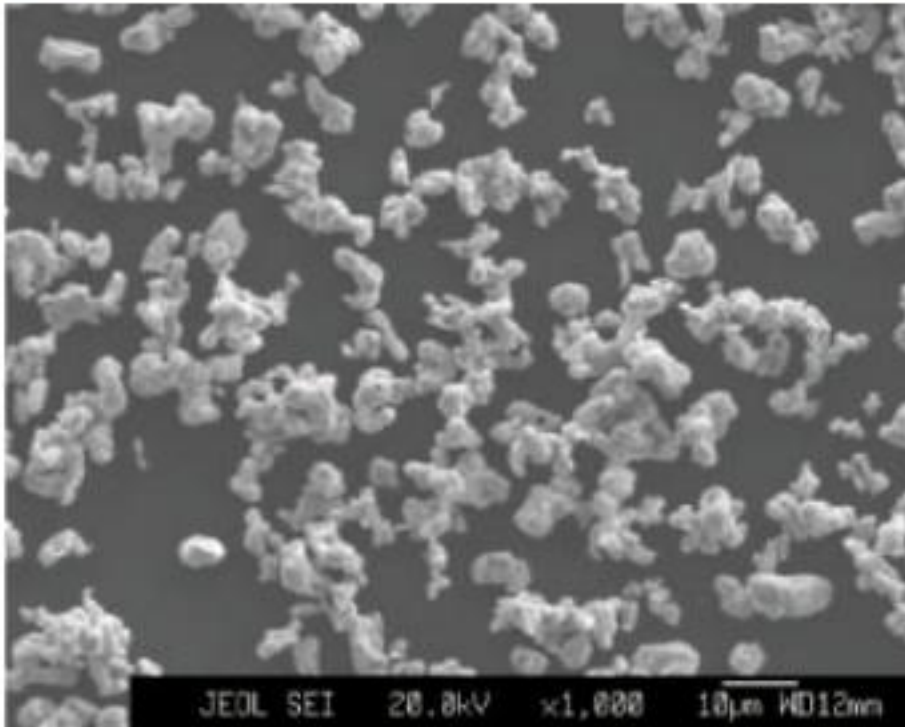


Grade: **UF-A**

SEM-VIEW



- Replacing Carbonyl Iron Powder
- High strength / High hardness
- Improve the wear resistance of the tool

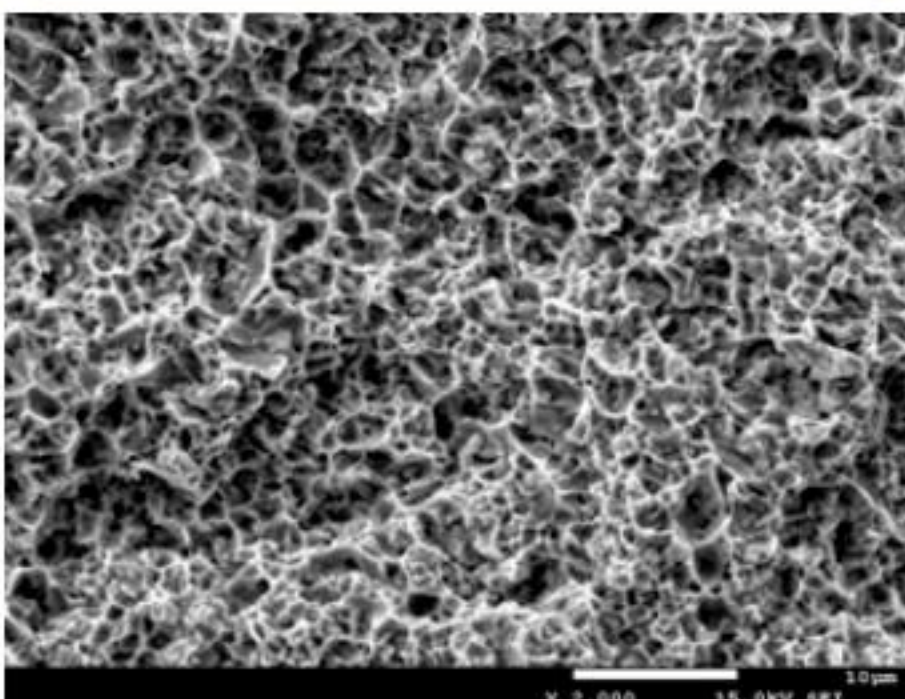
Chemical Analysis (%)

Fe	≥98.8
O	≤0.60
C	≤0.03
N	≤0.01

Physical Properties

Particle Size Distribution (µm)	D10	2.3-3.1
	D50	4.8-5.5
	D90	8.0-10.0
Apparent Density (g/cm ³)	1.2-1.6	
Tap Density (g/cm ³)	2.3-3.2	

