

SUSTARIN C GLD 350 - a new sliding material for extreme operating conditions

Sliding materials are an integral part of the product program of Röchling Sustaplast. Until now, the star of this material type has been **SUSTAGLIDE**. With **SUSTARIN C GLD 350**, Röchling Sustaplast has now developed a modification with excellent sliding properties, which are unique in the market.

Through an innovative tribological modification of our reliable sliding material **SUSTARIN C** it was possible to improve the sliding- and wear properties remarkably, also in comparison to **SUSTARIN C GLD 160** (previously: **SUSTARIN C TF**).

Additionally, **SUSTARIN C GLD 350** has the POM-typical advantages over other classical sliding materials. **SUSTARIN C GLD 350** has higher impact resistance than PET and higher mechanical strength and lower thermal expansion than PE. The water absorption is much lower when compared to PA. This makes it possible to manufacture components, which are also used in high humidity environments. Contact with hot water, as well as using the material in extreme low temperatures, does not harm the material. Therefore, using components made of **SUSTARIN C GLD 350** is beneficial not only in the classical sliding applications in the machine building industry, but also in industrial cleaning plants or in cooling chamber environments.

Technical characteristics

Eigenschaft	SUSTARIN C GLD 350 NEW	Other types of POM C with modified sliding properties
E-modulus (MPa)	2.150	2.000 - 2.400
Tensile strength (MPa)	45	35 - 52
Elongation at break (%)	10	8 - 15
Density (g/cm ³)	1,33	1,34 - 1,52

Despite the remarkable tribological improvements, the material has retained the mechanical properties, which are typical for modified polyacetals.

Pin-on-disk-test

Material	Wear rate, $\mu\text{m}/\text{Km}$	Coefficient of friction, kinetic	Coefficient of friction, static
SUSTARIN C GLD 160	2,66	0,28 - 0,31	0,15 - 0,19
SUSTARIN C GLD 350 NEW	1,39	0,24 - 0,29	0,23 - 0,24

(All values determined by the pin-on-disk-test under the following conditions: Polymer pin: dia. 6 mm | steel disk 100 Cr6, dia. 110 mm, surface roughness $R_p = 0,3-0,6$, $R_a = 0,08-0,12$ | sliding speed 0,3 m/s | pressure: 3 MPa | temperature 21°C +/- 3°C | no lubricants)

The table shows the values determined by the pin-on-disk-test.

The most remarkable findings:

- © extremely low wear
- © lower kinetic friction coefficient and thereby lower energy demand for technical sliding movements
- © low dispersion of kinetic and static friction coefficient and for this reason a very uniform sliding behaviour
- © basically no tendency for stick-slip, because the static friction coefficient is smaller or almost identical with the kinetic friction coefficient

Production possibilities SUSTARIN C GLD 350 NEW

Colour	natural/black/blue/green
Rods	8 - 200 mm (\varnothing)
Plates	6 - 100 mm (thickness)
Sheets (1.000 x max. 3.000 mm)	8 - 100 mm (thickness)
Sheets (1.250 x max. 3.000 mm)	15 - 50 mm (thickness)
Tubes	on request

SUSTARIN C GLD 350 has a density of 1,33 g/cm³, which makes it 15 % lighter than the previous sliding material of the **SUSTARIN**-family, the Teflon-filled **SUSTARIN C GLD 160**, which weights notably more with a density of 1,52 g/cm³.

Product overview Sliding materials

Modified materials, especially for sliding applications.

Polyamide	Polyacetal
SUSTAGLIDE	SUSTARIN C GLD 160
SUSTAGLIDE PLUS	SUSTARIN C GLD 350 NEW
SUSTAGLIDE HI	Polyethylene terephthalate
SUSTAMID 6G OL	SUSTADUR PET GLD 130
SUSTAMID 6G M	Polyetheretherketone
SUSTAMID 6G M OL	SUSTAPEEK MOD
SUSTAMID 66 GLD 240	SUSTAPEEK GLD 160

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