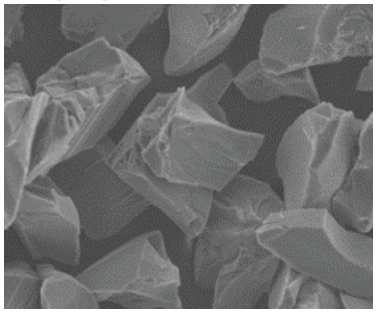
Aluminum Oxide Thermal Spray Powder SURPREX AG・AW・AHP

■Aluminium Oxide

FUJIMI's aluminium oxide is an fused and crushed Al_2O_3 powder for thermal spray.
<Product feature>
1. Free of spitting by powder classification technology.
2. Designed for various types of Plasma Spray Guns to achieve higher deposition efficiency.

■SEM Image of Spray Powder Particles



■Manufacturing Method

FUJIMI's aluminium oxide is single crystal α- Al_2O_3 with blocky shape particles. FUJIMI manufactured aluminium oxide with fused and crashed method. Compared to the method of Chemical Vapor Deposition, we can supply aluminium oxide with relatively low-cost. We improved excellent flowability of aluminium oxide powder in production processes for working efficiency, and the prevention of and black spot at the surface of aluminium oxide coating.

■Aluminium Oxide Size and Chemical Composition

Type	Grade	Purity	Typical Chemical composition (wt%)					Size(μm)
			Al_2O_3	SiO_2	Na_2O	Fe_2O_3	TiO_2	
AG	Gray aluminium oxide	—	96.5	0.31	—	0.08	2.44	-75+38、-68+32、-53+25、
AW	White aluminium oxide	over 99.6	99.9	0.02	0.02	0.01	—	-53+20、-53+15、-38+8
AHP	High purity aluminium oxide	over99.9%	99.95	0.02	0.02	0.01	—	-38+8、-45+10

FUJIMI supply many types of aluminium oxide powder for thermal spray in purity and powder size.
・In purity, 3 types of aluminium oxide purity are available for FUJIMI's aluminium oxide. 1) Gray aluminium oxide (Al_2O_3-2.5%TiO_2) used in wear resistant parts 2) White aluminium oxide (Al_2O_3 over 99.6%) used in wear resistant parts and insulated parts 3) High purity aluminium oxide (Al_2O_3 over 99.9%) used in the semiconductor and liquid-crystal-display production equipment .
・In powder size, many types of powder size shown in the table are available for FUJIMI's aluminium oxide. Powder size can also be customized to suit a wide range of application needs.

Coating Characteristics

■Black Spot Measures at High Purity Aluminium Oxide

High purity aluminium oxide thermal spray coating as Anti-plasma erosion resistance is used in in the semiconductor and liquid-crystal-display (LCD) production equipment. High purity aluminium oxide thermal spray coating is needed pure-white surfaces without black spots to prevent silicon wafers from contaminations.

<Current aluminium oxide coating>

<FUJIMI's high purity aluminium oxide coating>

Appearance of black spots on the coating surface sometime become a trouble, when thermal spraying with high purity aluminium oxide. The black spots might be caused with contaminations in thermal spray powder, and/or the environment around thermal spraying. FUJIMI's high purity aluminium oxide is modified to prevent black spots, and offer pure-white surfaces without black spots.

Applications

■Applications of Aluminium Oxide

<Coating Characteristics>
●Wear resistance
●Chemical Stability
●High purity
●Anti-plasma erosion resistance

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<Applications>
●Wear resistance parts
●Insulated parts
●Semiconductor and LCD

FUJIMI's aluminium oxide is applied in the paper industry, and the machine industry with aluminium oxide Wear resistance, insulator, and anti-plasma erosion resistance .

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