core-shell toughened outdoor system, pre-filled, high crack resistance.</td>
</tr>
<tr>
<td>Araldite® CY 184 / Aradur® HY 1235 / Accelerator DY 062 or DY 067 / Filler Silica</td>
<td>100 : 90 : 0.6 : 370</td>
<td>110</td>
<td>2.5</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>Excellent mechanical and dielectrical properties, good thermal shock, high resistance to erosion under UV, high tracking and arc resistance.</td>
</tr>
<tr>
<td>Araldite® HCEP systems with hydrophobic properties</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® CY 5622 / Aradur® HY 1235 / Accelerator DY 062 or DY 067 / Filler Silica-EST</td>
<td>100 : 82 : 0.45 : 355</td>
<td>110</td>
<td>2.5</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>Hydrophobic cycloaliphatic system with liquid hardener, excellent thermal cycle resistance, hydrophobicity transfer and recovery, extended insulator lifetime.</td>
</tr>
<tr>
<td>Resin XB 5957 / Hardener XB 5958</td>
<td>100 : 100</td>
<td>110</td>
<td>2.6</td>
<td>Automatic pressure gelation, vacuum casting</td>
<td>Hydrophobic pre-filled cycloaliphatic system, improved crack resistance, hydrophobicity transfer and recovery, extended insulator lifetime.</td>
</tr>
</tbody>
</table>
Dry-type distribution transformers

<table>
<thead>
<tr>
<th>Product designation</th>
<th>Mix ratio</th>
<th>Tg</th>
<th>KIC</th>
<th>Thermal class</th>
<th>Manufacturing process</th>
<th>Main features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Araldite® CW 229-3 / Aradur® HW 229-1</td>
<td>100 : 100</td>
<td>115</td>
<td>2.9</td>
<td>H</td>
<td>Vacuum casting</td>
<td>Wollastonite prefilled system, low thermal expansion coefficient, high crack resistance, moderate reactivity, UL 746 B recognition for 200°C service temperature.</td>
</tr>
<tr>
<td>Araldite® CY 5948 BROWN / Aradur® HY 925-1</td>
<td>100 : 80 : 350</td>
<td>85</td>
<td>3.0</td>
<td>200</td>
<td>Vacuum casting</td>
<td>RAL 8016 color with good hiding power. UL 746 B recognition for 200°C service temperature. Additional hardener HY 925 available for different reactivity.</td>
</tr>
<tr>
<td>Araldite® CY 5948 / Aradur® HY 926 / Filler Silica</td>
<td>100 : 80 : 350</td>
<td>85</td>
<td>2.8</td>
<td>200</td>
<td>Vacuum casting, vacuum impregnation</td>
<td>UL 746 B recognition for 200°C service temperature. Also used without filler for GFRP structures.</td>
</tr>
<tr>
<td>Araldite® CY 5980 / Aradur® HY 5980 / Accelerator DY 061 (glass fiber)</td>
<td>100 : 95 : 0.2</td>
<td>100</td>
<td>-</td>
<td>H</td>
<td>Vacuum impregnation</td>
<td>High thermal stability low viscosity system, high glass fiber load possible.</td>
</tr>
<tr>
<td>Resin XB 5942 / Hardener XB 5943</td>
<td>100 : 100</td>
<td>55</td>
<td>2.4</td>
<td>F</td>
<td>Vacuum casting</td>
<td>Suitable for flame retardant cast resin transformers fulfilling IEC 60076-11 F1 E2 C2, low viscosity, low Tg, high filler load.</td>
</tr>
<tr>
<td>Araldite® P / Aradur® HY 905 / Flexibilizer DY 940 / Accelerator DY 061 / Filler Silica</td>
<td>100 : 100 : 10 : 410</td>
<td>95</td>
<td>2.8</td>
<td>F</td>
<td>Vacuum casting</td>
<td>Multi purpose standard system with long experience, low Tg, high crack resistance.</td>
</tr>
</tbody>
</table>

