

Datasheet  
Copper alloys

# Osprey® Cu30Ni

Osprey® Cu30Ni is a copper- and nickel-based alloy with excellent corrosion resistance, tensile strength and ductility over a wide range of temperatures.

UNS  
C96400

ASTM  
B369 (CuNi castings), B505  
(continuous castings), B30 (ingots)

MIL  
C20159

Powder designed for  
Additive Manufacturing (AM)



## Product description

Osprey® Cu30Ni is a copper- and nickel-based alloy with excellent corrosion resistance, tensile strength greater than 414 MPa/60 Ksi and ductility typically greater than 20%, over a wide range of temperatures and especially at very low temperatures. Used extensively in marine, defense, industrial, nuclear and petrochemical applications, especially for pipe fittings and valves, condensers and heat exchangers with anti-microbial and anti-algae properties.

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), %

Last updated: May 13, 2024 3:12 PM CET

|    |           |
|----|-----------|
| Cu | Bal.      |
| Ni | 28.0-32.0 |
| Fe | 0.25-1.50 |
| P  | ≤0.02     |
| Si | ≤0.50     |
| Mn | ≤1.50     |
| C  | ≤0.15     |
| Pb | ≤0.01     |
| S  | ≤0.02     |
| Nb | 0.50-1.50 |

## 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.

## 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.

| 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                    |

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.

