

ONE CLICK METAL

TOOL STEEL 1.2709

MATERIAL
DATA SHEET

www.impactsystems.com

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Tool Steel 1.2709

The tool steel 1.2709 is versatile and is characterised by high elongation and yield strengths. This makes 1.2709 particularly suitable for the production of tool inserts and innovative mould constructions with integrated near-contour cooling for injection moulding and die casting technology. Components made from tool steel 1.2709 can be easily machined after completion as well as hardened. Even after the hardening process, the components can be mechanically reworked, welded, blasted, polished or coated. The material 1.2709 is used in various industries such as aerospace, automotive, prototyping, toolmaking, series production and other industrial applications that place high demands on the component.

Properties

- Easily machinable
- Thermally hardenable up to approx. 54 HRC
- Good thermal conductivity

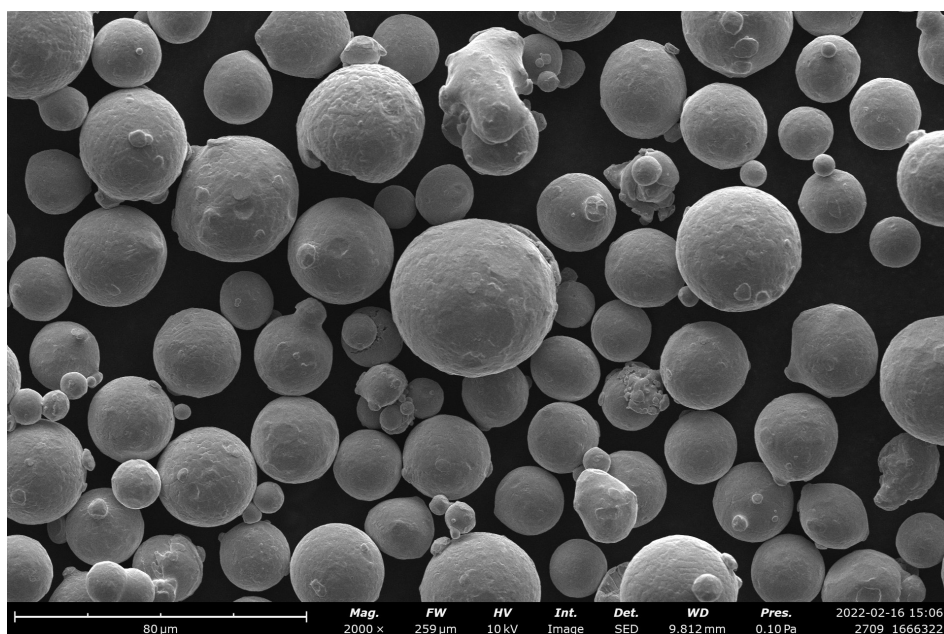
Application example

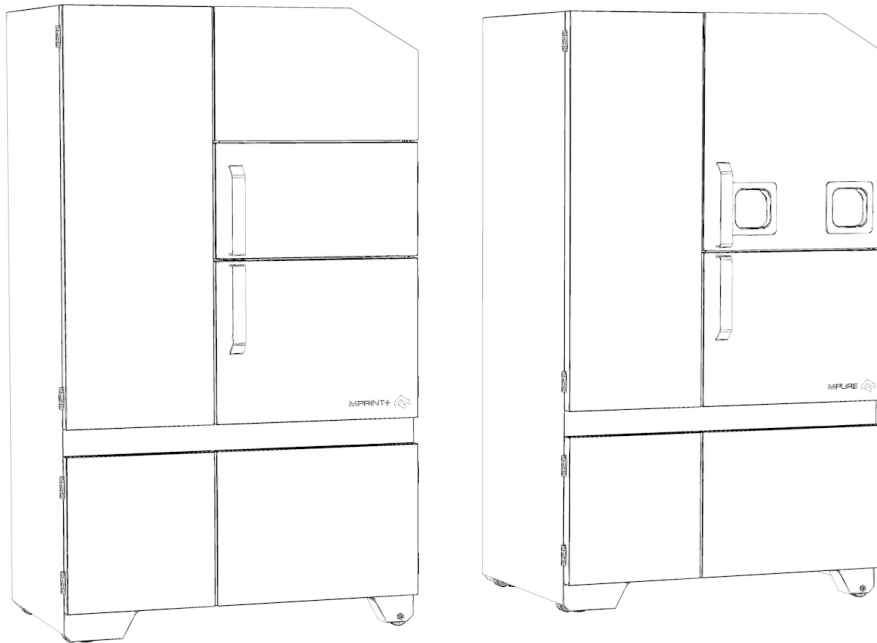
- Injection moulding tools and their applications
- Pressure die-casting tool applications
- Functional prototypes
- Small series production
- Individualized products and spare parts
- Components that require particularly high strength and/or rigidity

Powder Properties

Powder chemical composition (wt.-%)

Element	Min.	Max.
Fe	Basis	
Cr	<0,30	
Ni	17.0	19.0
Mo	4.5	5.2
Ti	0.5	1.2
Co	8.5	10.0
Al	<0.15	
C	<0.03	
Si	<0.10	
Mn	<0.15	

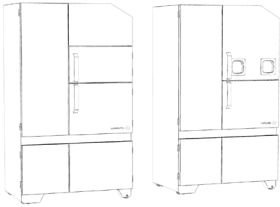




Process Information

The powder tool steel 1.2709 provided by One Click Metal is optimized for the production of robust components with MPRINT+ and MPURE of the BOLDseries.

System set-up	MPRINT+
Parameter	1.2709 20µm
Software	Netfabb, MPREP
Powder part-no.	MSUPPLY 1.2709
Layer thickness	20µm
Coater	X-lip
Inert gas	Nitrogen
Sieve	63µm



Physical & mechanical properties

Thanks to simple heat treatment, the tool steel 1.2709 combines excellent hardness with simultaneous strength.

Physical properties

Defects	Result
Average defect [%]	<0.5

Surface quality (measured along the z-axis)

As built	Ra [µm]	4
	Rz [µm]	25
Blasted	Ra [µm]	4
	Rz [µm]	24

Mechanical properties ISO6892-1

Vertical	Tensile strength R_m [MPa]	Elongation at break A [%]	Reduction of area Z [%]
Average	1152	10	51
Standard deviation absolute	18	2	8
Standard deviation percentage	2	17	16