Adhesives

<table>
<thead>
<tr>
<th>Product designation</th>
<th>Color</th>
<th>Mix ratio</th>
<th>Mix viscosity</th>
<th>Pot life</th>
<th>Cure time 150°C N/mm²</th>
<th>Lap shear strength</th>
<th>E-modulus</th>
<th>Elongation at break</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Araldite® CY 8767 / Aradur® HY 8767-1</td>
<td>black</td>
<td>100 : 25</td>
<td>1</td>
<td>&gt;100</td>
<td>1 h at 60°C</td>
<td>-</td>
<td>3 800</td>
<td>2.7</td>
<td>Potting system for use in sealed acid and storage batteries. Low-cost alternative for terminal lead potting and housing sealing.</td>
</tr>
<tr>
<td>Araldite® AV 4415 / Hardener HV 4416-1</td>
<td>dark grey</td>
<td>100 : 50</td>
<td>90</td>
<td>1.5 min at 60°C</td>
<td>22</td>
<td>4 500</td>
<td>1.0</td>
<td>High performances on composites, bonds a wide range of substrates. Temperature resistance up to 180°C. Excellent resistance to most common chemicals. Non flowing paste for ease of application. Available in cartridges.</td>
<td></td>
</tr>
<tr>
<td>Araldite® AV 138M-1 / Hardener HV 908-1</td>
<td>grey</td>
<td>100 : 40</td>
<td>30</td>
<td>80 min at 40°C</td>
<td>15</td>
<td>4 200</td>
<td>1.0</td>
<td>Good temperature and chemical resistence even with a cure at room temperature.</td>
<td></td>
</tr>
<tr>
<td>Araldite® 2014-2</td>
<td>grey paste</td>
<td>100 : 50</td>
<td>110</td>
<td>1 h</td>
<td>3 000</td>
<td>1.0</td>
<td>Multi purpose adhesive with a high temperature and chemical resistance even with a cure at room temperature. Available in cartridges.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® AV 4738 / Hardener HV 700</td>
<td>grey paste</td>
<td>100 : 26</td>
<td>45</td>
<td>3 h at 23°C</td>
<td>16</td>
<td>3 000</td>
<td>1.5</td>
<td>Temperature resistance up to 150°C, excellent resistance to most chemicals. For metals and reinforced composites.</td>
<td></td>
</tr>
<tr>
<td>Araldite® AW 4859 / Hardener HW 4859 (Cartridge)</td>
<td>black</td>
<td>100 : 43</td>
<td>100</td>
<td>20 min at 80°C</td>
<td>33</td>
<td>1 500</td>
<td>5.0</td>
<td>High strength and toughness, good temperature resistence. Available in cartridges.</td>
<td></td>
</tr>
</tbody>
</table>

Product designation | Dielectric strength | Volume resistivity | Dielectric constant / Loss tangent | Loss tangent |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Araldite® CW 229-3 / Aradur® HW 229-1</td>
<td>20°C</td>
<td>105 °C</td>
<td>50k</td>
<td>RT</td>
</tr>
<tr>
<td>Araldite® CY 5948 BROWN / Aradur® HY 925-1</td>
<td>no data</td>
<td>3,2E+15</td>
<td>4.4</td>
<td>1.4</td>
</tr>
</tbody>
</table>
**Release agent**

Product designation | Benefits
--- | ---

**Cleaning agent**

Product designation | Benefits
--- | ---
Arex® Ecocleaner | Suitable alternative to solvents such as acetone, methylene chloride or NMP. Non-toxic. No hazard label. Improved working hygiene. Non flammable. High flash point. Readily biodegradable. Recycling by filtering. Flash point 103°C. Vapor pressure (20°C) of 25 Pa.

---

**Ancillaries**

**Coloring pastes**

<table>
<thead>
<tr>
<th>Product designation</th>
<th>Color</th>
<th>Color Index</th>
<th>pH value</th>
<th>Viscosity</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Araldite® DW 0131 / RAL 1013 (white)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Uniform and homogenous coloration. Minor effects on the processing and end-properties of a casting resin system. Light and heat resistance. Viscosity at 25°C: 20 - 160 Pas. Pigment particle size below 50 µm.</td>
</tr>
<tr>
<td>Araldite® DW 0133 / RAL 3000 (red)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® DW 0136 / RAL 8016 (brown)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® DW 0137-1 / RAL 8022 (black)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® DW 0139 / RAL 7035 (grey)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araldite® DW 0134 / RAL 7035 (grey)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Flexibilizers**

<table>
<thead>
<tr>
<th>Product designation</th>
<th>Color</th>
<th>Color Index</th>
<th>pH value</th>
<th>Viscosity</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibilizer DY 042</td>
<td>clear liquid</td>
<td>&lt; 30</td>
<td>5.0 - 7.0</td>
<td>45 - 85</td>
<td>Low viscosity. Superior toughening / higher flexibility. Better crack resistance. Less amount required.</td>
</tr>
<tr>
<td>Flexibilizer DY 044</td>
<td>clear liquid</td>
<td>&lt; 60</td>
<td>4.0 - 7.0</td>
<td>150 - 200</td>
<td>Addition up to 20% possible.</td>
</tr>
<tr>
<td>Flexibilizer DY 045</td>
<td>colorless liquid</td>
<td>&lt; 15</td>
<td>5.0 - 7.0</td>
<td>80 - 105</td>
<td>Addition up to 20% possible.</td>
</tr>
</tbody>
</table>

