

STELLITE 19

STELLITE™ 19 ALLOY

TECHNICAL DATA

CASTINGS | POWDER METALLURGY

NOMINAL COMPOSITION (MASS %) AND PHYSICAL PROPERTIES

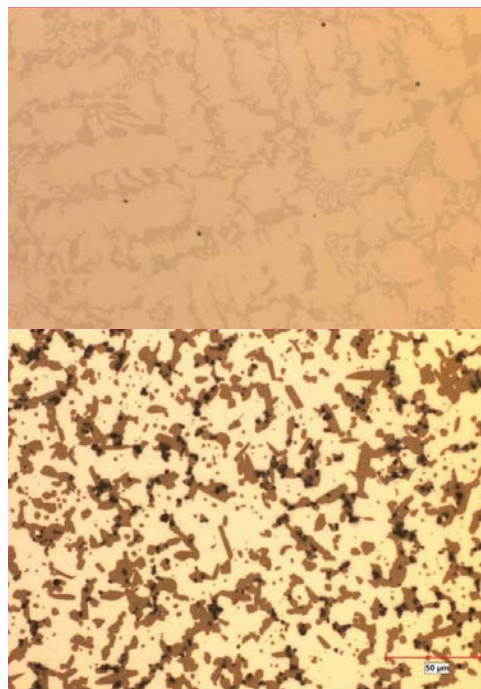
Co	Cr	W	C	Si	Others	Hardness	Density	Melting Range
Base	31	10.5	1.9	1.0	Ni, Fe	51-53 HRC	8.36 g/cm ³ 0.302 lb/in ³	1239-1299°C 2263-2370°F

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 19 is resistant to severe shock and has excellent red-hardness for applications such as cutting tools, machinery parts, high temperature bearing races, nozzle discs, and burnishing rollers.

One of the outstanding properties of **STELLITE 19** is its ability to remain hard at red heat. This denotes a range of temperatures from 932 to 1562°F. **STELLITE 19** has impact resistance that is comparable to high-speed steels but has much higher red hardness.

STELLITE 19 can be used at higher speeds than high-speed steels. Its excellent resistance to corrosion from many common chemicals combined with its abrasion-resistant qualities makes the use of this alloy economical for machining such materials as plastics and rubber, which liberate corrosives that are used in their manufacture.



Stellite 19 PM (top) & Cast (bottom) microstructure

NOMINAL TENSILE PROPERTIES AT ROOM TEMPERATURE

	Ultimate Tensile Strength Rm		Yield Stress Rp (0.2%)		Elongation
	ksi	MPa	ksi	MPa	A(%)
Casting	105	725	near UTS		<1%
Powder Metallurgy	150	1035	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)	1000°C (1832°F)
µm/m.K	12.78	12.96	13.68	13.86	14.22	14.22	14.76	15.12	15.66	16.92
µ-inch/inch.F	7.1	7.2	7.6	7.7	7.9	7.9	8.2	8.4	8.7	9.4

NOMINAL HOT HARDNESS (HRC)

	20°C (68°F)	93°C (200°F)	204°C (400°F)	316°C (600°F)	427°C (800°F)	538°C (1000°F)	649°C (1200°F)	760°C (1400°F)	871°C (1600°F)
Casting	58	56	54	52	50	47	45	39	27

AVAILABLE PRODUCT FORMS:

STELLITE 19 is available as a casting and powder metallurgy components.

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.

SALES OFFICE - COMPONENTS

Kennametal Stellite
471 Dundas St. East
Belleville, Ontario
K8N 1G2
Canada
T: 1 613 968 3481
F: 1 613 966 8269
E-mail: k-blvl.service@Kennametal.com

SALES OFFICE - WELDING CONSUMABLES

Kennametal Stellite
1201 Eisenhower Drive N
Goshen, Indiana
46526
USA
T: 1 574 534 2585
F: 1 574 534 3417
E-mail: k-gshn.service@Kennametal.com