Sintered Shape : 800°C



Sintering Physical Properties

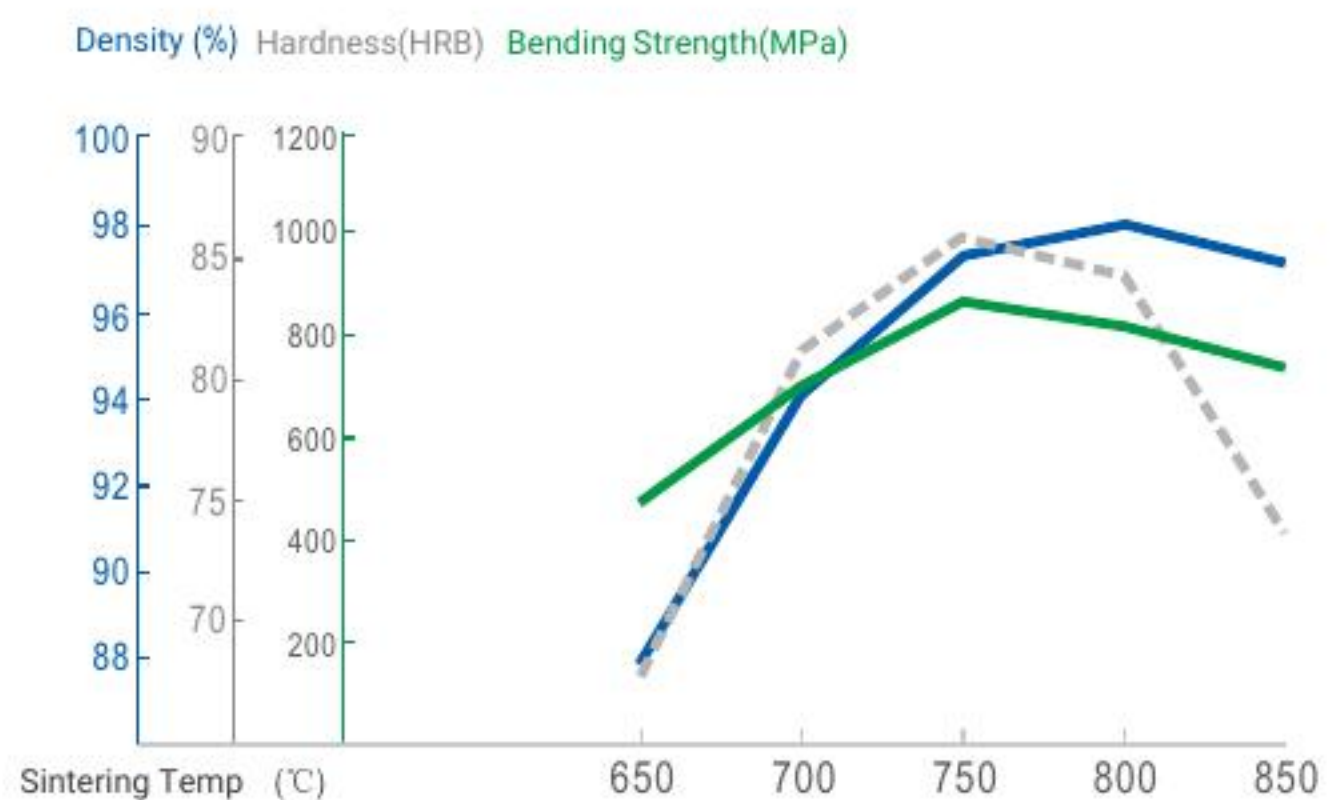
Sintering Temp (°C)	Density (%)	Hardness (HRB)	Bending Strength (MPa)
650	87.86	67.7	477.3
700	93.99	80.9	700.0
750	97.29	85.8	866.7
800	98.02	84.4	824.3
850	97.20	73.6	745.2

The Best Sintering Range: 700–800°C

The Min. Temperature in Use: 700°C

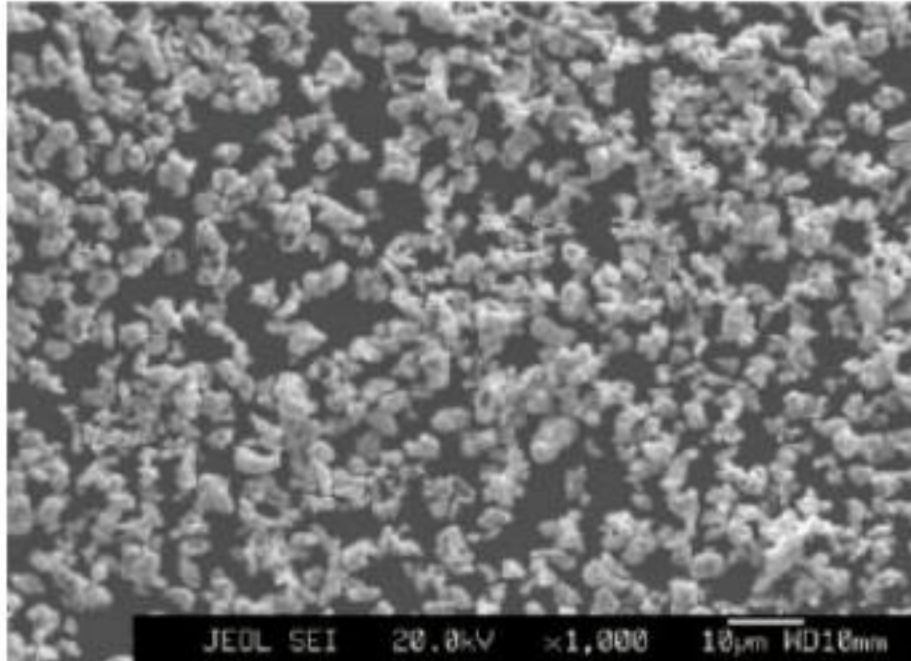
The Max. Hardness: 89HRB

The Max. Bending Strength: 932MPa



Grade: **UF-B**

SEM-VIEW



- Replacing Carbonyl Iron Powder
- High strength / High hardness
- Increase diamond holding power

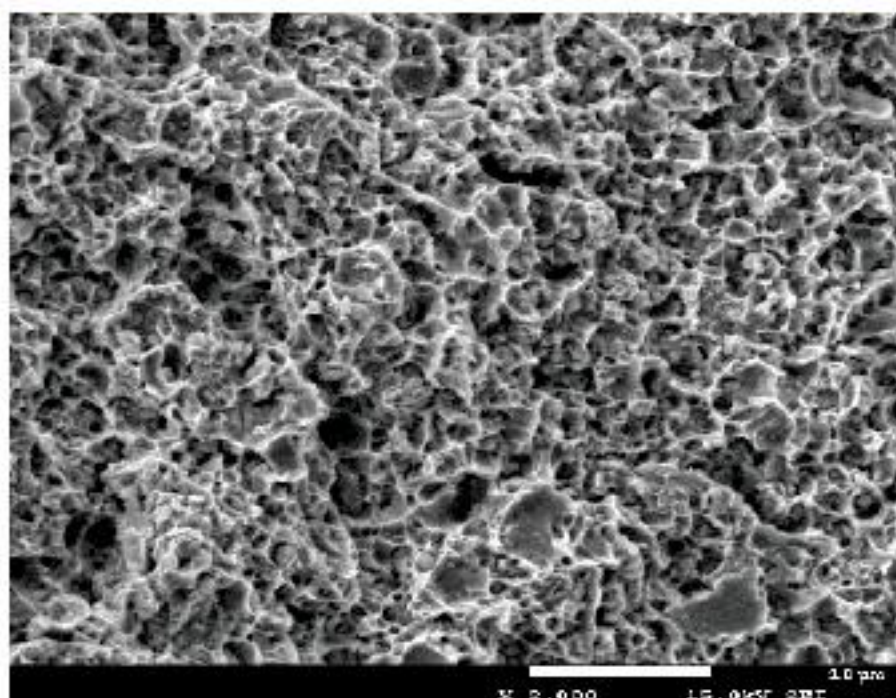
Chemical Analysis (%)