**Release agent**

Product designation | Benefits
--- | ---

**Cleaning agent**

Product designation | Benefits
--- | ---
Arex® Ecocleaner | Suitable alternative to solvents such as acetone, methylene chloride or NMP. Non-toxic. No hazard label. Improved working hygiene. Non flammable. High flash point. Readily biodegradable. Recycling by filtering. Flash point 103°C. Vapor pressure (20°C) of 25 Pa.

---

**Application technologies**

**Why using this process?**

- Ensuring perfect impregnation of high voltage windings
- Reliable electrical insulation
- Excellent chemical and mechanical protection
- Short cycle times
- Fully automatic continuous production lines
- Mass production with highest productivity

**Which criteria need to be considered for the selection of a resin system?**

- Excellent impregnation and gap filling capability
- Low viscosity for easy processing
- High crack resistance
- Low coefficient of thermal expansion
- High thermal durability (thermal class)
- High dielectric strength
- High heat conductivity
- Sedimentation stability
- Supply in bulk container

**What are the typical applications?**

- Insulators
- Bushings
- Stators / Rotors

**1. Vacuum casting**

- Ensuring perfect impregnation of high voltage windings
- Reliable electrical insulation
- Excellent chemical and mechanical protection
- Short cycle times
- Fully automatic continuous production lines
- Mass production with highest productivity

**2. Automated Pressure Gelation (APG)**

- Short cycle times
- Void free castings
- Shrinkage compensation
- Feeding of clamping machines over ring lines with central resin system preparation

**3. Trickle impregnation**

- Ensuring void-free impregnation of windings
- No loss of impregnating resin
- Automatic trickle machines for continuous process
- Excellent bonding and mechanical fixation
- Good heat dissipation

**4. Vacuum Pressure Impregnation (VPI)**

- Ensuring void-free impregnation
- Reliable electrical insulation with lowest partial discharges
- Excellent bonding and mechanical fixation
- Good heat dissipation

---

**NEW**

Application technologies Process 1-2: Casting | Process 3-4: Impregnation

**Why using this process?**

- Ensuring perfect impregnation of high voltage windings
- Reliable electrical insulation
- Excellent chemical and mechanical protection
- Short cycle times
- Fully automatic continuous production lines
- Mass production with highest productivity

**Which criteria need to be considered for the selection of a resin system?**

- Excellent impregnation and gap filling capability
- Low viscosity for easy processing
- High crack resistance
- Low coefficient of thermal expansion
- High thermal durability (thermal class)
- High dielectric strength
- High heat conductivity
- Sedimentation stability
- Supply in bulk container

**What are the typical applications?**

- Insulators
- Bushings
- Stators / Rotors

---

**NEW**

Application technologies Process 1-2: Casting | Process 3-4: Impregnation

**Why using this process?**

- Ensuring perfect impregnation of high voltage windings
- Reliable electrical insulation
- Excellent chemical and mechanical protection
- Short cycle times
- Fully automatic continuous production lines
- Mass production with highest productivity

**Which criteria need to be considered for the selection of a resin system?**

- Excellent impregnation and gap filling capability
- Low viscosity for easy processing
- High crack resistance
- Low coefficient of thermal expansion
- High thermal durability (thermal class)
- High dielectric strength
- High heat conductivity
- Sedimentation stability
- Supply in bulk container

**What are the typical applications?**

- Insulators
- Bushings
- Stators / Rotors

---

**NEW**

Application technologies Process 1-2: Casting | Process 3-4: Impregnation

**Why using this process?**

- Ensuring perfect impregnation of high voltage windings
- Reliable electrical insulation
- Excellent chemical and mechanical protection
- Short cycle times
- Fully automatic continuous production lines
- Mass production with highest productivity

**Which criteria need to be considered for the selection of a resin system?**

- Excellent impregnation and gap filling capability
- Low viscosity for easy processing
- High crack resistance
- Low coefficient of thermal expansion
- High thermal durability (thermal class)
- High dielectric strength
- High heat conductivity
- Sedimentation stability
- Supply in bulk container

