

## INCONEL 718

### HEAT RESISTANT DIRECT METAL LASER SINTERING MATERIAL

**DESCRIPTION:**

NICKELALLOY IN718 IS A NICKEL BASED HEAT RESISTANT ALLOY IN FINE POWDER FORM. THIS KIND OF PRECIPITATION-HARDENING NICKEL-CHROMIUM ALLOY IS CHARACTERIZED BY HAVING GOOD TENSILE, FATIGUE, CREEP AND RUPTURE STRENGTH AT TEMPERATURES UP TO 700°C. 718 ALLOY HAS ALSO OUTSTANDING CORROSION RESISTANCE IN VARIOUS CORROSIVE ENVIRONMENTS. IN BOTH AS-BUILT AND AGEHARDENED STATES THE PARTS CAN BE MACHINED, SPARK-ERODED, WELDED, MICRO SHOT-PEENED, POLISHED AND COATED IF REQUIRED

**APPLICATIONS:**

THIS MATERIAL IS IDEAL FOR MANY HIGH TEMPERATURE APPLICATIONS SUCH AS GAS TURBINE PARTS, INSTRUMENTATION PARTS, POWER AND PROCESS INDUSTRY PARTS ETC. MATERIAL ALSO POSSESS EXCELLENT CRYOGENIC PROPERTIES AND POTENTIAL FOR CRYOGENIC APPLICATIONS.

**TYPICAL APPLICATIONS:**

- AERO AND LAND BASED TURBINE ENGINE PARTS
- ROCKET AND SPACE APPLICATION COMPONENTS
- CHEMICAL AND PROCESS INDUSTRY PARTS
- OIL WELL, PETROLEUM AND NATURAL GAS INDUSTRY PARTS



### SERVICES AVAILABLE

- PRODUCT DESIGN
- RAPID PROTOTYPING
- SLA
- FRSLA
- POLYJET
- SLS
- DMLS**
- FDM
- PLASTIC CASTING
- CNC MACHINING
- INJECTION MOLD TOOLING
- RAPID TOOLING
- PRODUCTION TOOLING
- INJECTION MOLDING
- METAL CASTING

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PROPERTY	ISO	METRIC UNITS		
		AS BUILT	AMS 5662	AMS 5664
ULTIMATE TENSILE STRENGTH	6892	980 MPA	1400 MPA	1384 MPA
0.2% YIELD STRENGTH	6892	634 MPA	1150 MPA	1239 MPA
ELONGATION	6892	31 %	12 %	12 %
HARDNESS, ROCKWELL C	6508-1	30	47	43

Heat treatment procedure per AMS 5662: Step1. Solution Anneal at 980°C for 1 hour, air (/argon) cool.  
Step 2. Ageing treatment; hold at 720°C 8 hours, furnace cool to 620°C in 2 hours, hold at 620°C 8 hours, air (/argon) cool.  
Heat treatment procedure per AMS 5664: Step1. Solution Anneal at 1065°C for 1 hour, air (/argon) cool.  
Step 2. Ageing treatment; hold at 760°C 10 hours, furnace cool to 650°C in 2 hours, hold at 650°C 8 hours, air (/argon) cool

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