Fe	≥98.5
O	≤0.85
C	≤0.03
N	≤0.01

Physical Properties

Particle Size Distribution (µm)	D10	1.5-2.5
	D50	3.3-4.3
	D90	5.5-7.0
Apparent Density (g/cm ³)	0.9-1.8	
Tap Density (g/cm ³)	2.4-3.6	

Sintered Shape : 800°C



Sintering Physical Properties

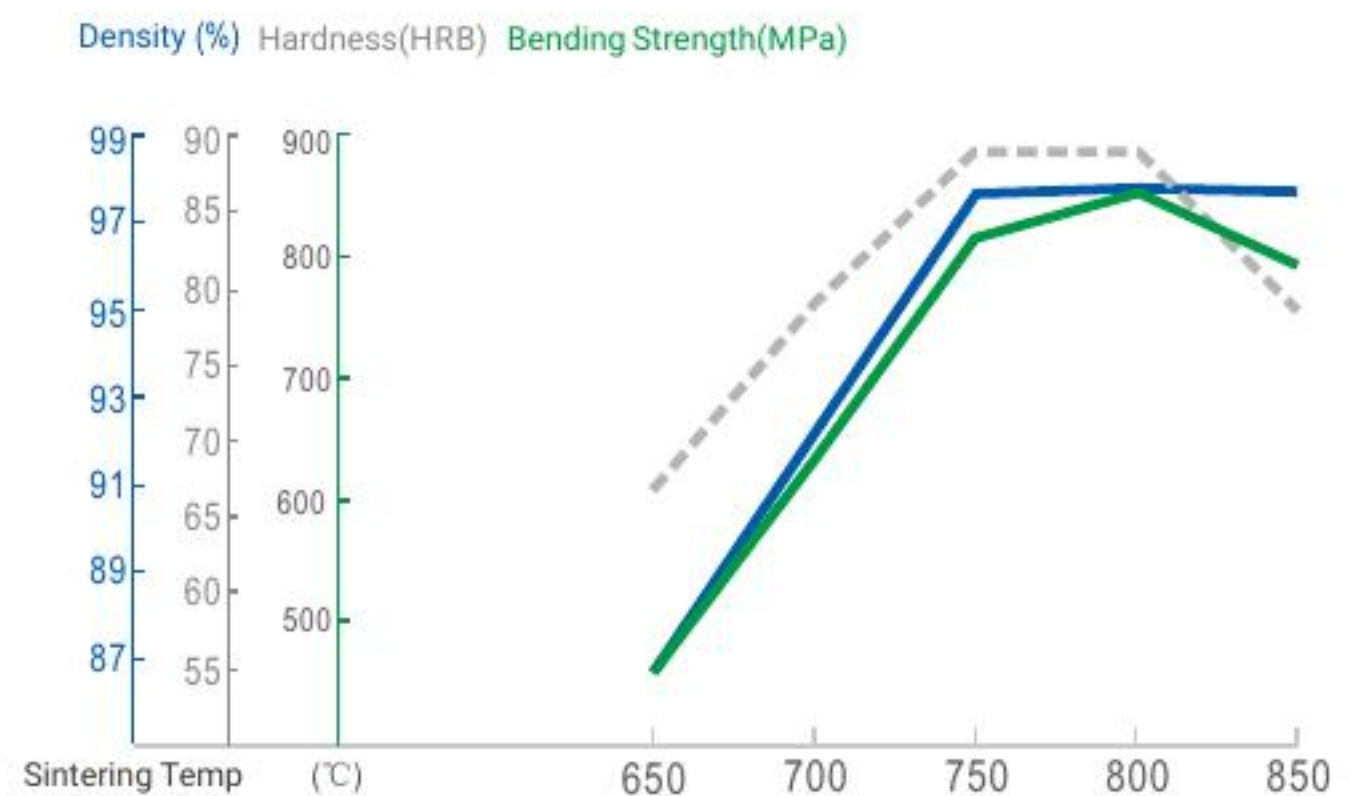
Sintering Temp (°C)	Density (%)	Hardness (HRB)	Bending Strength (MPa)
650	86.71	66.6	457.9
700	92.17	78.8	631.7
750	97.71	88.9	815.8
800	97.79	88.9	852.2
850	97.75	78.4	795.4

The Best Sintering Range: 700–800°C

The Min.Temperature in Use: 700°C

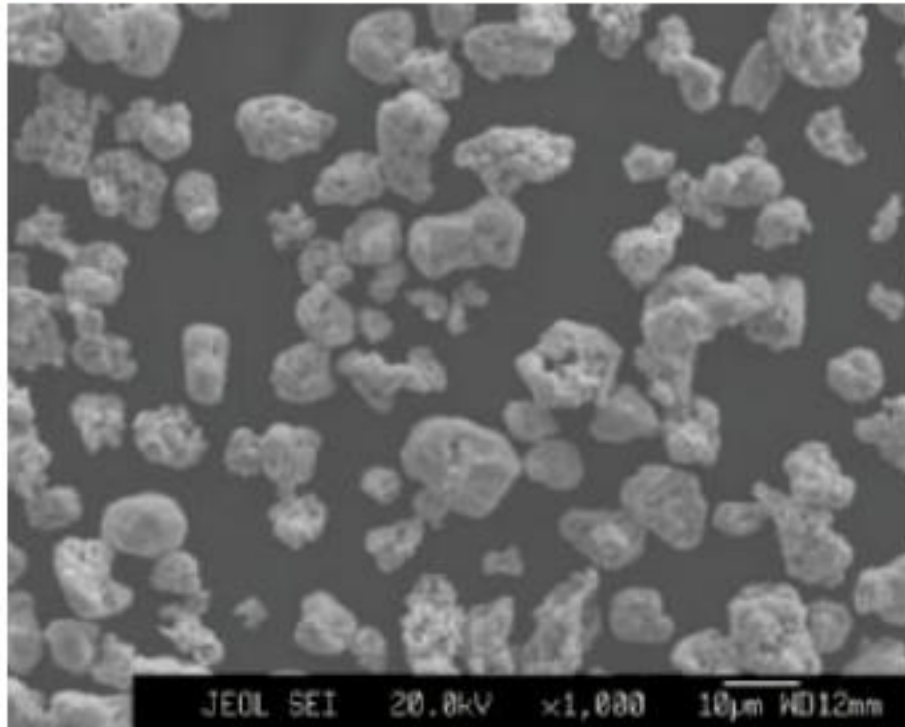
The Max.Hardness: 91.5HRB

The Max.Bending Strength: 885.6MPa



Grade: **UF-D**

SEM-VIEW



- For diamond tools, PM / MIM
- High reactivity at low temperature
- Uniform and fine structure

