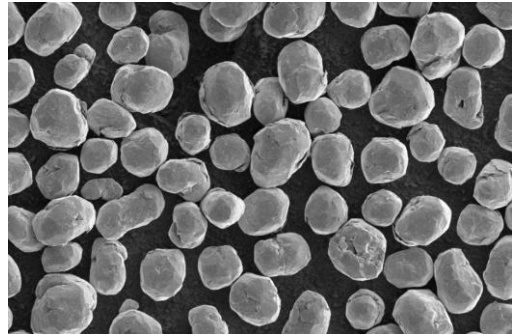


316L HVOF 20-53 μm

ISO X2CrNiMo17-12-2 / EN 1.4404 / AISI 316L

1. Introduction

316L 20–53 μm is a high-quality austenitic stainless steel powder engineered for HVOF and DED coating applications. Its spheroidal morphology and narrow particle-size distribution ensure smooth feeding, stable spray behavior, and dense, adherent coatings. The alloy offers excellent corrosion resistance, mechanical strength, and dimensional stability, making it ideal for restoring or protecting components exposed to aggressive chemical or thermal environments. 316L coatings provide long-term durability, oxidation resistance, and toughness under cyclic loading or high-temperature service conditions.



1.1 Basic facts

Chemistry	AISI 316L / EN 1.4404
Form	Powder
Shape / Morphology	Spheroidal
Size	20-53 μm
Apparent density	min. 3.5 g/cm ³ (typically > 3.6 g/cm ³)
Purpose	Protective and restorative coatings requiring outstanding corrosion resistance, toughness, and mechanical strength under thermal or chemical exposure
Process	DED, Cold Spray, HVOF, HVOF

1.2 Typical Applications

- Repair and refurbishment of stainless steel components
- Wear- and corrosion-resistant coatings on structural or mechanical parts
- Pump bodies, shafts, valves, and heat exchangers
- Turbine casings, manifolds, and housings exposed to high humidity or saline environments
- Chemical and food processing equipment
- Restoration of dimensional tolerances and protection of surfaces against oxidation

2 Material Information

2.1 Chemical composition

Element	Analysis wt. %
C	≤ 0.03
Cr	16.5 – 18.5
Ni	10.0 – 13.0
Mo	2.0 – 2.5
Mn	≤ 2.0
Si	≤ 1.0
P	≤ 0.045
S	≤ 0.015
Fe	Bal.

2.2 Additional Material Characteristics

Property	Value	Unit
Apparent Density	Min. 3.5	g/cm ³
Shape	Spheroidal	-

2.3 Recommended processes

- CS – Cold Spray
- HVOF – High Velocity Oxygen Fuel
- HVOF – High Velocity Air Fuel
- DED – Direct Energy Deposition

4 Commercial Information

4.1 Ordering Information and Availability

Product	Package Size	Package Type	Availability	Distribution
316L HVOF 20-53 μm	2kg	Plastic Jar UNX	Stock	Europe
	4kg	Plastic Jar UNX	Stock	Europe
	10kg	Wide-neck drum UNX	Stock	Europe
	20kg	Wide-neck drum UNX	Stock	Europe

4.2 Storage and Handling Guidelines:

- Always store the product in its original container in a dry environment.
- Gently rotate the container before use to ensure even distribution. Avoid aggressive handling to prevent damage to fragile, mechanically clad components.
- Once opened, powder containers should be kept in a drying oven to prevent moisture absorption.
- If a desiccant is present, be sure to remove it prior to using the product.

4.3 Safety Recommendations

Refer to the Safety Data Sheet (SDS). SDS document can be accessed on the Ultra Metal Powders website at www.umpowders.com under Resources → Safety Data Sheets.