

m4p Fe-2343

Tool steel powder for laser-based powder bed fusion

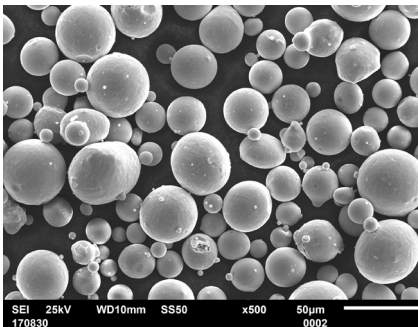
Description, properties and applications

m4p™ Fe-2343 is a metal powder which can be assigned to tool steels because of its chemical composition. In the powder manufacturing process special actions are taken to enable the additive processability of this high-carbon tool steel using „conventional“ equipment (as-built platform temperatures <200 °C). For this purpose, the powder is atomized with argon and specifically adjusted to a high degree of purity and an optimum grain shape on the process side.

As a result of the martensitic hardening, high hardness values of approx. 48HRC are achieved in the as-built state, which already correspond to a hardened state. The hardening can be regulated by repeated tempering and can be increased to 52-56HRC using a secondary hardness maximum.

m4p™ Fe-2343 is used in many areas of tool manufacturing and mold construction applications. Good toughness properties, high heat resistance and good thermal conductivity are conditions for applications at injection molding and die casting - but also for general tools, knives or extrusion dies. For the production of large-volume components, a hybrid built way is recommended.

Powder characteristics and strength properties



Chemical analysis [wt%]

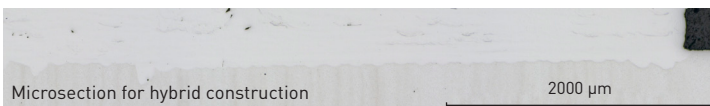
Element	Min	Max
C	0,30	0,45
Si	0,80	1,20
Mn	0,25	0,50
Cr	4,80	5,50
Mo	1,10	1,50
V	0,25	0,50
Fe	Base	

Typical characteristics of the tensile test (as-built, 99,88% rel. density)

Tensile strength	R _m =	1658 MPa ± 106
Elongation at break	A =	6,1% ± 2,9
Hardness	=	495 HV ± 11

* further characteristics (as-built, heat-treated), heat treatment parameters and instructions available on request

Hybrid construction



Construction: m4p™ Fe-2343

Base material: 1.2343

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