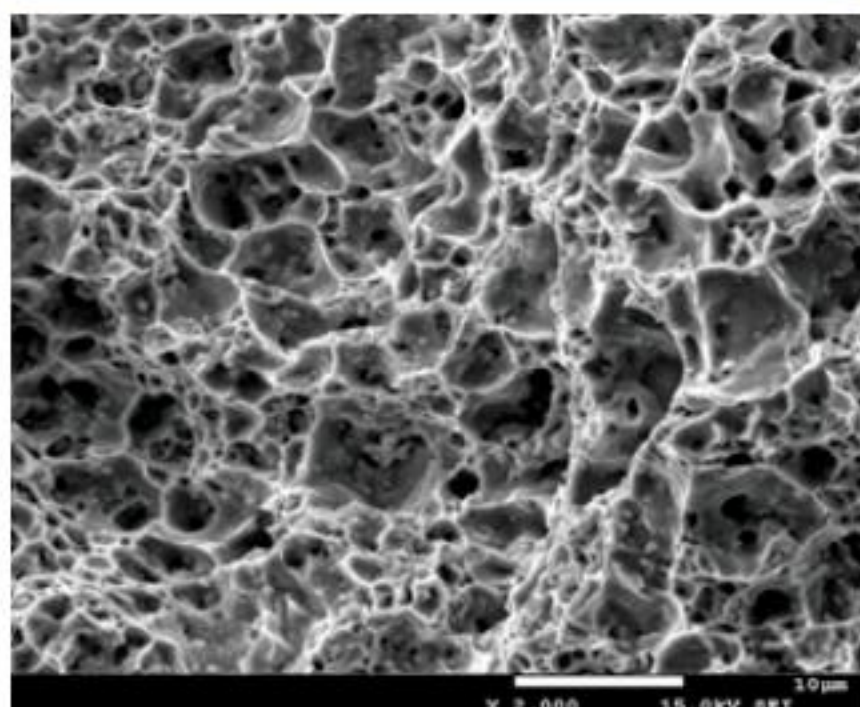
Chemical Analysis (%)

Fe	≥98.85
O	≤0.70
C	≤0.03
N	≤0.01

Physical Properties

Particle Size Distribution (µm)	D10	3.5-5.0
	D50	7.0-9.0
	D90	13.0-25.0
Apparent Density (g/cm ³)	1.9-2.5	
Tap Density (g/cm ³)	3.2-4.2	

