

STELLITE 694

STELLITE™ 694 ALLOY

TECHNICAL DATA

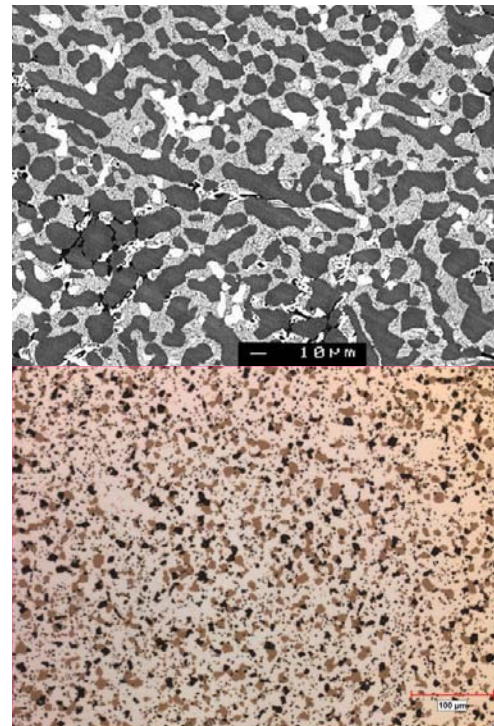
CASTINGS & POWDER METALLURGY | TIG WELDING | PTA & LASER WELD DEPOSITION

NOMINAL COMPOSITION (MASS %) AND PHYSICAL PROPERTIES

Co	Cr	W	Ni	C	Others	Hardness	Density	Melting Range
Base	28.5	19.5	5.0	0.9	V, Fe, Si, Mn	44-50HRC	9.02 g/cm ³ 0.326 lb/in ³	1237-1296°C 2259-2365°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 694 is a cobalt-chromium alloy which has a high tungsten content to ensure high matrix strength at elevated temperatures (up to 1148°C or 2100°F). This alloy exhibits good resistance to wear, creep, erosion, thermal fatigue, and oxidation. The principal application is for hard-facing turbine blade interlock surfaces. Used in gas turbine parts where a higher hardness than **STELLITE 31** is required.



Stellite 694 microstructure, Cast (top), PM (bottom)

NOMINAL TENSILE PROPERTIES AT ROOM TEMPERATURE

	Ultimate Tensile Strength Rm		Yield Stress Rp (0.2%)		Elongation
	ksi	MPa	ksi	MPa	A(%)
Powder Metallurgy	120	830	90	620	3

NOMINAL THERMAL EXPANSION COEFFICIENT (FROM 21°C/70°F TO STATED TEMPERATURE)

	204°C (400°F)	538°C (1000°F)	649°C (1200°F)	760°C (1400°F)	871°C (1600°F)	982°C (1800°F)
μ-inch/inch.F	7.0	7.8	8.1	8.4	8.9	9.7

TYPICAL HOT HARDNESS (DPH)

21°C (70°F)	427°C (800°F)	538°C (1000°F)	649°C (1200°F)	760°C (1400°F)
440	355	320	310	220

AVAILABLE PRODUCT FORMS:

STELLITE 694 is available as a casting, powder metallurgy components, solid welding wire, and powder.

SPECIFICATION	PRODUCT FORM
B50TF55	Solid Wire

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