

STELLITE 20

STELLITE™ 20 ALLOY

TECHNICAL DATA

CASTINGS & POWDER METALLURGY | TIG & OXY-ACETYLENE WELDING | MMA WELD DEPOSITION | PTA WELD DEPOSITION | SPRAY & FUSE

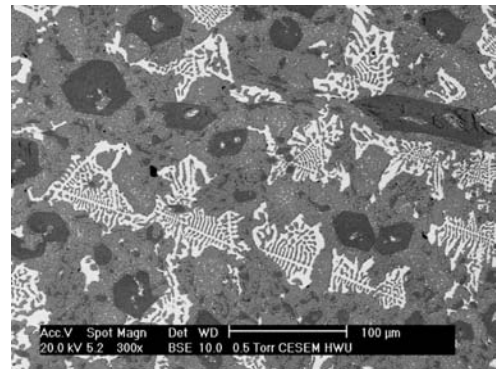
NOMINAL COMPOSITION (MASS %) AND PHYSICAL PROPERTIES

Co	Cr	W	C	Ni	Others	Hardness	Density	Melting Range
Base	32.5	17.5	2.5	<2.0	Mo, Fe, Si	53-62 HRC	8.77 g/cm ³ 0.317 lb/in ³	1263-1301°C 2305-2374°F

STELLITE™ COBALT-BASED ALLOYS consist of complex carbides in an alloy matrix. They are resistant to wear, galling, and corrosion and retain these properties at high temperatures. Their exceptional wear resistance is due mainly to the unique inherent characteristics of the hard carbide phase dispersed in a CoCr alloy matrix.

STELLITE 20 is one of the most abrasion-resistant standard cobalt-base alloys. It also has good corrosion resistance. While it has low shock resistance, it is often the only answer for some environments where chemical resistance, in addition to abrasion resistance, is required.

STELLITE 20 has been used in slurry pumps, pump sleeves, rotary seal rings, wear pads, and bearing sleeves.



Stellite 20 microstructure at 300x magnification.

NOMINAL TENSILE PROPERTIES AT ROOM TEMPERATURE

	Ultimate Tensile Strength Rm		Yield Stress Rp (0.2%)		Elongation
	ksi	MPa	ksi	MPa	A(%)
Casting	80	550	near UTS		<1%

NOMINAL THERMAL EXPANSION COEFFICIENT (FROM 20°C/68°F TO STATED TEMPERATURE)

	100°C (212°F)	200°C (392°F)	300°C (572°F)	400°C (752°F)	500°C (932°F)	600°C (1112°F)	700°C (1292°F)	800°C (1472°F)	900°C (1652°F)
µm/m.K	10.01	10.46	10.8	11.23	11.65	12.06	12.53	12.89	13.41
µ-inch/inch.F	5.56	5.81	6.00	6.24	6.47	6.7	6.96	7.16	7.45

NOMINAL HOT HARDNESS (DPH)

	20°C (68°F)	100°C (212°F)	200°C (392°F)	300°C (572°F)	400°C (752°F)	500°C (932°F)	600°C (1112°F)	700°C (1292°F)	800°C (1472°F)	900°C (1652°F)
Casting	670	600	552	516	476	441	412	340	245	132

AVAILABLE PRODUCT FORMS:

STELLITE 20 is available as a casting, powder metallurgy components, rod, and powder.

Kennametal Stellite manufactures sophisticated alloys in the form of castings, powders, coatings, consumables, and machined parts that resist wear, corrosion, and abrasion. Information provided in this document is intended only for general guidance about Kennametal Stellite products and is the best information in our possession at the time. Product users may request information about their individual use of our products, but Kennametal Stellite does not warrant or guarantee this information in any way. Selection and purchase of Kennametal Stellite products is the sole responsibility of the product user based on the suitability of each use. Individual applications must be fully evaluated by the user, including compliance with applicable laws, regulations, and non-infringement. Kennametal Stellite cannot know or anticipate the many variables that affect individual product use, and individual performance results may vary. For these reasons, Kennametal Stellite does not warrant or guarantee advice or information in this document, assumes no liability regarding the same, and expressly disclaims any warranty of any kind, including any warranty of fitness for a particular purpose, regarding the same.

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