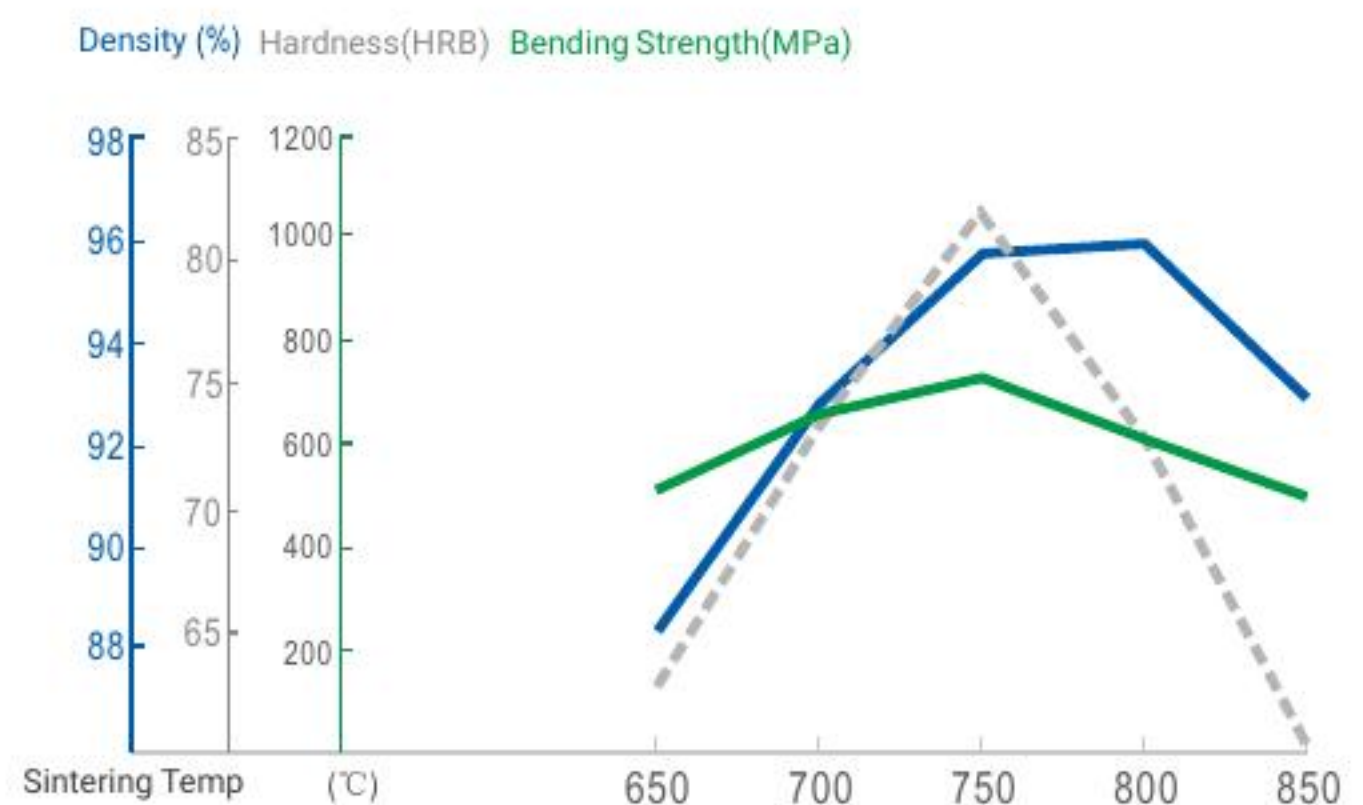
Sintered Shape : 800°C



Sintering Physical Properties

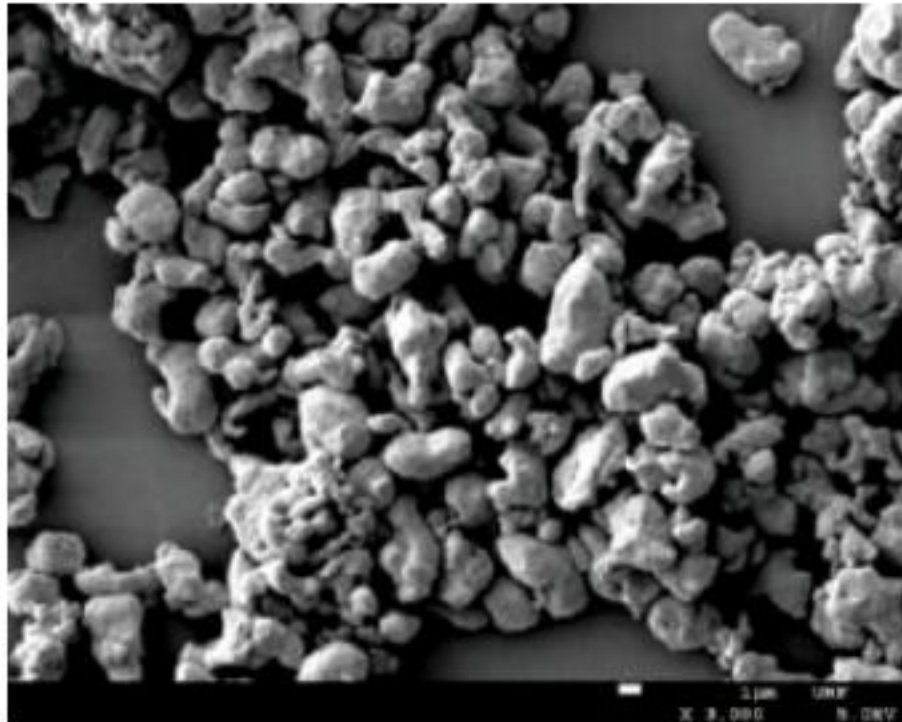
Sintering Temp (°C)	Density (%)	Hardness (HRB)	Bending Strength (MPa)
650	88.47	62.8	517.8
700	92.80	73.3	666.0
750	95.78	81.9	725.1
800	95.89	72.9	606.9
850	92.94	60.4	497.8

The Best Sintering Range: 700–800°C
 The Min.Temperature in Use: 700°C
 The Max.Hardness: 85HRB
 The Max.Bending Strength: 745.1MPa



Grade: **UF-F**

SEM-VIEW



- For diamond tools, PM / MIM, water and soil remediation
- Improve the durability and sharpness of tools
- Extremely high reactivity

Chemical Analysis (%)

Fe	≥98.2
O	≤1.15
C	≤0.03
N	≤0.01

Sintering Physical Properties

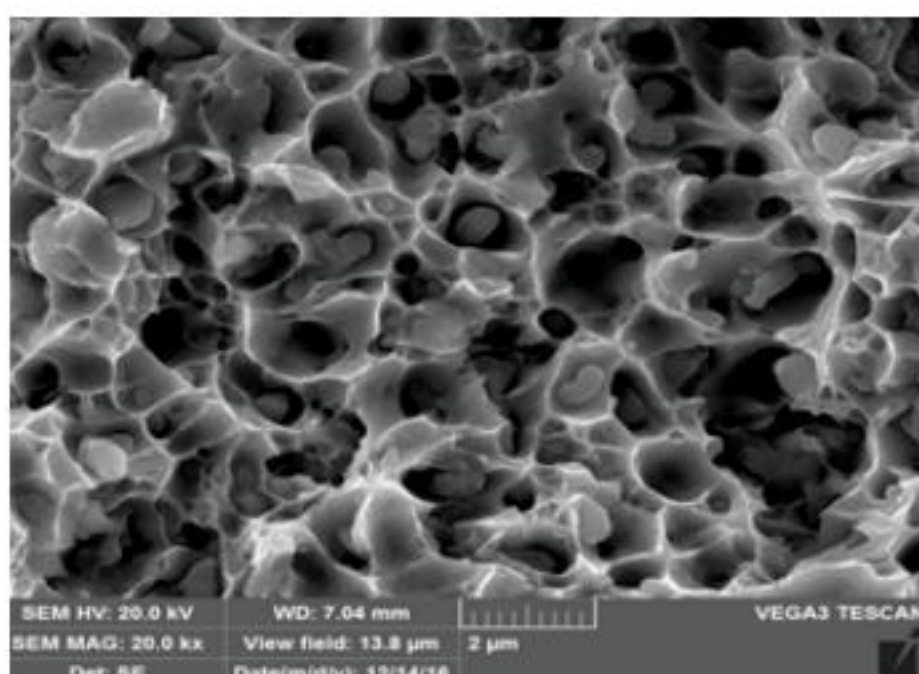
Sintering Temp (°C)	Density (%)	Hardness (HRB)	Bending Strength (MPa)
700	94.94	95.5	788.7
750	97.33	98.0	964.9
800	98.04	95.6	945.3
850	97.82	81.5	908.3
900	97.54	80.8	856.2

