

表面處理 Surface Treatment

對稀土磁鐵做優良的表面處理可以增加可靠性及信賴性，以達到長使用壽命之要求。
Excellent surface treatment of rare earth magnets can increase reliability and trustworthiness to achieve long service life.

序號 No	鍍層 Plating	鍍厚 Plating thickness	性 能/ Properties							潤濕性 Wettability	
			鹽 霧 Salt spray test	PCT	濕 热 Humidity resistance	結合強度 Binding strength	絕緣性 Insulation	高溫減磁 High temperature reflux loss	綜合性能及評價 Comprehensive performance and evaluation		
1	酸洗加環氧 pickling plus	20-30μm	240H	24H	500H	良/Good	優/Very good	0	防腐性能優越，鍍層易劃傷，200度以下使用 Excellent anti-corrosion performance. Plating is easily scratched. Use below 200°C.	33	
2	磷化加環氧 Phosphate plus epoxy	20-30μm	500H	24H	500H	好/Fair	優/Very good	3~5%			
3	銅加環氧 Copper plus epoxy	20-30μm	500H	48H	500H	良/Good	優/Very good	5%以下 < 5%			
4	鋁加環氧 Aluminum plus epoxy	20-30μm	500H	96H	500H	優/Very good	優/Very good	0			
5	鋅鉛塗層 Zinc-aluminum coating	15-30μm	200H	48H	200H	良/Good	一般/OK	1	高溫減磁佳，防腐性能優越，高溫高壓條件不適用 Good demagnetization at high temperature. Excellent anti-corrosion performance. Not suitable for high temperature and high-pressure conditions	38	
6	噴塗環氧 Spray epoxy	15-30μm	200H	96H	200H	一般/OK	優/Very good	0	鍍層容易劃傷，防腐性能一般適用於高溫環境 Plating is easily scratched. Anti-corrosion properties are generally suitable for high temperature environments	38	
7	鍍鋅 Galvanized	彩膜 Color film	<10μm	72H	白銹/white rust 200H	良/Good	差/Bad	1%以下 < 1%	環保性能純化適合於多種環境，高溫環境不適用 Environmental performance passivation is suitable for a variety of environments. Not suitable for high temperature environment	38	
8	鍍鋅 Galvanized	藍白 Blue & white		48H		良/Good					
9	單鎳 Single nickel	10-30μm	12H	96H	500H	良/Good	差/Bad	3%以下 < 3%	耐鹽霧、耐濕熱極佳，失重根據要求不同，各有不同。 其中一般銅鎳鹽霧72H的高溫減磁在5%以下，而高溫減磁工藝的銅鎳則在1%以下。		
10	銅鎳 Copper Nickel		24H			良/Good					
11			48H			良/Good					
12			72H			好/Fair			亮鎳工藝的鹽浸在48小時以上，高溫減磁在1%以下雙層鎳的高溫減磁在1%以下，鹽霧200小時與化學鍍相當	36	
13			72H			良/Good			Excellent resistance to salt spray, heat and humidity. Weight loss varies according to requirements.		
14			200H			良/Good			Among them, the high-temperature flux loss of copper-nickel under salt spray 72H is less than 5%, while the copper-nickel of high-temperature demagnetization process is less than 1%.		
15	化學鍍 Chemical plating		200H			好/Fair			The high-temperature flux loss of bright nickel under salt immersion over 48 hours is less than 1%.		
16	磷化 Phosphorization	<5μm	差/Bad(0.25H)	差/Bad	24H	好/Fair	較差/ Rather bad	5%以下 < 5%	無鍍層中抗溫熱較佳，鹽浸不好 Good resistance to heat and humidity when uncoated. Poor in salt immersion	33	
17	新磷化 New phosphorization	<3μm	差/Bad(0.25H)	差/Bad	24H	好/Fair			無鍍層中抗溫熱較佳，鹽浸不好 Good resistance to heat and humidity when uncoated. Poor in salt immersion		
18	酸洗鈍化 Pickling passivation	<2μm	差/Bad(0.25H)	差/Bad	差/Bad (2H)	好/Fair		0	無鍍層中鹽浸較佳，但溫熱不佳 Salt immersion is better when uncoated, but not heat and humid resistant.	37	
19	新酸洗鈍化 New pickling passivation	<2μm	差/Bad(0.25H)	差/Bad	24H	良/Good		0	結合力在無鍍層中略差，其他都很好 Bonding force is slightly worse when uncoated, other attributes are good.	33	
20	藍色轉化膜 Blue conversion coating	<3μm	差/Bad(0.25H)	差/Bad	24H	好/Fair		0	處理過程不使用化學品，對磁體無影響 No chemicals are used in the process and have no effect on the magnet.	38	
21	鍍鋁 Aluminum plating	5-25μm	500H	200H	200H	優/Very good	差/Bad	0	高溫減磁與基體相同，防腐性能優越 The high temperature flux loss is the same as the substrate. The anti-corrosion performance is superior.	38	