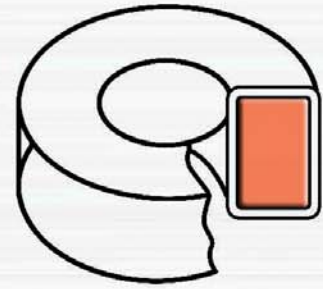


Soft Magnetic Alloy Powders

软磁合金粉末



Characteristics 粉末特征

- Low oxygen content · 低氧含量
- Low core loss · 损耗低
- Excellent DC bias · 直流偏磁性能好低
- Stable performance · 磁性能稳定

Typical properties of core powders 磁粉芯粉末参数

Grade 牌号	Technics 生产工艺	Permeability 磁导率	Flowability 流动性 (s/50g)	A.D. 松装密度 (g/cm ³)	O ₂ Content 氧含量 (PPM)	Mean Particle Size(μ m) 平均粒径 D50
HF-w	Water atomization 水雾化	60~125	<25	>4.2	<2000	40~48
MPP-w		125~220	<25	>4.2	<2000	40~48
FeSi-w		20~90	<30	>3.3	<3000	45~55
FeSiCr-w		20~60	---	>3.2	<2000	11~20
Amorphous	Gas atomization 气雾化	20~60	<30	>3.5	<2500	32~40
HF-g		60~125	<20	>4.8	<600	55~65
MPP-g		125~220	<20	>4.8	<600	55~65
FeSiAl-g		60~90	<20	>4.2	<500	50~60
FeSi-g		20~60	<20	>4.2	<500	50~60

Typical powder core properties 磁粉芯性能

Grade 牌号	Permeability 磁导率	Core Loss* 损耗 kW/m ³	DC Bias** 直流偏磁 Oe	u VS. T% 温度特性 (-55~125℃)	uVS.F*** 频率特性 MHz
Amorphous	60	400~600	85~100	2~2.5	10
MPP-w	60	260~350	100	0.6	2.7
HF-w	60	400~600	150	1.6	1.2
FeSi-w	60	750~850	140	8	6.5

Remark注: * @50kHz, 0.1T; **@50%μ0; ***@90%μ0

Typical properties of electromagnetic clutch powders 离合器粉末参数

- Good flowability · 流动性好
- Excellent property of heat and wear resistance · 耐磨耐高温



Grade 牌号	Shape 颗粒形状	Flowability 流动性 (s/50g)	A.D. 松装密度 (g/cm ³)	O ₂ Content 氧含量 (PPM)	Specification 粉末规格
FeCoNi	Spherical 球形	<15	>4.9	<400	variety of particle size, such as: -50+80,-80+150,-150+250mesh 根据用户需求提供各种粒度规格
FeCo		<15	>4.9	<400	
FeCr		<15	>4.9	<300	

Other alloys and tailored particle size distributions, not listed, are available on request.
可根据客户需求提供其他成分产品

Synthesized diamond catalyst powders

金刚石合成触媒粉末

Characteristics 粉末特征

- Low oxygen content · 低氧含量
- High purity · 高纯度
- Excellent stability · 良好的稳定性



Typical properties 主要参数

Grade 牌号	Shape 颗粒形状	Flowability 流动性 (s/50g)	A.D. 松装密度 (g/cm ³)	O ₂ Content 氧含量 (PPM)	Laser Particle Size(μ m) 激光粒度分布		
					D10	D50	D90
FeNi30-w	Irregular 不规则	—	3.0-3.8	<2500	6.5-10.5	20.0-27.0	50.0-60.0
FeNiCo-w		—	3.1-3.9	<2500	6.5-10.5	20.0-27.0	50.0-60.0
FeNi30-g	Spherical 球形	<20	3.6-4.4	<300	9.0-13.0	25.5-35.5	63.0-75.0
FeNiCo-g		<20	3.7-4.5	<300	9.0-13.0	25.5-35.5	63.0-75.0

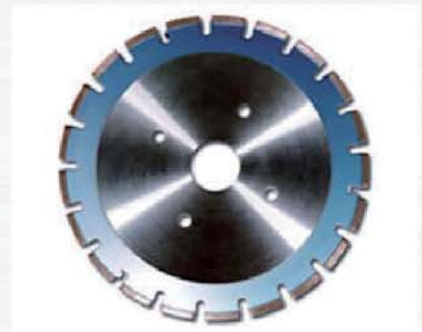
Other alloys and tailored particle size distributions, not listed, are available on request.
可根据客户需求提供其他成分产品

Pre-alloyed matrix powders for diamond tools

金刚石工具预合金粉末

Characteristics 粉末特征

- Low oxygen content · 氧含量低
- Fine particle size · 粉末粒度细
- Low sintering temperature · 烧结温度低
- High retention and wear resistance · 把持力强, 耐磨性好
- Excellent for laser welding · 激光焊接性能好
- Cost saving for customers · 节约成本