**What are the typical applications?**

- Insulators
- Bushings
- Stators / Rotors

---

**NEW**

Application technologies Process 1-2: Casting | Process 3-4: Impregnation

**Why using this process?**

- Ensuring perfect impregnation of high voltage windings
- Reliable electrical insulation
- Excellent chemical and mechanical protection
- Short cycle times
- Fully automatic continuous production lines
- Mass production with highest productivity

**Which criteria need to be considered for the selection of a resin system?**

- Excellent impregnation and gap filling capability
- Low viscosity for easy processing
- High crack resistance
- Low coefficient of thermal expansion
- High thermal durability (thermal class)
- High dielectric strength
- High heat conductivity
- Sedimentation stability
- Supply in bulk container

**What are the typical applications?**

- Insulators
- Bushings
- Stators / Rotors

---

**NEW**

Application technologies Process 1-2: Casting | Process 3-4: Impregnation

**Why using this process?**

- Ensuring perfect impregnation of high voltage windings
- Reliable electrical insulation
- Excellent chemical and mechanical protection
- Short cycle times
- Fully automatic continuous production lines
- Mass production with highest productivity

**Which criteria need to be considered for the selection of a resin system?**

- Excellent impregnation and gap filling capability
- Low viscosity for easy processing
- High crack resistance
- Low coefficient of thermal expansion
- High thermal durability (thermal class)
- High dielectric strength
- High heat conductivity
- Sedimentation stability
- Supply in bulk container

**What are the typical applications?**

- Insulators
- Bushings
- Stators / Rotors

---

**NEW**

Application technologies Process 1-2: Casting | Process 3-4: Impregnation

**Why using this process?**

- Ensuring perfect impregnation of high voltage windings
- Reliable electrical insulation
- Excellent chemical and mechanical protection
- Short cycle times
- Fully automatic continuous production lines
- Mass production with highest productivity

**Which criteria need to be considered for the selection of a resin system?**

- Excellent impregnation and gap filling capability
- Low viscosity for easy processing
- High crack resistance
- Low coefficient of thermal expansion
- High thermal durability (thermal class)
- High dielectric strength
- High heat conductivity
- Sedimentation stability
- Supply in bulk container

**What are the typical applications?**

- Insulators
- Bushings
- Stators / Rotors

---

**NEW**

Application technologies Process 1-2: Casting | Process 3-4: Impregnation

**Why using this process?**

- Ensuring perfect impregnation of high voltage windings
- Reliable electrical insulation
- Excellent chemical and mechanical protection
- Short cycle times
- Fully automatic continuous production lines
- Mass production with highest productivity

**Which criteria need to be considered for the selection of a resin system?**

- Excellent impregnation and gap filling capability
- Low viscosity for easy processing
- High crack resistance
- Low coefficient of thermal expansion
- High thermal durability (thermal class)
- High dielectric strength
- High heat conductivity
- Sedimentation stability
- Supply in bulk container

**What are the typical applications?**

- Insulators
- Bushings
- Stators / Rotors
With innovation

Every day, all over the world, our Technical Competence centers engage in intensive research and development focusing on one goal; to deliver innovative solutions by working hand-in-hand with our business partners. Together through a continual exchange of ideas, supported by an experienced team of sales and technical specialists, we strive to deliver innovative solutions.

We track both new market expectations and changing regulations. Protection of the environment, as well as health and safety are paramount concerns that play an integral part in our development projects.

By providing certified technologies and patented products in combination with high quality and reliability, our chemists and experts bring enhanced value to our customers to ensure their success.

With customer understanding

We market a unique product portfolio and a broad range of forward-looking solutions for our customers. Customers and partners benefit from an advanced level of service in:

> Product development and quality control
> Product trials in-house and with customers
> Customer seminars and training
> Trouble-shooting and problem-solving

Partnership with our customers is more than simply "putting them first". It requires long-term commitment to forge close relationships that create synergies of knowledge, security and adaptability to create a successful, shared future.

With care

Sustainability is a fundamental part of our corporate and business strategy. We see a better world in which our innovations help reduce consumption of natural resources and improve the quality of life for people everywhere. We are identifying the long-term trends that affect our markets and looking at how our products and applications can play a part in supporting and providing solutions to the challenges these markets face.

We value your challenge
Huntsman Advanced Materials

Our Advanced Materials division is a leading global chemical solutions provider with a long heritage of pioneering technologically advanced epoxy, acrylic, phenolic and polyurethane-based polymer products.

Our capabilities in high-performance adhesives and composites, delivered by more than 1,600 associates, serve over 2,000 global customers with innovative, tailor-made solutions and more than 1,500 products which address global engineering challenges.

We operate synthesis, formulating and production facilities around the world.