

ACEO® Silicone GP Shore A 20

3D PRINTED ACEO® SILICONES

Product description

3D printed rubber objects of the ACEO® GP series are consistently high-quality parts which are produced via additive manufacturing. These elastomers are made out of 100 % pure silicone. The applied platinum catalyzed addition reactions lead to odor- and tasteless products

All 3D printed rubber objects of the ACEO® GP series are postcured after the 3D printing process. This allows for an improvement in the mechanical properties (e.g. a particularly low compression set) and the removal of volatiles (low-molecular polymer components). The post treatment leads to a slight yellow discoloration in translucent parts.

Special features

ACEO® GP Shore A 20 has been designed especially for 3D printed parts. It is noted for its very good mechanical and electrical properties, including a good tear resistance according to ASTM D 624 B and DIN ISO 34-1 A (DIN 53507).

Available Colors:

ACEO® GP Shore A 20 is currently offered in various colors. For detailed information please refer to the ACEO® design guidelines on www.aceo3d.com.

General properties of silicone elastomers

Rubber objects made of silicones can be used within a temperature range of - 55 °C to + 180 °C.

They are resistant to dilute acids and bases. Nonpolar

solvents (gasoline, benzene, chlorinated hydrocarbons) cause extensive swelling.

Silicone elastomers show a high resistance to radiation and environmental influences and have a water repellent surface. They are insulators and show remarkable high gas permeability.

Appearance

3D printed rubber objects of the ACEO® GP series do show various surface qualities. Four different surfaces can be expected:

Surfaces being in contact to the building platform, surfaces generated by the layer by layer built up, surfaces of the ACEO® Silicones itself, and surfaces being in contact to the support material (if used). For further details, please refer to the ACEO® design guidelines on www.aceo3d.com.

Application

ACEO® GP Shore A 20 has been designed especially for 3D printed parts. This material enables applications in automotive, aerospace, medical and many other applications.

Safety notes

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available on request from WACKER subsidiaries or may be printed via WACKER web site <http://www.wacker.com>.

Product data

Typical general characteristics ^{Δ)}	Inspection Method	Value
Hardness Shore A	ISO 7619-1	20
Density	DIN EN ISO 1183-1 A	1,09 g/cm ³
Tensile strength	ISO 37 Type 1	> 7,00 N/mm ²
Elongation at break	ISO 37 Type 1	> 800 %
Tear strength	ASTM D 624 B	> 25 N/mm
Tear strength	DIN ISO 34-1-A	> 8 N/mm
Rebound resilience	ISO 4662	50 %
Compression set	DIN ISO 815-1 Type B (22 h / 175 °C)	<25 %

Further typical characteristics ^{Δ)}	Inspection Method	Value
LOI-value	EN ISO 4589-2 / ASTM D2863	23 %
Dielectric strength	IEC 60243-1	16 kV/mm
Volume resistivity	IEC 62631-3-1	8,1 10 ¹⁵ Ω cm
Dielectric constant (50 Hz)	IEC 60250	2,8 ε _r
Dissipation factor (50 Hz)	IEC 60250	3 x 10 ⁻⁴ tan δ

^{Δ)} All values were generated from the average of samples built in the flat orientation (XY). Test specimens were die-cut from postcured test plaques.

These figures are only intended as a guide and should not be used in preparing specifications.

The data presented in this medium are in accordance with the present state of our knowledge but do not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this medium should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The information provided by us does not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the product for a particular purpose.

The management system has been certified according to DIN EN ISO 9001 and DIN EN ISO 14001

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