Typical properties 主要参数

Grade 牌号	Shape 形貌	S.T. 烧结温度 (°C)	HD 硬度 (HRB)	S.D. 烧结密度 (g/cm ³)	O ₂ Content 氧含量 (PPM)	Mean Size 平均粒径 D50(μm)	Main application 主要应用
Follow100	Irregular 不规则	750~810	101~102	8.01-8.15	<3000	15~25	花岗岩、混凝土 granite, concrete
Follow200		680~730	97~98	8.55-8.72	<2000	10~20	激光焊、薄壁钻 Laser weld, core drill
Follow400		700~750	106~108	7.93-8.03	<3000	15~25	软石材、混凝土 Soft stone, concrete
Follow500		750~800	40~45(HRC)	8.20-8.40	<2000	10~20	激光焊、混凝土 Laser weld, concrete
M80S20		800~850	60~65(HRC)	7.69-7.85	<2000	<25	混凝土 concrete
CuNiMnSi	Spherical 球形	700~750	150~200(HV0.2)	8.33-8.50	<500	<35	地质钻头 Diamond drill

Other alloys and tailored particle size distributions, not listed, are available on request.
可根据客户需求提供其他成分产品

Metal Injection Moulding (MIM) powders

注射成型用粉

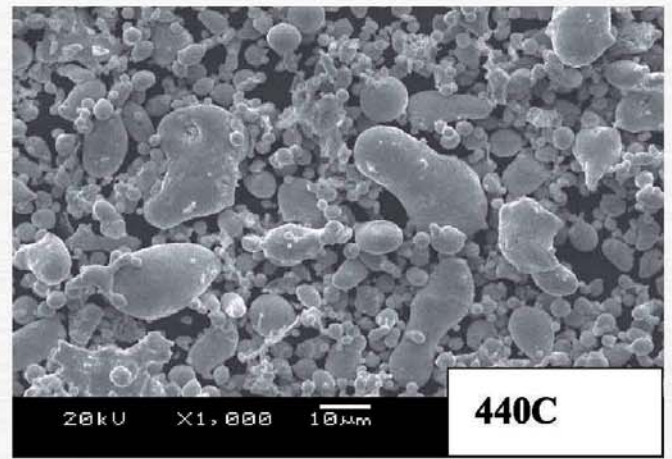
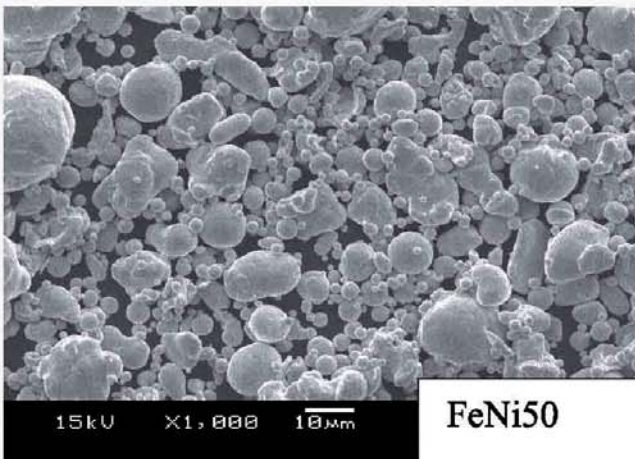
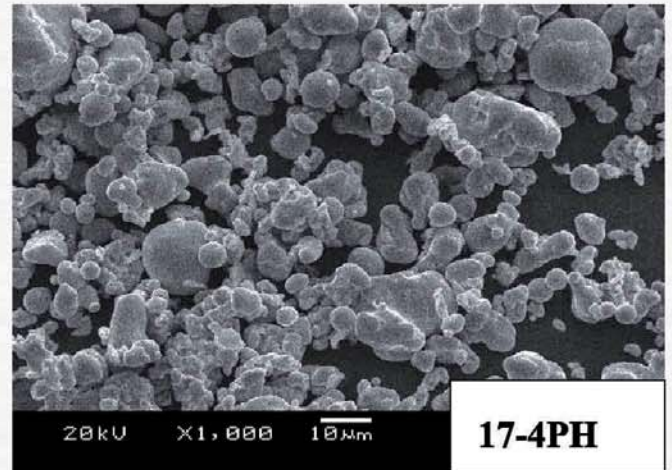
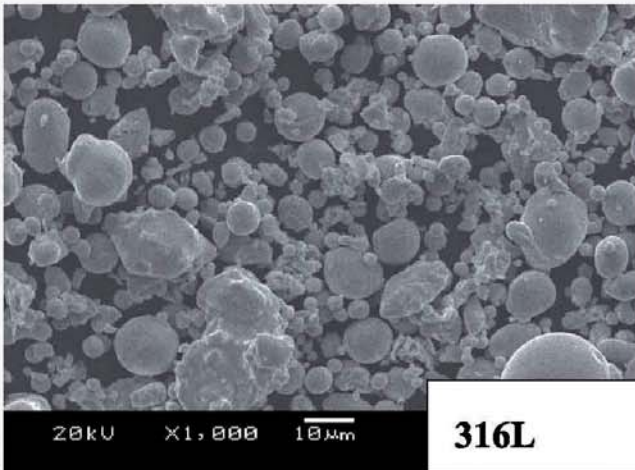
Characteristics 粉末特征

