

**SCM Metal Products (Suzhou) Co., Ltd.**  
元磁新型材料(苏州)有限公司

## Infiltration Copper Powder IP-97S 滲銅粉

IP-97S 合金滲銅粉,低殘渣,滲銅效率 97%以上,滲銅表面無腐蝕現象; 適合於低露點燒結氣氛 (如氮氣+分解氨);

### POWDER COMPOSITIONS

	<u>SPECIFICATIONS</u>	<u>TYPICAL</u>
銅 Copper, %	93.0 to 98.0	95.0
潤滑劑 Lubricant, %	0.4 ~ 0.6	0.5
其它 Others, %	Balance	— —

### PHYSICAL PROPERTIES

Grade : **IP-97S**

	<u>TESTING</u>	<u>SPECIFICATION</u>	<u>TYPICAL</u>
松裝密度, g/cm <sup>3</sup>	MPFI 04	2.5 to 3.5	3.00
流秒, s/50g	MPIF 03	40 max.	31
粒度分佈, Tyler, % (before lub/s)	MPIF 05		
-60/+100 mesh (149 to 221 μm)		1.0 max.	0.5
-100/+200 mesh (105 to 149 μm)		----	30.0
-200/+325 mesh (149 to 44μm )		-----	30.0
-325 mesh (<44 μm)		30.0 to 50.0	40.0

### Compacting Properties

IP-97S 適合生胚密度為 7.0 g/cm<sup>3</sup>; 但若是使用非常乾燥的燒結氣氛時, 建議可適當的降低成型密度, 能將滲銅片成型即可;

成型壓力, tsi	MPIF 45	20 min	25 max
成型壓力, N/mm <sup>2</sup>		285 min	362 max
成型壓力, psi	MPIF 15	700 min.	
成型壓力, N/mm <sup>2</sup>		4.83 min.	

### Infiltrating Properties

Determined on matrix of 99% Fe, 0.9%C infiltrated with IP-97S for 25 minutes at 1120°C (2050.F) in — 40°C (— 40.F) dew point nitrogen/cracked ammonia mixed gas.

- ✓ 試樣鐵基零件為 99%的鐵粉, 0.9%含碳量,
- ✓ 滲銅燒結條件: 25 分鐘/1120°C, 露點 -40°C, 氣氛為氮氣和分解氨.

TYPICAL IP-97S PERFORMANCE		
Matrix Density	鐵基零件生胚密度	6.7 g/cm <sup>3</sup>
Adhesion	附著性	Slight
Erosion	腐蝕性	Very Slight
Efficiency	效率	97%

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中國江蘇省蘇州市吳中經濟開發區旺山工業園南官渡路三號 PC : 215 104  
TEL: 86 (512) 6655 2860 • FAX: 86 (512) 6655 2859

Infiltrated density	滲銅後密度	7.5 g/cm <sup>3</sup>
Dimensional Change	尺寸變化	+0.10%
Transverse Rupture Strength	橫向斷裂強度	215,000 psi
Hardness, HRB	硬度	86

## APPLICATIONS

Infiltration is the process of filling the pores of a sintered or unsintered compact with a metal or alloy of a lower melting point. **IP-97S** is a low residue, high efficiency type copper infiltrating powder specifically designed for use with alloy steel compacts. The infiltration process will produce parts with greater density, increased strength, toughness, hardness, and improved impact strength. Infiltrated parts can be easily plated, can be welded or brazed and have improved machinability. This technique can also be used to produce pressure tight components. Infiltrated steel parts will respond to normal heat treatment practices. **IP-97S** infiltrating powder may also be used to produce iron-carbon steel parts.

滲銅工藝為在燒結或未燒結粉末成形零件中填滿其空隙，已達到提高零件密度，強度，韌性，硬度，和抗衝擊強度的目的。IP-97S 為一低殘渣，高滲透率的滲銅粉，特別設計應用在合金鐵基零件上。滲銅製程使零件容易電鍍，焊接或是銅鍍，和增加後加工性；另外，也有助益於熱處理工序。IP-97S 也可用於鐵碳結構件。

## 物質安全資料 MATERIAL SAFETY DATA

使用前、敬請先參閱 MSDS (See MSDS before using this product.)

## 樣品 和 服務 SAMPLES AND SERVICES

For further information or sample quantities for test, contact our Customer Service Department.

Visit our website at [www.scmmetals.com](http://www.scmmetals.com)

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對於以上的建議、我們不提供絕對的保證；而是應該根據的實際應用條件和產品最終目的，來決定本產品的適用性；也不建議在被未被允許的情況下，再次引用而造成對其它專利或發明的侵害；由於並不知悉使用端特別的使用目的，對於 the provision of the Federal Food Additives Amendment of 1958，也不提供保證；

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