

m4p Ni-X

Ni base for laser-based powder bed fusion

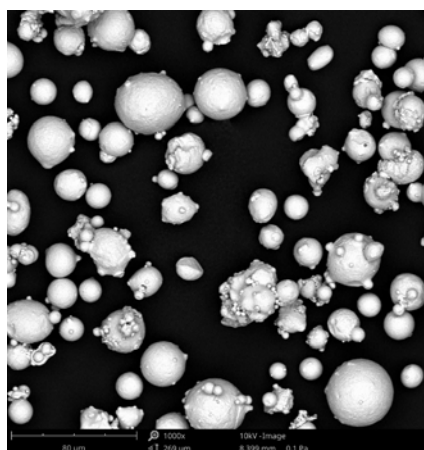
Description, properties and application

m4p™ Ni-X is a powdered nickel-chromium-iron-molybdenum alloy that is characterized by high **oxidation resistance** and **high-temperature strength**, with particular emphasis on the combination of both properties. Thanks to its excellent resistance to stress corrosion in applications of the petrochemical industry **m4p™ Ni-X** also represents a proven alternative to the widely used alloy Inconel-718 (m4p™ Ni-718).

The material properties that are primarily based on solid solution hardening enable the material to be used at operating temperatures of up to 1200°C, which is why the material is used in the manufacturing of components in gas turbines and industrial furnaces as well as in chemical processing.

By means of downstream heat treatment - e.g. solution annealing - or hot isostatic pressing (HIP), the material properties can be further influenced and the component optimized with regard to the application requirements.

Powder characteristics



Chemical analysis [wt%]

Element	Min	Max
C	0,05	0,15
Si		1,0
Mn		1,0
Fe	17,0	20,0
Mo	8,0	10,0
Cr	20,5	23,0
W	0,2	1,0
Al		0,5
Co	0,5	2,0
Ni	Balance	

other limited elements: B, Cu, S, P, O, N

Material characteristics

Mechanical properties			
	Tensile strength Rm [N/mm²]	Yield strength Re [N/mm²]	Elongation at break A ₅ [%]
as-built - Z	650 – 850	550 – 650	15 – 30

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