WC/12%Co Thermal Spray Powder SURPREX WC12

■SURPREX WC12

SURPREX WC12 is an agglomerated and sintered composite powder of WC/12%Co for thermal spray.

<Product feature>

1. Free of spitting by powder classification technology and particle strength control
2. Designed for various types of High-Velocity Flame Spray Guns to achieve higher deposition efficiency

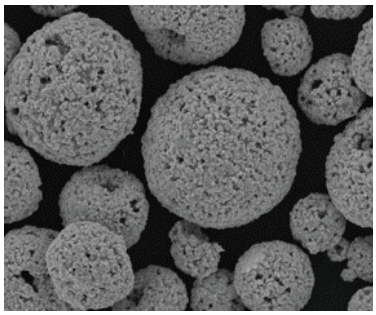
■Typical Particle Size Distribution

wt%

Type	Size (μm)	+53	+45	+38	+32	-20	-15	-10
L	-53+15	3.1	14.9	37.0	—	2.9	0.4	—
J	-45+15	—	4.4	12.1	23.5	16.8	3.3	—
D	-38+10	—	—	1.3	3.9	—	9.4	0.6

FUJIMI has sophisticated classification technology and 3 types of powder size are available for in the SURPREX WC12 range to suit different spray galso be customized to suit a wide range of application needs.

■SEM Image of Spray Powder Particles

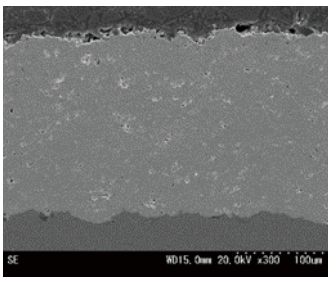


■Typical Chemical Composition

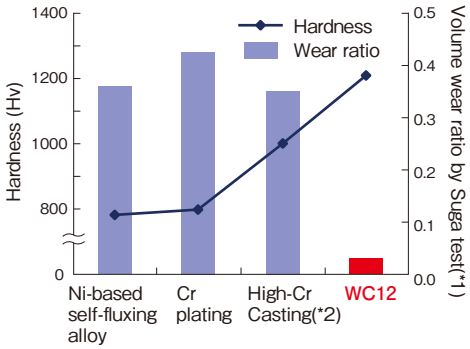
Composition (wt%)			
W	C	Co	Fe
Bal.	5.4	12.0	0.1

Coating Characteristics

■Structure of SURPREX WC12



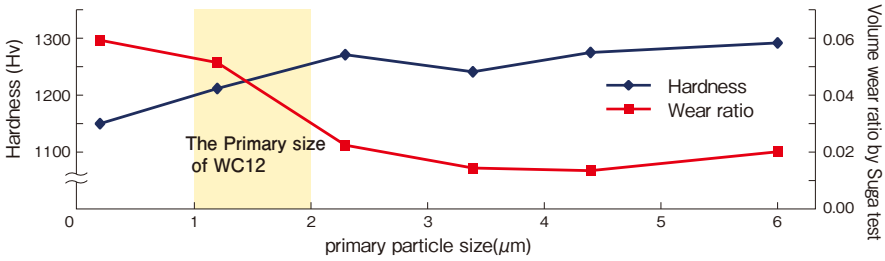
■Comparative Wear Ratio of Various Materials



A Comparison is made of dry wear resistance by Suga method among WC12 and three popular wear resistant materials. WC12 exhibit high hardness and wear and abrasion resistance.

(*1) A specimen reciprocates under load on abrasive paper fixed to a rotating friction ring. The wear of specimen is rated, then, against the base value of subsrate(SS400).
(*2) Ternary Fe-Cr-Si alloys including 7% chromium.

■Influence of Primary Particle Size of WC on Hardness and Wear Ratio



FUJIMI has investigated how the primary particle size of WC influences the properties of WC/12%Cocoating, and we have found that there is a strong relationship between primary size of WC (raw material) and properties of sprayed coating. In WC12, we have set the size at 1～2μm with considerations of cost-performance and we can also customized the primary size of WC for higher abrasive resistance.

Applications of WC12

■Applications of WC12

<Coating Characteristics>
- ●High hardness
- ●High toughness
- ●Abrasion resistance
- ●Wear resistance (under 500℃)

<Applications>
- ●Printing machinery parts
- ●Pump rotor ●Snake rotors
- ●Guide rolls
- ●Injection molding machinery parts

WC12 is applied in the Iron industry, the paper industry, and the machine industry with WC12 hardness and ware resistance.

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FUJIMI INCORPORATED

FUJIMI INCORPORATED
Thermal Spray Materials Department
82-28, Kakamihigashimachi-5, Kakamigahara,
Gifu, 509-0103, Japan
TEL:+81-583-79-3088 FAX:+81-583-85-4853