Physical Properties

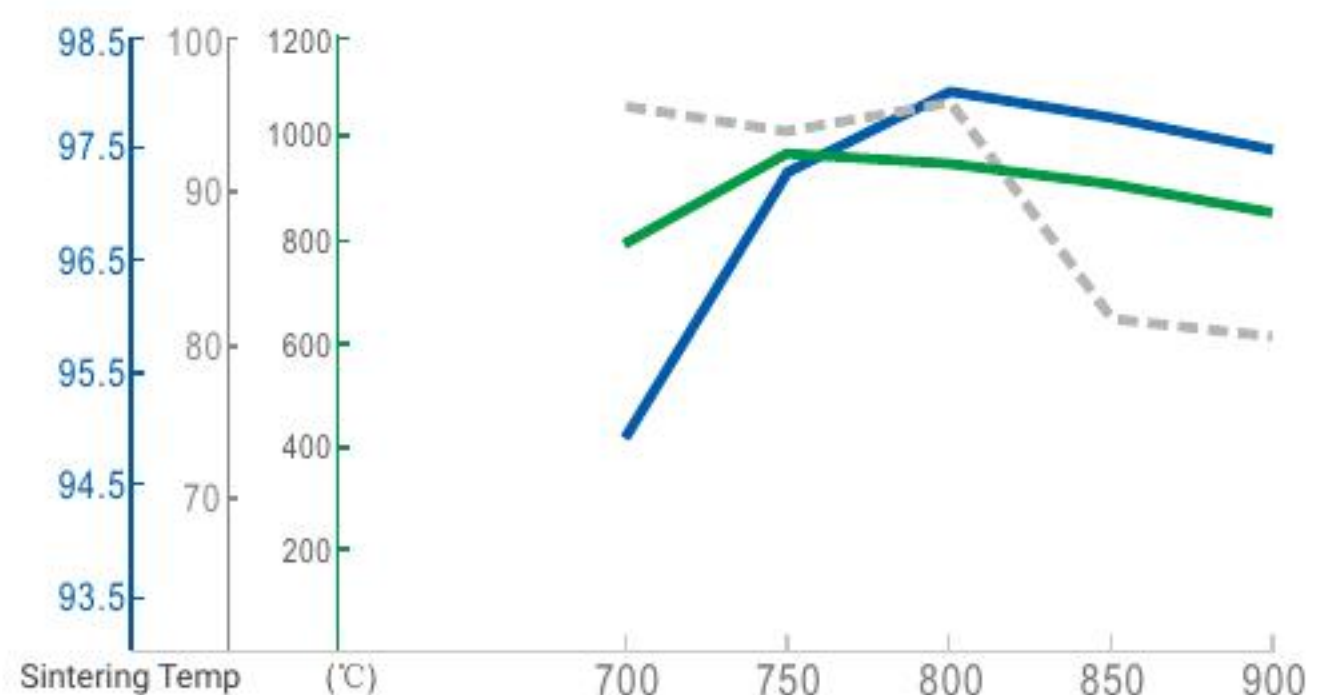
Particle Size Distribution (μm)	D10	1.0-1.5
	D50	2.5-3.5
	D90	4.2-5.2
Apparent Density (g/cm ³)	0.8-1.5	
Tap Density (g/cm ³)	2.0-3.2	

The Best Sintering Range: 750-800°C
 The Min.Temperature in Use: 750°C
 The Max.Hardness: 99.5HRB
 The Max.Bending Strength: 1006.2MPa

Sintered Shape : 800°C

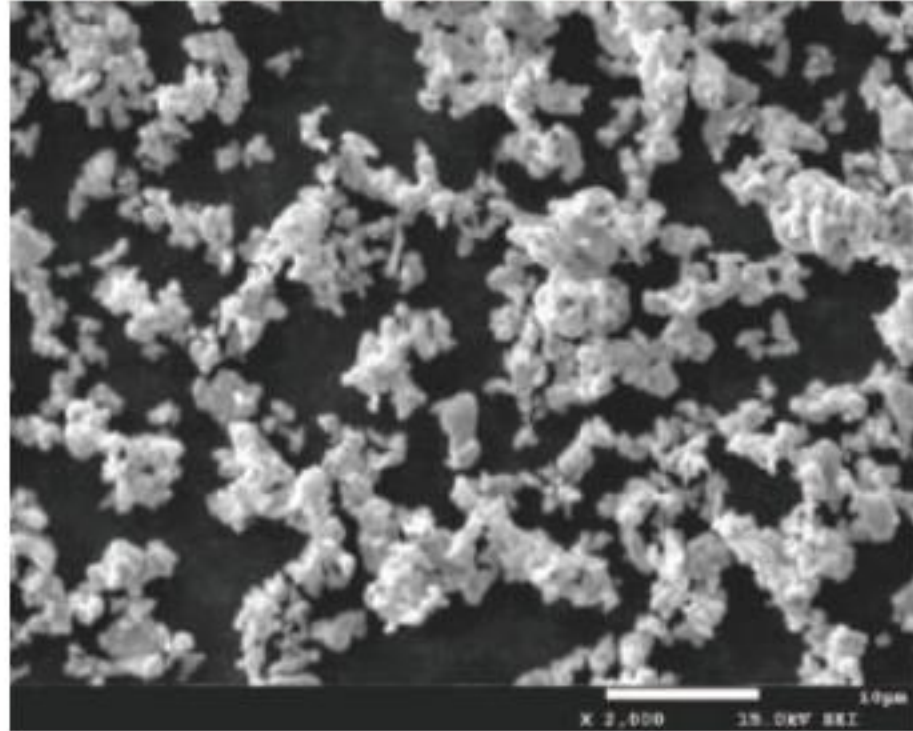


Density (%) Hardness(HRB) Bending Strength(MPa)



Grade: **UF-P**

SEM-VIEW



- Replacing Carbonyl Iron Powder
- High strength / High hardness
- Very high bending strength above 800°C

