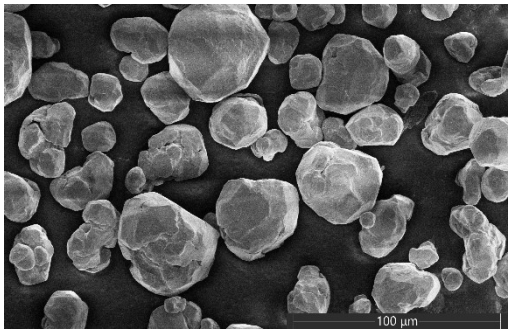
Iron 99.7% HVOF 20-45 µm

1. Introduction



Iron 99.7% HVOF 20–45 µm is a high-purity iron powder optimized for thermal spray processes, particularly Cold Spray and HVOF. The controlled particle size range of 20–45 µm, combined with its spheroidal morphology, ensures stable feeding, smooth powder flow, and efficient particle acceleration during spraying.

The material's 99.7% Fe purity and low impurity content support strong bonding, uniform coating structure, and reliable magnetic and thermal performance. This makes it well-suited for functional iron-based coatings and for repair or dimensional restoration of steel components.

1.1 Basic facts

Chemistry	**Fe 99.70%**
Form	Powder
Shape / Morphology	Spherical / Spheroidal
Size	20-45 µm
Apparent density	min. 3.8 g/cm^3
Purpose	Functional coatings, Cold Spray coatings and build-up layers, bond coats and underlayers for multi-material systems, thermal/electrical conductivity improvement coatings
Process	Cold Spray, HVOF

1.2 Typical Applications

- Power generation components
- Automotive and machinery parts
- Molds, tooling and housings
- Pumps, shafts, valves, sleeves
- General engineering and manufacturing equipment

2 Material Information

2.1 Chemical composition

Element	Value	wt.%
Fe	min.	99.70
0	max.	0.25
C	max.	0.01
N	max.	0,001
S	max.	0,011

2.2 Additional Material Characteristics

Property	Value	Unit
Apparent Density	Min. 3.8	g/cm^3
Shape	Spherical / Spheroidal	-

2.3 Recommended processes

- CS - Cold Spray
- HVOF – High Velocity Oxygen Fuel

4 Commercial Information

4.1 Ordering Information and Availability

Product	Package Size	Package Type	Availability	Distribution
Iron 99.7% HVOF 20-45 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.