Cable Ties and Fixings
Cable Ties Outside Serrated

OS-Series cable ties are used in many areas where thin-walled or soft insulation wires and cable are being installed, for instance automotive and aircraft industry. OS ties manufactured from PA66V0 material are suitable for applications where safety regulations require reduction of smoke and dangerous gases.

Features and benefits
- Outside serrated cable tie with smooth surface to the bundle
- Tie follows the contours of the cable bundle perfectly
- Takes up less space due to curved head design
- Easy insertion combined with high tensile strength
- PA46 material for higher temperatures up to +195 °C (500 h)
- PA66V0 cable ties fulfill Limited Fire Hazard requirements
- Easy application either manually or with a processing tool

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All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

For product specific approvals and specifications please refer to the Appendix.

Material specification please see page 26.
### Material Specification Overview

<table>
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<th>MATERIAL</th>
<th>Material Shortcut</th>
<th>Operating Temperature</th>
<th>Colour**</th>
<th>Flammability</th>
<th>Material Properties*</th>
<th>Material Specifications</th>
</tr>
</thead>
</table>
| Aluminium alloy | AL | -40 °C to +180 °C | Natural (NA) | • Corrosion resistant  
• Antimagnetic | RoHS |
| Chloroprene rubber | CR | -20 °C to +80 °C | Black (BK) | • Weather resistant  
• High yield strength | RoHS |
| Ethylene Tetrafluoroethylene (Tefzel®) | E/TFE | -80 °C to +170 °C | Blue (BU) UL 94 V0 | • Resistance to radioactivity  
• UV resistant, not moisture sensitive  
• Good chemical resistance to acids, bases, oxidizing agents | RoHS |
| Polyacetal | POM | -40 °C to +90 °C, (+110 °C, 500 h) | Natural (NA) UL 94 HB | • Limited brittleness sensitivity  
• Flexible at low temperature  
• Not moisture sensitive  
• Robust on impact | RoHS |
| Polyamide 11 | PA11 | -40 °C to +85 °C, (+105 °C, 500 h) | Black (BK) UL 94 HB | • Good chemical resistance to acids, bases, oxidizing agents  
• UV resistant | HF |
| Polyamide 12 | PA12 | -40 °C to +85 °C, (+105 °C, 500 h) | Black (BK) UL 94 HB | • Resistance to high temperatures  
• Very moisture sensitive  
• Low smoke sensitivity | HF |
| Polyamide 4.6 | PA46 | -40 °C to +130 °C, (+150 °C, 5000 h; +195 °C, 500 h) | Natural (NA), Grey (GY) UL 94 V2 | • Resistance to high temperatures  
• Very moisture sensitive  
• Low smoke sensitivity | HF, LFH, RoHS |
| Polyamide 6 | PA6 | -40 °C to +80 °C | Black (BK) UL 94 V2 | • High yield strength | RoHS |
| Polyamide 6 high impact modified | PA6HIR | -40 °C to +80 °C | Black (BK) UL 94 HB | • Limited brittleness sensitivity  
• Higher flexibility at low temperature | RoHS |
| Polyamide 6.6 | PA66 | -40 °C to +85 °C, (+105 °C, 500 h) | Black (BK), Natural (NA) UL 94 V2 | • High yield strength | HF, RoHS |
| Polyamide 6.6 glass-fibre reinforced | PA66GF13, PA66GF15 | -40 °C to +105 °C | Black (BK) UL 94 HB | • Good resistance to lubricants, fuels, salt water and solvents | RoHS |
| Polyamide 6.6 heat and UV stabilised | PA66HSW | -40 °C to +105 °C | Black (BK) UL 94 V2 | • High yield strength  
• Modified elevated maximum temperature  
• UV resistant | HF, RoHS |
| Polyamide 6.6 heat stabilised | PA66HS | -40 °C to +105 °C | Black (BK), Natural (NA) UL 94 V2 | • High yield strength  
• Modified elevated maximum temperature | HF, RoHS |
| Polyamide 6.6 high impact modified | PA66HIR | -40 °C to +80 °C, (+105 °C, 500 h) | Black (BK) UL 94 HB | • Limited brittleness sensitivity  
• Higher flexibility at low temperature | RoHS |
| Polyamide 6.6 high impact modified, heat and UV stabilised | PA66HIRHSW | -40 °C to +110 °C | Black (BK) UL 94 HB | • Limited brittleness sensitivity  
• Higher flexibility at low temperature  
• Modified elevated maximum temperature  
• High yield strength, UV resistant | RoHS |
| Polyamide 6.6 high impact modified, heat stabilised | PA66HIRHS | -40 °C to +105 °C | Black (BK) UL 94 HB | • Limited brittleness sensitivity  
• Higher flexibility at low temperature  
• Modified elevated maximum temperature | RoHS |
