

SIGRAFLEX® military grade yarns

High-strength graphite yarns with special coatings for compression packings used in military applications

Materials used to manufacture military application products are required to exhibit superior properties and meet the highest standards with regards to purity, chemical, oxidation, and temperature resistance – ensuring extreme safety, reliability and longevity of the final product. SGL Carbon's experience and expertise is gained over the last 50 years in developing and producing compression packing yarns.

Our broad yarn portfolio with a variety of precursor materials, yarn plies, twists and coatings allow SGL Carbon to supply special yarns suitable for military applications, too.

Depending on the specific application we offer both continuous filament graphite PAN and graphite rayon yarns which are certifiable e.g. to the latest US Navy specification MIL-P-24583B.

Material data of SIGRAFLEX® military grade continuous filament graphite PAN yarns¹⁾

Typical values of yarn grade

Properties	Test methods	Units	GPC02S01ML15	GPC04S01ML15	GPC08S01ML10
			GPC02Z01ML15	GPC04Z01ML15	GPC08Z01ML10
Base material			PAN	PAN	PAN
Coating			Military	Military	Military
Coating content	ASTM D1907	%	15	15	10
Carbon content ²⁾	ASTM D5373	%	99.5	99.5	99.5
Ash content ²⁾	ASTM C561	%	0.1	0.1	0.1
Moisture content	ASTM C562	%	0.3	0.3	0.3
Total sulfur content	ASTM D4239	ppm	< 100	< 100	< 100
Total chlorine content	ASTM D4327	ppm	< 10	< 10	< 10
Total fluorine content	ASTM D4327	ppm	< 10	< 10	< 10
Total halogen content	ASTM D4327	ppm	< 20	< 20	< 20
Break strength	ASTM D2256	kg [lb]	9 [20]	23 [50]	45 [100]
Density	ASTM D3800	g/cm ³	1.5	1.5	1.6
Linear weight	ASTM D1907	g/m	0.2	0.4	0.9
Base yarn weight	ASTM D1907	g/m	0.2	0.4	0.8
Twist	ASTM D1423	TPI (TPM)	1.8 [71]	1.3 [51]	1.3 [51]
Available twists			S, Z	S, Z	S, Z
# of plies			1	1	1

¹⁾ Each twisted yarn grade is available in both S (clockwise) and Z (counter-clockwise) twist. ²⁾ Base yarn without coating.

Other yarn weights/sizes and coating contents are available on request. Please contact us.

Unless stated otherwise, all values are measured in accordance with referenced test methods, typical, non-binding and nominal. They may be subject to change and do not constitute an actual specification value. For engineering or design purposes please contact our technical sales team.

Additional information on our SIGRAFLEX sealing materials can be found under www.sigraflex.com/downloads on our homepage.



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