Data Sheet -ZDXPOM Fe50Ni B

（材料属性参考表）

产品 Product	Fe50Ni B (通用型） Fe50Ni B (For general-purpose)		
产品描述 Product description	金属注射成型原料 Feedstock for metal injection moulding.		
收缩率 Oversize factor	Min. 1.213	Average 1.216	Max. 1.219
熔体流动指数 MFI g/10min	min. 500	Average 800	Max. 1100

DIN EN ISO 1133 (190℃/21.6kg)

烧结后典型成分
（按重量百分比计算）
Typical composition after Sintering

	Fe	C	Cr	Ni	Mo	Mn	Si	S	P
>	-		-	49.0	-	-	-	-	-
<	Bal.	0.01	-	51.0	-	-	-	-	-

典型特性
Typical properties

项目 Project	as sintered 烧结态
密度 Density	>7.85 g/cm³
矫顽力 Hc Coercive force	10 A/m (@烧结密度 7.85g/cm³)
剩余磁感应强度 Residual magnetic induction	0.8T
磁导率 Permeability	μ_{max} =28000(@烧结密度 7.85g/cm³)
磁化强度 Magnetization intensity	Js(4Ka/m)=1.36T
硬度 Hardness	110-160HV10

注射工艺
Injection process

建议注射温度 Recommended injection temperature	Zone1 185℃	Zone 2 185℃	Zone 3 175℃	Zone 4 150℃	Nozzle 190℃
建议模具温度 Recommended injection temperature	90-125℃				
参考生坯密度区间 Reference density interval	5.07-5.13g/cm³				

其余注塑工艺参数受到产品形状及要求影响较大，故未写出。
需要注意的是，注塑工艺的设定对于产品的生坯密度有着较大的影响，而这也可能导致产品最终尺寸和其他要求不符使用者的期望。
Other injection molding process parameters are greatly affected by product shape and requirements, so they are not written out.
It should be noted that the setting of injection molding process has a great influence on the green density of the product, which may also cause the final size of the product and other requirements do not meet the user's expectations.

脱脂工艺 Debinding process	脱脂酸 Debinding acid	98% HNO_3
	脱脂温度 Debinding temperature	100-150℃
	脱脂时间 Debinding time	取决于零件厚度 Depending on part thickness (e.g. 3 mm part approx. 3h)
	脱脂工艺 Debinding process	当生坯最低脱脂率 达到 9.8%时，可以终止脱脂制程 When the minimum debinding rate of green part when it reaches 9.8%, the debinding process can be terminated.
烧结工艺 Sintering process	烧结气氛 Sintering atmosphere	氩气烧结 100% dry argon
	烧结载具 Sintering substrate	氧化铝陶瓷片 Non-metallic base (e.g. Al2O3)
	负压脱脂 Negative pressure degreasing	从室温升高至 600℃过程中，采用有多段持温的负压脱脂，以确保剩余粘结剂能被脱脂干净，总时间 450min 左右。 From room temperature to 600 ℃, vacuum debinding with multi-stage holding temperature is used to ensure that the remaining binder can be removed completely, and the total time is around 450 min.
	真空烧结 Vacuum sintering	从 600℃以 3℃/min 升温至 850 摄氏度持温一段时间进行真空内烧，目的是确保产品碳含量在合理区间。 From 600 ℃ to 850 ℃ at 3 ℃ / min and holding for a period of time, the vacuum internal sintering is carried out to ensure that the carbon content of the product is in a reasonable range 。
	分压烧结 Partial pressure sintering	从 850℃以 3℃/min 升温至 1050℃后短暂持温，之后以同样的升温速度升高至 1260℃，使得材料致密化，最后随炉冷却。 From 850 ℃ to 1050 ℃ at 3 ℃/ min, holding for a short time, and then it was raised to 1260 ℃ at the same heating rate for material densify, and finally cooled with the furnace。
保质期 Shelf life	如果储存得当：12 个月，防止原料受潮。 If stored appropriately: 12 months. Protect feedstock against moisture.	