Datasheet
Titanium alloys

Osprey® CP-Ti (Grade 2)

Commercially pure titanium (CP-Ti) consists of 99% titanium with varying amounts of nitrogen, carbon, oxygen, iron, and hydrogen, depending on the grade.

UNS

R50400

ASTM, AISI

F67

Powder designed for

- Additive Manufacturing (AM)
- Hot Isostatic Pressing (HIP)
- Metal Injection Moulding (MIM)

Product description

Commercially pure titanium (CP-Ti) consists of 99% titanium with varying amounts of nitrogen, carbon, oxygen, iron, and hydrogen, depending on the grade. Osprey® CP-Ti are used where high ductility combined with excellent corrosion resistance, moderate strength, and good weldability are desired. Applications are typically found in medical implants as well as for aerospace and chemical processing. Sandvik offers CP-Ti grade 1 and 2 powders in different particle sizes.

Osprey® titanium powder is manufactured to the highest international quality management standards, for example, AS9100D (aerospace) and ISO 13485:2016 (medical).

SANDVIK

Chemical composition (nominal), %

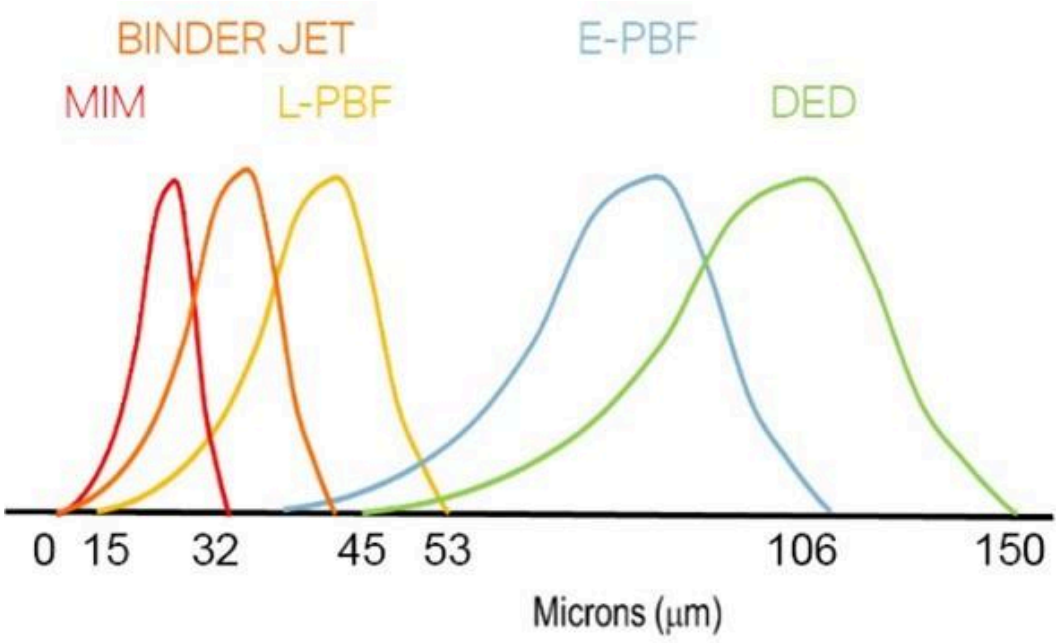
Last updated: Oct 16, 2023 1:19 PM CET

Ti	Bal.
Fe	≤0.3
O	≤0.25
C	≤0.08
N	≤0.03
H	≤0.015

Particle size distribution

Powder for Additive Manufacturing

Osprey® metal powder for Additive Manufacturing is available in a wide range of particle size distributions that are tailored to the individual Additive Manufacturing systems. They can also be tailored to the particular requirements of the end application, both in terms of mechanical performance and surface finish.



Typical particle size distributions for Additive Manufacturing.

Typical particle size distributions for Additive Manufacturing	
Process technology	Size (µm)
Binder jetting	≤ 16, ≤ 22, ≤ 32, ≤ 38, ≤ 45
Laser - Powder Bed Fusion (L-PBF)	15 to 53 and 10 to 45
Electron beam - Powder Bed Fusion (E-PBF)	45 to 106
Direct Energy Deposition (DED)	53 to 150

Powder for Hot Isostatic Pressing (HIP)

Osprey® powder for Hot Isostatic Pressing (HIP) is available in a broad size range, typically <250 microns, resulting in a high packing density and tap density. Low oxygen levels, together with high packing density, also facilitate faster sintering.

Powder for Metal Injection Moulding (MIM)

Osprey® metal powder for Metal Injection Moulding (MIM) is available in a wide range of particle size distributions, from under 5 µm up to 38 µm. The table shows our standard particle size distributions

for MIM powders.

Typical particle size distributions for Metal Injection Moulding (MIM)*			
Size (µm)	D10 (µm)	D50 (µm)	D90 (µm)
≤ 38	5.5	13.0	31.0
≤ 32	5.0	12.0	29.0
80% ≤ 22	4.5	11.5	27.0
90% ≤ 22	4.0	10.5	22.0
90% ≤ 16	3.5	8.0	16.0

* Particle size measurements performed using a Malvern laser particle size analyzer, typical D10, D50 and D90 provided.

Tailor-made particle size distributions are available on request. Contact us to discuss your specific requirements.

Powder properties

Minimum powder properties values for a Laser - Powder Bed Fusion (L-PBF) cut of 15-53 µm.

Property	Value
Apparent density (g/cm3)	≥ 2.2
Tapped density (g/cm3)	≥ 2.5
Hall flow (s/50g)	≤ 35

Testing

All Osprey® metal powders are supplied with a certificate of analysis containing information on the chemical composition and particle size distribution. Information on other powder characteristics is available upon request.

Packaging

- 5 kg (11 lbs) CurTec plastic bottles

All packaging materials are suitable for air, sea and road freight.

Contact us for more information and to discuss your packaging requirements.