

Osprey[®] MAR-60

Osprey[®] MAR-60 is an ultra-high hardness maraging steel alloyed with cobalt, nickel and molybdenum. The alloy is typically used for conformal-cooled mould tooling applications that require high levels of performance, such as injection mold tools, extrusion tools, die casting dies, cores and core pins.

Chemical composition (specification), %

Fe	Ni	Co	Mo	Ti	Al	Cr	Si	C	Mn	P	S
Bal.	12 - 14	14 - 16	9 - 11	0.1 - 0.3	0.05 - 0.20	< 0.3	< 0.1	< 0.03	< 0.1	< 0.01	< 0.01

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.

Powder for additive manufacturing

Osprey[®] 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.

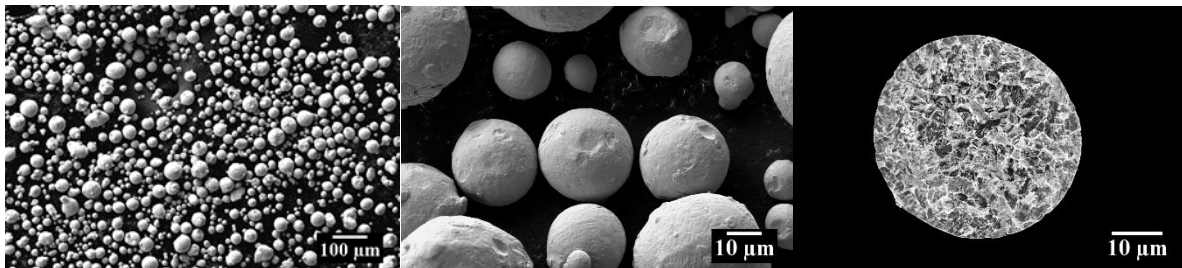


Figure 1; SEM micrographs of a) Osprey[®] MAR-60 powder with a spherical morphology, b) smooth surface and low level of powder satellites and c) micrograph of powder in cross-section, in back scattered electron mode, highlighting the fine cellular structure.

Powder size distribution

- 45 to 20 µm (max 5% >45 µm & max 5% <20 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[®] 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