Datasheet
Duplex stainless steels

Osprey® 2707

Osprey® 2707 is a hyper-duplex stainless steel with excellent resistance to SCC, pitting and crevice corrosion. It has high resistance to general corrosion and very high mechanical strength.

UNS

S32707

EN Number

1.4658

Powder designed for

- Additive Manufacturing (AM)
- Hot Isostatic Pressing (HIP)

Product description

Osprey® 2707 is a hyper-duplex (austenitic-ferritic) stainless steel characterized by excellent resistance to stress corrosion cracking (SCC), excellent resistance to pitting and crevice corrosion, high resistance to general corrosion and very high mechanical strength.

Main characteristics of Osprey® 2707

- Excellent resistance to pitting and crevice corrosion
- Excellent resistance to stress corrosion cracking (SCC) in chloride containing environments
- High resistance to general corrosion in acidic environments
- Excellent resistance to erosion corrosion
- Excellent corrosion fatigue properties

- Extremely high mechanical strength
- Physical properties that offer design advantages
- Good weldability

This metal powder is manufactured by Inert Gas Atomization (IGA), producing a powder with a spherical morphology which provides good flow characteristics and high packing density. In addition, the powder has a low oxygen content and low impurity levels, resulting in a metallurgically clean product with enhanced mechanical performance.

Chemical composition (nominal), %

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Fe	Bal.
Cr	27
Ni	6.5
Mo	4.8
C	≤0.030
Si	≤0.5
Mn	≤1.5
P	≤0.035
S	≤0.010
N	0.4
Other	Co 1.0

Powder characteristics and morphology

Powder for Additive Manufacturing

Osprey® metal powder for Additive Manufacturing is characterized by a spherical morphology and high packing density, which confer good flow properties. For powder bed processes these are essential when applying fresh powder layers to the bed to ensure uniform and consistent part build.

For blown powder processes, such as Direct Energy Deposition (DED), good flow ensures uniform build rates. Tight control of the particle size distribution also helps ensure good flowability. Low oxygen powders result in clean microstructures and low inclusion levels in the finished parts.

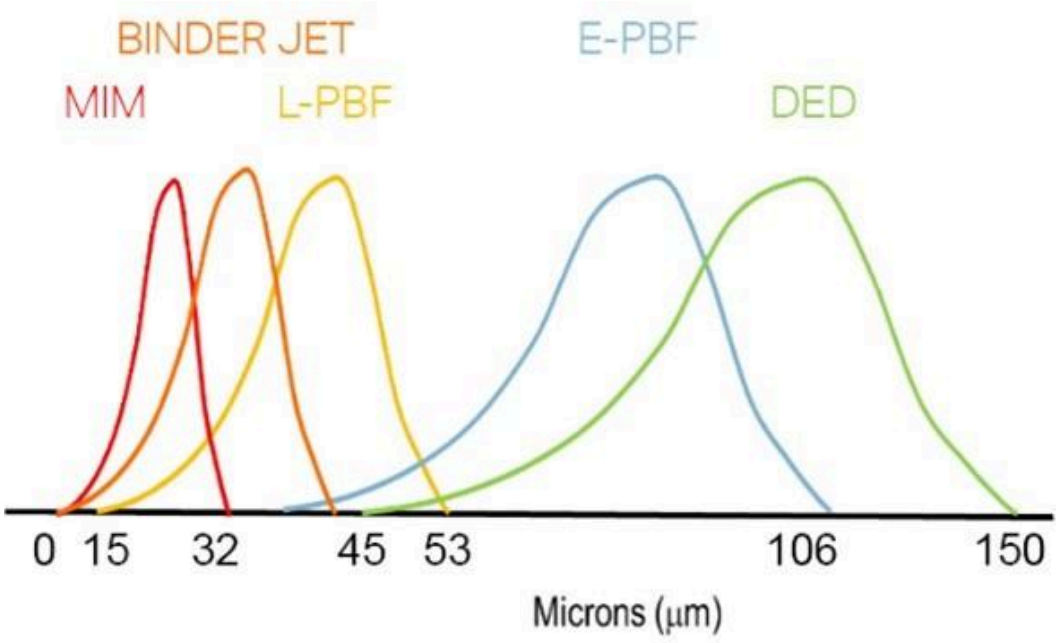
Powder for Hot Isostatic Pressing (HIP)

Osprey® HIP powder has a spherical morphology, resulting in high packing density. In addition, the powder has a low oxygen content and low impurity levels, resulting in a metallurgically clean product with enhanced mechanical performance.

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.

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.

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

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

A wide range of packaging options is available, from 5kgs plastic bottles to 250kg metal drums.

5 kg (11 lbs) Plastic bottles
6 kg (13 lbs) Plastic bottles
10 kg (22 lbs) Plastic bottles
20 kg (44 lbs) Metal cans
100 kg (220 lbs) Steel drums
150 kg (330 lbs) Steel drums
250 kg (551 lbs) Steel drums
All packaging materials are suitable for air, sea and road freight.

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