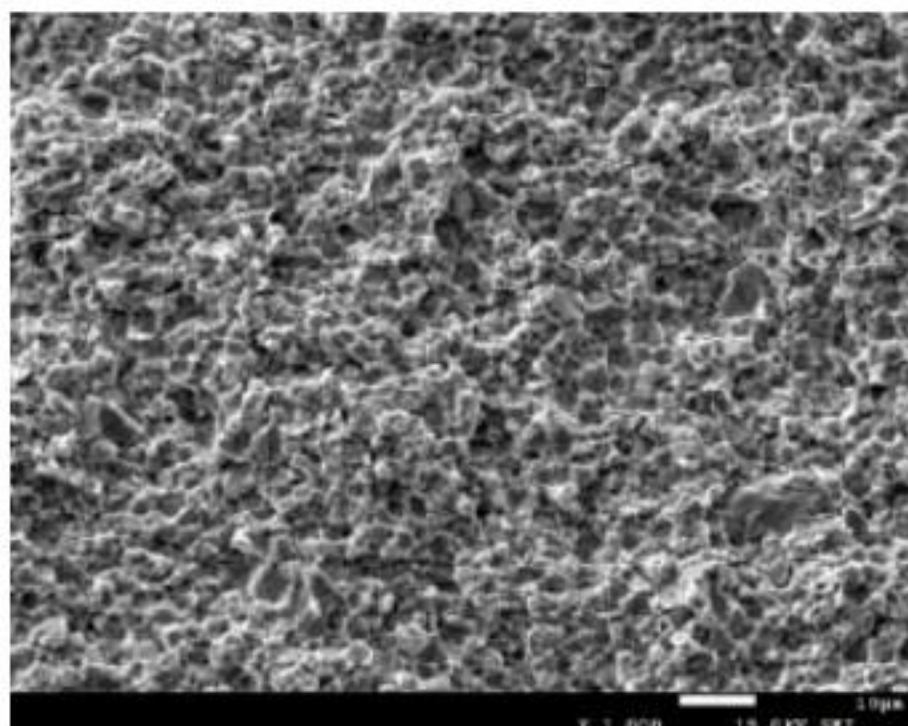
Chemical Analysis (%)

Fe	≥96.65
O	≤1.04
C	≤0.01
P	≤2.30

Physical Properties

Particle Size Distribution (µm)	D10	1.0-1.5
	D50	2.2-3.2
	D90	4.0-5.0
Apparent Density (g/cm ³)	0.9-1.2	
Theoretical Density (g/cm ³)	7.74	

Sintered Shape : 850°C



Sintering Physical Properties

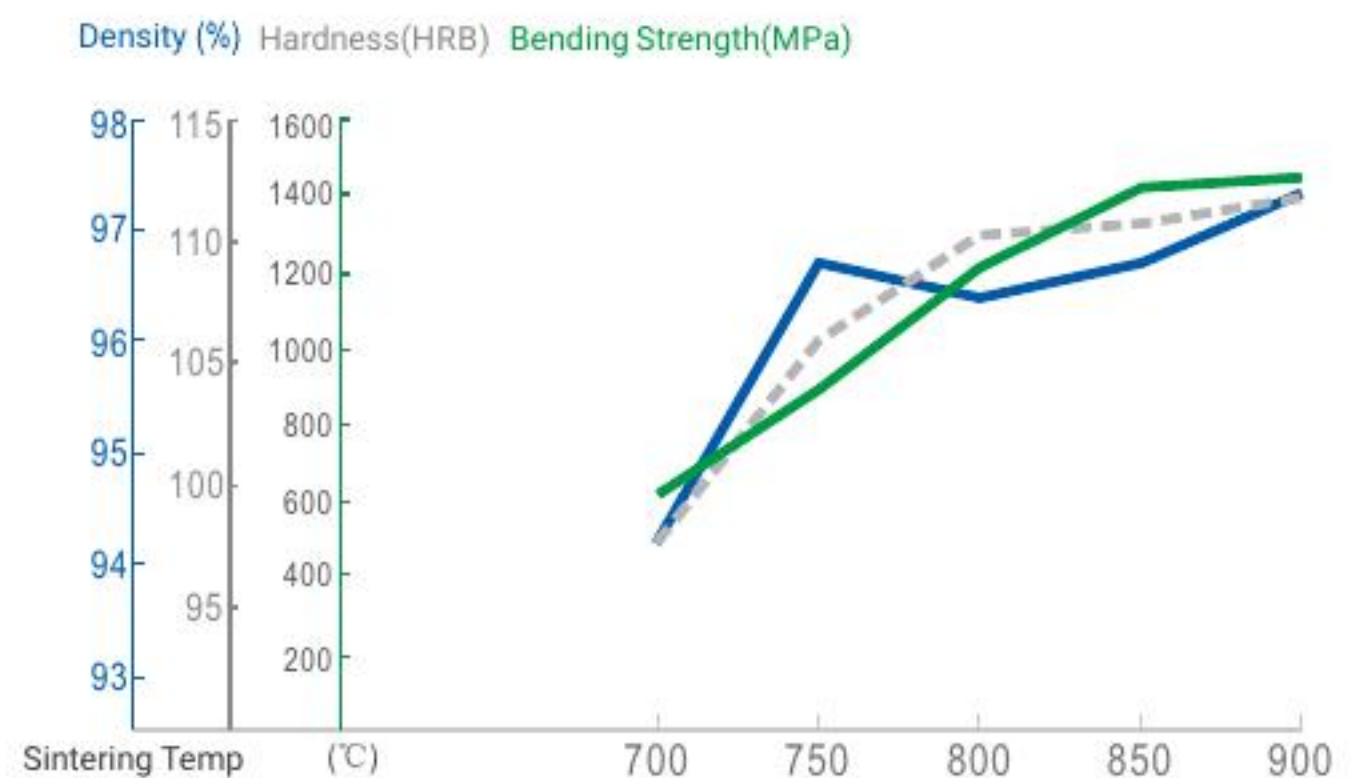
Sintering Temp (°C)	Density (%)	Hardness (HRB)	Bending Strength (MPa)
700	94.20	97.4	613.8
750	96.70	105.8	886.3
800	96.40	110.2	1206.8
850	96.70	110.6	1422.6
900	97.30	111.7	1445.2