- Fine particle size · 粉末颗粒细
- High tap density · 高振实密度含量
- Low oxygen content · 低氧含量
- Near spherical shape · 近球形粉末



Typical properties for MIM 注射粉末典型参数

Grade 牌号	Mean Size 平均粒径 (μm)	O ₂ Content 氧含量 (PPM)	T.D. 振实密度 (g/cm^3)	S.D. 烧结密度 (g/cm^3)	Y.S. 屈服强度 (Mpa)	T.S. 抗拉强度 (Mpa)	Hardness 硬度	Shrinkage 收缩比 (%)
316L	10~12	<3500	4.2-4.5	7.6-7.9	≥ 170	≥ 500	$\geq 65\text{HRB}$	1.1~1.2
440C	9~11	<2500	3.9-4.2	7.6-7.9	≥ 180	≥ 550	$\geq 50\text{HRC}$	1.1~1.2
17-4PH	9~12	<3500	4.2~4.4	7.6-7.9	≥ 600	≥ 950	$\geq 33\text{HRC}$	1.1~1.2
FeNi50	9~12	<3500	4.6~4.9	—	—	—	—	—

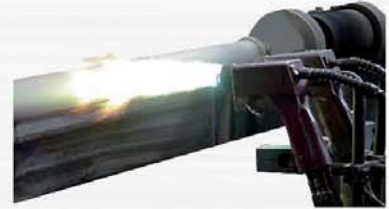


Other alloys and tailored particle size distributions, not listed, are available on request.
可根据客户需求提供其他成分产品

Thermal spray & laser cladding & brazing powders 热喷涂（焊）粉末、激光融覆粉末、钎焊粉末

Characteristics 粉末特征

- Low oxygen content · 低氧含量
- Spherical shape · 球形粉末
- Narrow particle size distribution · 粒度分布集中
- Excellent corrosion resistance · 耐腐蚀



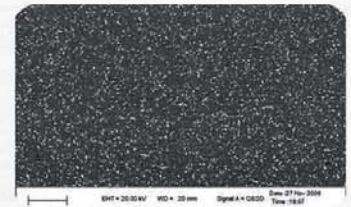
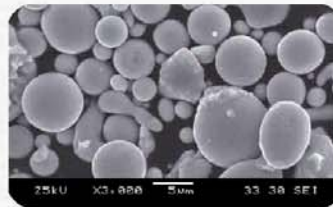
Typical properties 主要参数

Grade 牌号	HD 硬度 (HRC)	T.D. 振实密度 (g/cm ³)	A.D. 松装密度 (g/cm ³)	Flowability 流动性 (s/50g)	Melting 熔点 (°C)
N-45	40~50	≥4.8	≥4.0	≤15	980~1050
N-60	58~62	≥4	≥3.8	≤15	970~1040
N-11	160~200(HV0.2)	≥5	≥4.2	≤15	1380~1420
Ni粉	150~180(HV0.2)	≥3.8	≥3.8	≤20	1440~1460
BNI-2	58-62	≥4.2	≥3.8	≤15	950~1000
BNI-5	——	≥4.2	≥3.8	≤15	1000~1100

High speed steel & Super alloy powders 高速钢、高温合金粉末

Characteristics 粉末特征

- Low oxygen content · 低氧含量
- Low non-metallic inclusions · 低非金属夹杂



Typical properties 主要参数

Grade 牌号	C	Cr	Mo	W	V	Co	HIP 横向 抗弯强度B.S. MPa	Hardness 硬度 (HRC)
T15M	1.55~1.65	4.50~5.00	2.00~2.40	9.50~11.00	4.60~5.20	7.60~8.30	≥3400	67~70
T15	1.50~1.60	3.75~5.00	≤1.00	11.75~13.00	4.50~5.25	4.75~5.25	≥3300	66~69
M4	1.30~1.40	4.00~4.50	4.50~5.00	5.20~6.00	3.90~4.30	≤0.50	≥3100	65~67
M3	1.25~1.35	3.90~4.50	4.70~5.50	5.90~6.70	2.75~3.25	——	≥3000	65~67
M2	0.80~0.90	3.80~4.40	4.50~5.50	5.50~6.75	1.75~2.20	——	≥2800	65~67
AHP10V	2.4~2.5	5~5.5	≤1.3	——	9.5~10.5	——	≥2700	67~70
718	≤0.08	18.5	3	5(Nb)	0.6(Al)	1(Ti)	19(Fe)	——
625	≤0.1	21.5	8.5	3.6(Nb)	0.25(Al)	0.25(Ti)	≤5(Fe)	——

Other alloys and tailored particle size distributions, not listed, are available on request.
可根据客户需求提供其他成分产品