

# Osprey<sup>®</sup> 718

Osprey<sup>®</sup> 718 is an age-hardenable nickel-chromium superalloy characterized by high strength combined with high corrosion resistance. The alloy has reliable and consistent mechanical properties at elevated temperatures up to ~650°C/~923°F. It is typically used in jet and gas turbines and in oil and gas applications. Osprey<sup>®</sup> 718 is an alloy of the same type as Inconel<sup>®</sup> 718\*.

## Chemical composition (nominal), wt %:

Ni	Fe	Cr	Mo	Nb	Al	Ti
50.0-55.0	Bal.	17.0-21.0	2.80-3.30	4.75-5.50	0.20-0.80	0.65-1.15
C	Mn	Si	P	S	B	Co
≤0.08	≤0.35	≤0.35	≤0.015	≤0.015	≤0.006	≤0.30

- Oxygen & nitrogen levels reported.

This metal powder is manufactured by either induction melting under Vacuum Inert Gas Atomization (VIGA) or melting under argon prior to 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.

## Powder for additive manufacturing

Osprey<sup>®</sup> metal powder for additive manufacturing (3D printing, rapid prototyping) 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. 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.

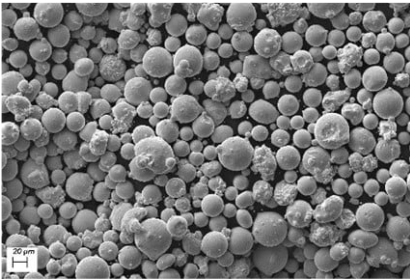


Figure 1; SEM micrographs of a) Osprey<sup>®</sup> 718 powder with a spherical morphology,

## Powder size distribution

- 53 to 15 μm (max 5% >53 μm & max 5% <15 microns)
- D10, D50 & D90 tested by laser diffraction

## Physical Test Data

- Tap Density, g/cc
- Apparent density, g/cc
- Hall flow, s/50g

## Testing

All Osprey<sup>®</sup> 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

10 kg CurTec plastic bottles

\*Inconel is a trademark owned by Huntington Alloys Corporation.