EOS TPU 1301<br>Material Data Sheet

## 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

$\longrightarrow$ Great resilience
$\longrightarrow$ Good hydrolysis resistance
$\longrightarrow$ High UV-stability
$\longrightarrow$ Very good shock absorption
$\longrightarrow$ Shore hardness 86 A
$\longrightarrow$ Low refresh rate

## Typical Applications

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


Particle size
Powder

| d10 ${ }^{[1]}$ | $\sim 22 \mu \mathrm{~m}$ | Bulk density ${ }^{[2]}$ | $0,49 \mathrm{~g} / \mathrm{cm}^{3}$ |
| :---: | :---: | :---: | :---: |
| d50 ${ }^{\text {[1] }}$ | $\sim 72 \mu \mathrm{~m}$ | Flowability ${ }^{[3]}$ | $\sim 17 \mathrm{~s}$ |
| d90 ${ }^{[1]}$ | $\sim 138 \mu \mathrm{~m}$ | Melting point ${ }^{[4]}$ | $\sim 138{ }^{\circ} \mathrm{C}$ |

Part density [5, 8]
~ $1,11 \mathrm{~g} / \mathrm{cm}^{3}$ Shore

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

|  | EOS P 396 [120 $\mu \mathrm{m}$ ] |  | EOS P 770 [120 $\mu \mathrm{m}$ ] |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $x / y$ | z | $x / y$ | z |
| Tensile strength [MPa] | 7 | 5 | 7 | 5 |
| Tensile modulus [MPa] | 60 | 60 | 60 | 50 |
| Elongation at break [\%] | 250 | 90 | 250 | 60 |
| Impact strength Charpy notched $23{ }^{\circ} \mathrm{C}\left[\mathrm{kJ} / \mathrm{m}^{2}\right]$ | n.b. (no break) | n.b. | n.b. | n.b. |
| Impact strength Charpy notched -30 ${ }^{\circ} \mathrm{C}\left[\mathrm{kJ} / \mathrm{m}^{2}\right]$ | n.b. | n.b. | n.b. | n.b. |

[^0][5] as per DIN EN ISO 1183-1 [6] as per DIN EN ISO 527 [7] as per DIN EN ISO 868
[8] Part properties stated above are provided for information purposes only and EOS makes no representation or warranty 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, EOSYSTEM 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.

## Headquarters

EOS GmbH
Electro Optical Systems
Robert-Stirling-Ring 1
D-82152 Krailling/Munich Germany
Phone +49 89893 36-0 info@eos.info

## www.eos.info

in EOS
v EOSGmbH
(0) EOS.global

- EOSGmbH
\#ShapingFuture

Further Offices

EOS France
Phone +33 437497676
EOS Greater China
Phone +86 2160230700

EOS India
Phone +914439648000
EOS Italy
Phone +39 0233401659

EOS Japan
Phone +81456700250
EOS Korea
Phone +82 263305800

EOS Nordic \&t Baltic
Phone +46 317604640

EOS of North America
Phone +1 8773887916
EOS Singapore
Phone +65 64300463

EOS UK
Phone +44 1926675110

[^1]
[^0]:    [1] Laser diffraction (wet), as per ISO 13320-1 [2] as per DIN EN ISO 60 [3] as per DIN EN ISO 6186 [4] as per DIN 53736

[^1]:    Important 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 claims with respect to the quality or properties of EOS powder are available only against the seller of such powder in accordance with your agreement with the seller, not against EOS. EOS data sheets are subject to change without notice. This data sheet does not constitute a guaranty or warranty of properties or fitness for a specific purpose and may not be relied upon as such.

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