

ATOMET 1025

ATOMET 1025 is a water atomized low carbon steel powder suitable for different additive manufacturing applications.

EQUIVALENT STANDARD GRADES

ASTM A105, DIN 1.0460

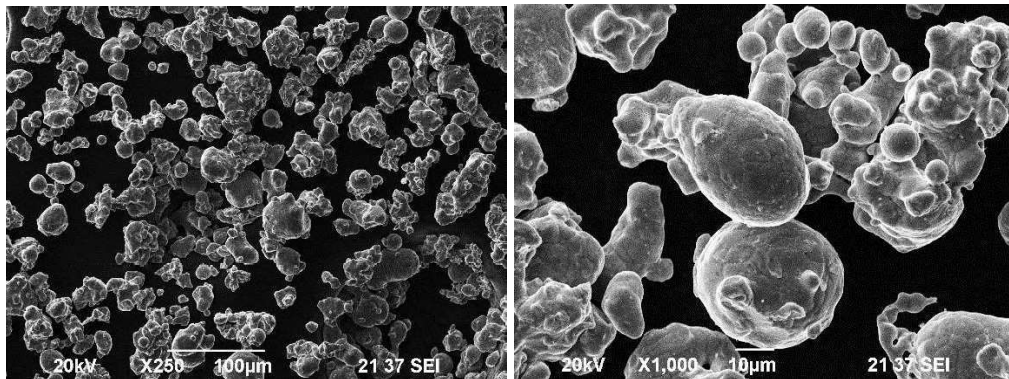
TYPICAL CHEMICAL COMPOSITION (%w)

Carbon	0.20-0.35%
Manganese	0.70-0.90%
Silicon	0.15-0.25%

TYPICAL PARTICLE SIZE DISTRIBUTION

Grade	D ₁₀ (µm)	D ₅₀ (µm)	D ₉₀ (µm)	Application
1025 A	20	40	60	Laser Powder Bed Binder Jetting Cold Spray
1025 D	45	80	130	E-Beam AM Direct Energy Deposition

Physical properties of the powder are available upon request.



Rio Tinto, Metal Powders

1655 Marie-Victorin
Sorel-Tracy, QC J3R 4R4
Canada
T: +1 450 746 5050
F: +1 450 743-0223

Amin Molavi Kakhki
amin.molavi-kakhki@riotinto.com

ATOMET 1025

ADDITIVELY MANUFACTURED (LPBF) SAMPLES USING ATOMET 1025

The following technical data are provided for information purposes only. The complete operation parameter sets resulting in these properties can be provided for EOS M290 and Concept Laser M2 Dual machines.

Heat Treatment¹

Type	Temperature	Dwell time	Quenching medium
Normalizing	900 (°C)	2 hours	Air

Mechanical Properties^{2,3}

STD	Properties	Unit	Orientation ⁴		
			0°	45°	90°
ISO 6892	Ultimate Tensile Strength	(MPa)	427±2	427±2	423±2
	Yield Strength	(MPa)	341±6	341±7	339±7
	Elongation	(%)	40±2	41±1	37±2
	Reduction of area Z	(%)	70±2	73±3	62±5
ISO 148-1	Charpy-V	(J)	126±6	138±8	106±7
ISO 6506-1	Hardness Brinell (HB)	-	125		

¹ Heat treatment could be optimized based on target mechanical properties.

² Powder carbon content: 0.20 wt.%

³ Relative density of the printed samples ≥ 99.9%

⁴ Build orientation according to VDI 3405