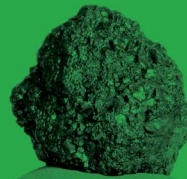


RioTinto



ATOMET™ 1025

Steel Powder
for Additive
Manufacturing



- Low carbon steel powder designed for Additive Manufacturing
- Good flowability through powder nozzle and good spreadability in powder bed
- Suitable for different Additive Manufacturing Technologies
- To additively manufacture parts with mechanical properties superior to conventional methods
- Additional Additive Manufacturing steel powder grades in development

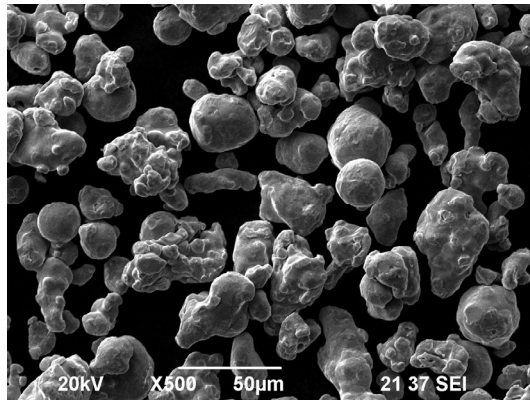
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ATOMET 1025 - Chemical composition

Fe	C	Mn	Si
Bal.	0.2-0.35	0.7-0.9	0.15-0.25

Additively manufactured (LPBF) and heat treated samples using ATOMET 1025* compared to similar standard grades

	YS (MPa)	UTS (MPa)	Elong. (%)	Charpy V-notch (J)
ATOMET 1025	385	525	30	100
ASTM A105	>250	>485	>22	40
DIN 1.0460	>240	410-540	>25	44
Grey cast iron (C50)	-	431	-	-

*Powder carbon content = 0.35 wt.%

Coming soon ATOMET 4340

Chemical composition

C	Mn	Si	Ni	Cr	Mo
0.38-0.43	0.60-0.80	0.15-0.35	<2.00	0.70-0.90	0.2-0.3

Typical mechanical properties of AISI 4340 Quenched and Tempered

YS (MPa)	UTS (MPa)	Elong. (%)	Charpy V-notch (J)	Hardness (HB)
≥ 1150	≥ 1200	≥ 14	47	≥ 350