| Polyamide 6.6 high impact modified, scan black | PA66HIR(S) | -40 °C to +80 °C, (+105 °C, 500 h) | Black (BK) UL 94 HB | • Limited brittleness sensitivity  
• Higher flexibility at low temperature | RoHS |
| Polyamide 6.6 UV resistant | PA66W | -40 °C to +85 °C, (+105 °C, 500 h) | Black (BK) UL 94 V2 | • High yield strength  
• UV resistant | HF, RoHS |
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<tr>
<td>Polyamide 6.6 with metal particles</td>
<td>PA66MP</td>
<td>-40 °C to +85 °C, (+105 °C, 500 h)</td>
<td>Blue (BU)</td>
<td>UL 94 HB</td>
<td>• High yield strength • Metal and X-Ray detectable</td>
<td>HF RoHS</td>
</tr>
<tr>
<td>Polyamide 6.6 with metal particles</td>
<td>PA66MP+</td>
<td>-40 °C to +85 °C</td>
<td>Blue (BU)</td>
<td>not flame retardant</td>
<td>• High yield strength • Metal and X-Ray detectable</td>
<td>HF RoHS</td>
</tr>
<tr>
<td>Polyamide 6.6 V0</td>
<td>PA66V0</td>
<td>-40 °C to +85 °C</td>
<td>White (WH)</td>
<td>UL 94 V0</td>
<td>• High yield strength • Low smoke emission</td>
<td>HF LFH RoHS</td>
</tr>
<tr>
<td>Polyester</td>
<td>SP</td>
<td>-50 °C to +150 °C</td>
<td>Black (BK)</td>
<td></td>
<td>• UV resistant • Good chemical resistance to most acids, bases and oils</td>
<td>HF LFH RoHS</td>
</tr>
<tr>
<td>Polyetheretherketone</td>
<td>PEEK</td>
<td>-55 °C to +240 °C</td>
<td>Beige (BGE)</td>
<td>UL 94 V0</td>
<td>• Resistance to radioactivity • Not moisture sensitive • Good chemical resistance to acids, bases, oxidising agents</td>
<td>HF LFH RoHS</td>
</tr>
<tr>
<td>Polyethylene</td>
<td>PE</td>
<td>-40 °C to +50 °C</td>
<td>Black, Grey (BK, GY)</td>
<td>UL 94 HB</td>
<td>• Low moisture absorption • Good chemical resistance to most acids, bases, alcohol, oils</td>
<td>HF RoHS</td>
</tr>
<tr>
<td>Polyolefin</td>
<td>PO</td>
<td>-40 °C to +90 °C</td>
<td>Black (BK)</td>
<td>UL 94 V0</td>
<td>• Low smoke emissions</td>
<td>HF LFH RoHS</td>
</tr>
<tr>
<td>Polypropylene</td>
<td>PP</td>
<td>-40 °C to +115 °C</td>
<td>Black (BK), Natural (NA)</td>
<td>UL 94 HB</td>
<td>• Floats in water • Moderate yield strength • Good chemical resistance to acids, bases and solvents</td>
<td>HF RoHS</td>
</tr>
<tr>
<td>Polypropylene, Ethylene Propylene Diene Terpolymer rubber free of Nitrosamine</td>
<td>PP, EPDM</td>
<td>-20 °C to +95 °C</td>
<td>Black (BK)</td>
<td>UL 94 HB</td>
<td>• Good resistance to high temperature • Good chemical and abrasion resistance</td>
<td>HF RoHS</td>
</tr>
<tr>
<td>Polypropylene with metal particles</td>
<td>PPMP</td>
<td>-40 °C to +115 °C</td>
<td>Blue (BU)</td>
<td>UL 94 HB</td>
<td>• Metal and X-Ray detectable • Heat resistant • Moderate yield strength • Good chemical resistance</td>
<td>RoHS</td>
</tr>
<tr>
<td>Polypropylene with metal particles</td>
<td>PPMP+</td>
<td>-40 °C to +85 °C</td>
<td>Blue (BU)</td>
<td>not flame retardant</td>
<td>• High yield strength • Metal and X-Ray detectable</td>
<td>HF RoHS</td>
</tr>
<tr>
<td>Polyvinylchloride</td>
<td>PVC</td>
<td>-10 °C to +70 °C</td>
<td>Black (BK), Natural (NA)</td>
<td>UL 94 V0</td>
<td>• Low moisture absorption • Good chemical resistance to acids, bases, salts, alcohol, oils</td>
<td>RoHS</td>
</tr>
<tr>
<td>Stainless Steel, Stainless Steel</td>
<td>SS304, SS316</td>
<td>-80 °C to +538 °C</td>
<td>Natural (NA)</td>
<td>Non burning</td>
<td>• Corrosion resistant • Antimagnetic • Weather resistant • Chemical resistance • SS316 also resistant against seawater, salt spray and anorganic acids</td>
<td>HF LFH RoHS</td>
</tr>
<tr>
<td>Thermoplastic Polyurethane</td>
<td>TPU</td>
<td>-40 °C to +85 °C</td>
<td>Black (BK)</td>
<td>UL 94 HB</td>
<td>• High elasticity • Good chemical resistance to acids, bases and oxidising agents</td>
<td>HF RoHS</td>
</tr>
</tbody>
</table>

*Tefzel® is a registered trademark of DuPont. General linguistic usage for cable ties made from raw material E/TFE is Tefzel®-Tie. In addition to Tefzel® from DuPont HellermannTyton also uses equivalent E/TFE raw material from other suppliers.

**Further details available on request.

*These details are only guide values. They should not be regarded as exhaustive material specification and are no substitute for suitability tests. Please see our datasheets for further details.

HF = Halogenfree
LFH = Limited Fire Hazard
RoHS = Restriction of Hazardous Substances