

DirectAlloy™ 155 Metal Laser Sintering Process (UNS S15500)

DirectAlloy™ 155 is a metal laser sintering process that produces 99.9% dense parts characterized by high strength and corrosion resistance. DirectAlloy 155 parts are processed in an inert nitrogen environment and are suitable for many prototype and production applications where a martensitic stainless steel is desirable. Mechanical properties from the DirectAlloy 155 metal laser sintering process yield properties similar to Condition A 15-5PH and can be heat treated to improve strength and hardness with a simple heat treat processes such as H900.

DirectAlloy 155 parts can be used for prototype and production medical devices and surgical instruments where passivation is necessary. DirectAlloy 155 parts are suitable for many aerospace, petrochemical, food processing, and general industrial applications.

Chemical Composition (wt%)		
	Range	
Element	Minimum	Maximum
C		0.07
Cr	14.00	15.50
Nb+Ta	0.15	0.30
Cu	3.25	4.00
Fe	Balance	Balance
Mn	0.25	0.75
Mo		0.75
Ni	4.00	4.50
P		0.025
Si		0.75
S		0.025



Mechanical properties (min. value) after H900

Tensile Strength, Mpa (Ksi) X,Y Build Direction	Tensile Strength Mpa (Ksi), Z Build Direction	Yield Strength at 0.2% Offset Mpa (Ksi), X,Y Build Direction	Yield Strength at 0.2% Offset Mpa (Ksi), Z Build Direction	Elongation in 5 cm or 4D (%) X, Y Build Direction	Elongation in 5 cm or 4D (%) Z Build Direction
1310	1310	1170	1170	10	10
(190)	(190)	(170)	(170)		