EOS TPU 1301
Flexible Polymer Material

The part properties such as flexibility and level of damping of this TPU can be adjusted via structural design with lattice structure, or by adapting the process parameters.

**Main Characteristics**
- Great resilience
- Good hydrolysis resistance
- High UV-stability
- Very good shock absorption
- Shore hardness 86 A
- Low refresh rate

**Typical Applications**
- Footwear & lifestyle parts that demand elastomeric properties, e.g. handles, shoe soles
- Automotive & industry parts, e.g. tubes, bellows, seals, gaskets
- Protective sports gear, e.g. helmet cushioning
- Applications usually made from foam can be replaced by lattice structures in EOS TPU 1301

### Particle Size

<table>
<thead>
<tr>
<th>Powder property</th>
<th>d10 [µm]</th>
<th>d50 [µm]</th>
<th>d90 [µm]</th>
<th>Bulk density [g/cm³]</th>
<th>Flowability [s]</th>
<th>Melting point [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>d10</td>
<td>~ 22</td>
<td>~ 72</td>
<td>~ 138</td>
<td></td>
<td>~ 17</td>
<td>~138</td>
</tr>
</tbody>
</table>

**Typical mechanical properties at room temperature [6, 7, 8]**

<table>
<thead>
<tr>
<th>Material</th>
<th>Tensile strength (MPa)</th>
<th>Tensile modulus (MPa)</th>
<th>Elongation at break [%]</th>
<th>Impact strength Charpy notched 23 °C (kJ/m²)</th>
<th>Impact strength Charpy notched -30 °C (kJ/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EOS P 396</td>
<td>7</td>
<td>60</td>
<td>250</td>
<td>n.b. (no break)</td>
<td>n.b.</td>
</tr>
<tr>
<td>EOS P 770</td>
<td>7</td>
<td>60</td>
<td>250</td>
<td>n.b. (no break)</td>
<td>n.b.</td>
</tr>
</tbody>
</table>

**Importance note:**
This data sheet specifies the powder properties of the EOS powder type referenced above. If you purchase powder from EOS, EOS will deliver such powder in conformity with the version of this data sheet prevailing at the time of your order. If you purchase powder from any source other than EOS, EOS makes no warranties or representations with respect to powder properties to you whatsoever, and disclaims any liability, with respect to actual part properties achieved with this material. Part properties are subject to variation and dependent on factors such as system parameters, process and test geometries. Therefore actual part properties may deviate and users of this material are exclusively responsible to determine its suitability for the intended use. The part properties stated above have been determined by testing this material with above specified type of EOS laser sintering system, EosYSYSTEM and EOSPRINT software version, parameter set and operation in compliance with parameter sheet and operating instructions. Part properties are measured with specified measurement methods using defined test geometries and procedures. Further details of the test procedures used by EOS are available on request.

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