The Best Sintering Range: 800–900°C

The Min.Temperature in Use: 800°C

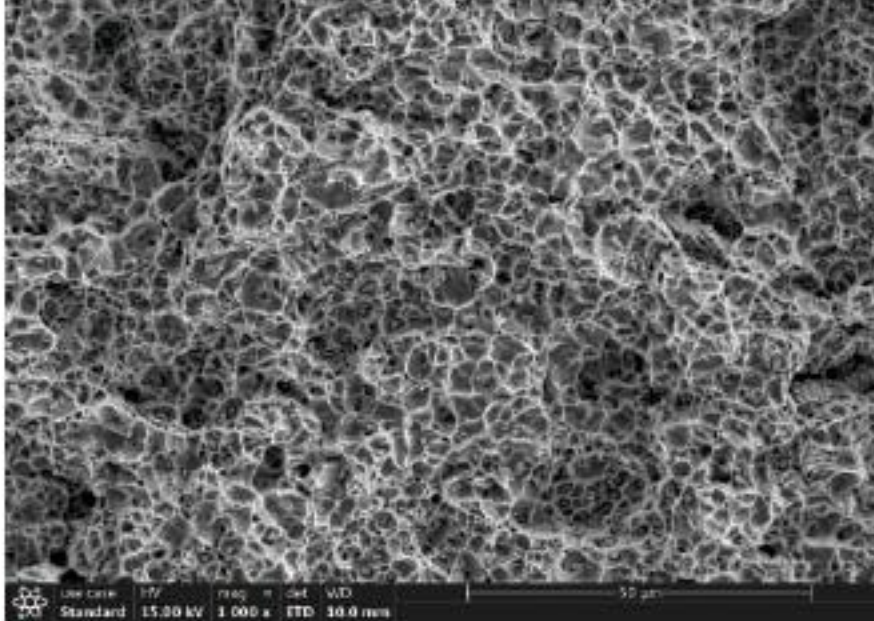
The Max.Hardness: 112.5HRB

The Max.Bending Strength: 1571MPa



Grade: **UFN01**

SEM-VIEW



- Achieves densification sintering at 750°C with strength up to 1500 MPa and excellent toughness.
- Average particle size: 3-5 μm, featuring outstanding sintering activity.
- Ideal for laser welding transition layers at 750-800°C, and for matrix formulations to provide solid solution strengthening and improve diamond retention at lower temperatures.

Chemical Analysis (%)

Fe	88
Ni	12
O	<0.5

Physical Properties

Particle Size Distribution (μm)	D10	1.5-2.5
	D50	3.0-5.5
	D90	7.0-10.0
Apparent Density (g/cm ³)	1.85-2.4	
Theoretical Density (g/cm ³)	7.98	

Sintering Physical Properties

Sintering Temp (°C)	Density (%)	Hardness (HRB)	Bending Strength (MPa)
750	96.50	85-88	1350-1500
800	97.50	90-95	1400-1600
850	97.50	90-95	1400-1600

Grade: **UFN03**

Chemical Analysis (%)

Fe	Bal.
Ni	24.0-26.0 %
O	≤0.55 %

- Good flowability and filling performance.
- Suitable as a laser welding transition layer material for high-temperature sintering above 850°C.
- Moderate apparent density with excellent flowability; no granulation required.

Physical Properties

Particle Size Distribution (μm)	D10	3.0-5.0	Apparent Density (g/cm ³)	2.10-2.50
	D50	15.0-30.	Tap Density(g/cm ³)	3.00-3.50
	D90	40.0-65.0	Theoretical Density (g/cm ³)	8.10

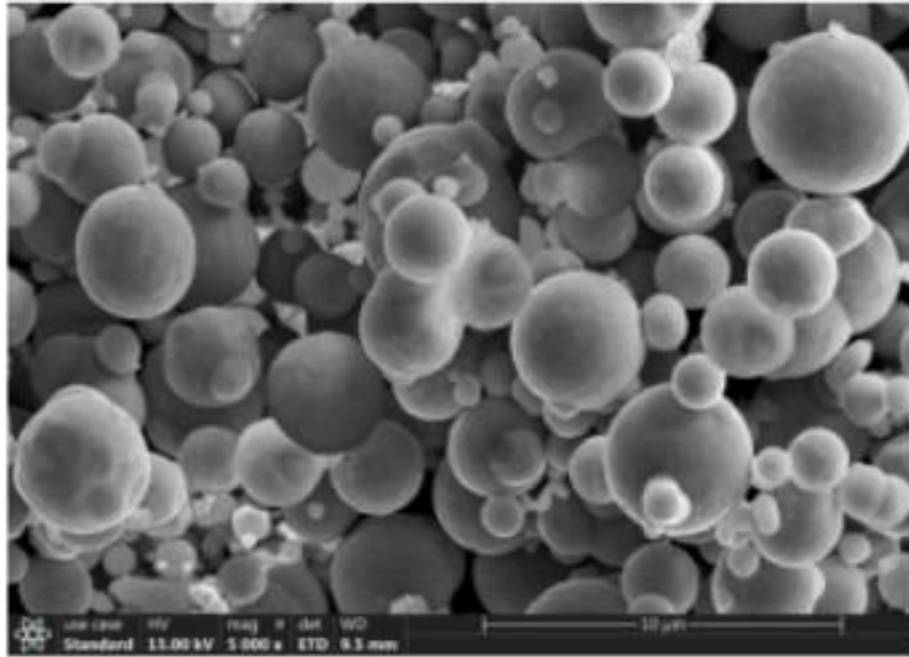
Sintering Physical Properties

350 kgf/cm²

Sintering Temp (°C)	Density (%)	Hardness (HRB)	Bending Strength (MPa)
800	96.44	86.5	1240.0
850	96.54	94.3	1323.3
900	96.21	95.3	1365.0

Grade: UFN06A

SEM-VIEW



- Can replace Co, Ni
- High bending strength
- Ultra-high bonding strength
- Recommendation: Application of transition layer in the medium-high temperature zone (above 800°C).

Chemical Analysis (%)

Element	Main Component (%)
Fe	Main Component
Ni	25.0

Sintering Physical Properties

Sintering Temp (°C)	Density (g/cm ³)	Hardness (HRB)	Bending Strength (MPa)
700	7.67	92.5	1379.3
750	7.81	99.8	1547.5
800	7.78	101.2	1631
850	7.87	103.4	1921.7
900	7.94	104.5	1985.4
950	7.89	96.7	1820.5

Physical Properties

Particle Size Distribution (μm)	D10	0.8-1.5
	D50	3.0-4.5
	D90	7.0-9.5
Apparent Density (g/cm ³)	1.6-2.2	
Theoretical Density (g/cm ³)	8.12	

Best Sintering Range: 800-900°C
 Min. Temperature in Use: 800°C
 Max. Hardness: 104.5 HRB
 Max. Bending Strength: 2024.3 MPa

Sintered Shape: 800 °C

