IN718-RAM2 (High Temperature Strength and Corrosion Resistant)

Product Information

Elementum 3D's IN718-RAM2 nickel superalloy offers excellent mechanical strength and creep resistance at high temperatures, good surface stability, and corrosion and oxidation resistance, while maintaining high strength, hardness, and wear. IN718-RAM2 is targeted towards aerospace and power industry applications such as turbine blades and jet/rocket engines, industrial gas turbines heat exchangers and nuclear components.

Physical and Chemical Properties

Material composition: Proprietary IN718 with 2% ceramic

Theoretical maximum density: 8.1 g/cc

Printed relative density: 99.5 %

Ultimate tensile strength[1]: 224 ksi (1545 MPa)

Yield strength[1]: 181 ksi (1269 MPa)

Elongation[1]: 8.1 %

Hardness[2]: 45 HRC

Modulus of elasticity[1]: 29.2 ± Msi (201 GPa)

Elevated Temperature Testing:

Testing temperature		Ultimate tensile Strength		Yield strength		Modulus of elasticity		Elongation
°C	°F	MPa	ksi	MPa	ksi	GPa	Msi	%
25	**77**	[1]**1545**	**224**	[1]**1269**	**181**	[1]**201**	**29.2**	**8.1**
760	1400	[2]793	115	[2]695	101	[2]144	20.9	14.6
870	1598	[2]333	48	[2]300	44	[2]128	18.6	27.6
980	1796	[2]126	18	[2]105	15	[2]93	13.5	64.0

[1]ASTM E8, [2]AMS 5664

All stated values are approximate values. All details given above are our current knowledge and experience, and are dependent on the equipment, parameters, and operating conditions. The data provided in this document is subject to change and only intended as general information on a material set that is continually improving and developing. The data does not provide a sufficient basis for engineering parts. All samples were produced on an EOS M290. All tensile tests were performed at PES, a third-party certified test lab.

Please contact us at sales@elementum3d.com for additional information.