MakerVerse

Data Sheet: Tooling Steel MS1 (1.2709)[i]

Chemical Composition

Element	Ni	Co	Mo	Ti	C	Si	Mn	P	S	Cr
Percentage	18.00–19.00	8.50–9.50	4.70–5.20	0.50–0.80	0–0.03	0–0.10	0–1.00	0–0.01	0–0.01	0–0.25

Properties

As built

Property	Yield strength R_p 0.2 % [MPa][ii]	Ultimate tensile strength R_m [MPa][ii]	Elongation at Break [%][ii]	Young's Modulus [GPa][ii]	Relative Density [%]
Value	950-1200	1000-1300	>6	125-175	>99.5%

Heat treated

Property	Yield strength R_p 0.2 % [MPa][ii]	Ultimate tensile strength R_m [MPa][ii]	Elongation at Break [%][ii]	Young's Modulus [GPa][ii]	Relative Density [%]
Value	1800-2010	1850-2050	>1	160-200	>99.5%

Tolerances

Property	Value as built	Unit
Achievable Part Accuracy[iii]	+/- 0.3 mm for parts up to 100 mm +/- 0.3 % for parts beyond 100 mm	mm/%
Min. Wall thickness	0.8	mm

[i] The data from finished parts can deviate from above values depending on the manufacturing process and the component geometry. The data represents our present empirical values. It is incumbent on the person placing the order to examine whether it is suitable for its intended purpose, before using the product. The default postprocessing for this material is support removal and blasting.

[ii] Depending on build direction

[iii] As a result of the part's geometry, strong tensions may cause distortion in the part which may lead to greater deviation.