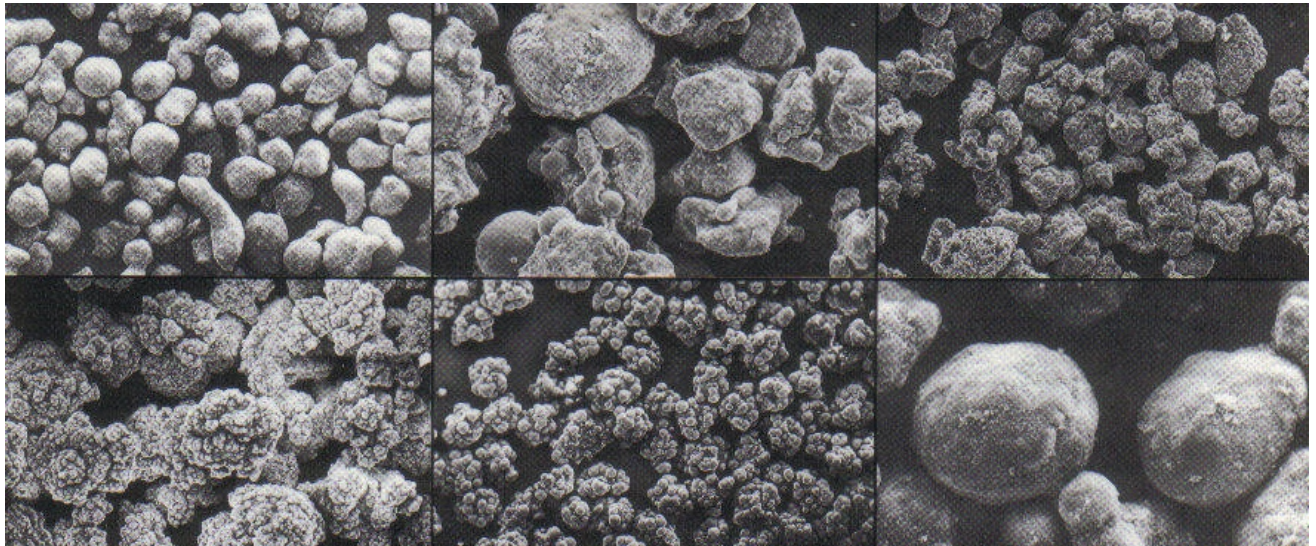


CERMET COMPOSITE POWDERS

Cermet Composite Powders are usually composed of metals and ceramics. Their coatings exhibit excellent comprehensive properties which are superior to those of single metals or single ceramics. Currently, Metal/Graphite, Metal/BN and Metal/Oxide Ceramic Powders have been widely used as wear resistant, oxidation resistant, abradable and sealing coatings. During the thermal spray stage, the metallic components in the powders are inlaid in ceramic particles, which facilitate the combination of coat with substrate.

Among Cermet Composite Powder, Metal/(Graphite, BN) composite powders can be employed for flame spraying. Their coatings possess excellent sealing properties in addition to lubricating friction-reducing functions. These composite powders can also be selected according to the metallic components to meet a range of application requirements. Metal/Oxide Ceramic composite powders can be applied by plasma spray or flame spray. These coatings resist wear, oxidation, thermal shock, etc. These Metal/Oxide Ceramic Composite Powders can be applied as both bond layer for ceramic coatings and service coatings.



POWDER	PARTICLE SIZE (MESH)	TYPICAL COMPOSITION (%)	COATING FUNCTION & APPLICATIONS
TS-310 Aluminum-Silicon and Graphite	-140+325	Al: 57 Si: 8 Graphite: Balance	* Abradable clearance control coating in compressor sections of aircraft jet engines; * Used in range of 315~480°C
TS-313 Aluminum-Silicon and Graphite	-140+325	Al: 40 Si: 5.5 Graphite: 45.5 Organic Binder: 9.0	* Excellent erosion resistance; * Good as abradable clearance control coating for titanium or aluminum alloy rotors of gas turbine engines at 315~425°C

CERMET COMPOSITE POWDERS

POWDER	PARTICLE SIZE (MESH)	TYPICAL COMPOSITION (%)	COATING FUNCTION & APPLICATIONS
TS-21 Nickel Clad Graphite	-140+325	Ni: 75~80 Impurity < 2 Graphite: Balance	* Excellent lubricity & bonding property; * Good as coating for (<550°C) moveable seal parts & abradable seal rings of aero-engines; * for low friction bearings & sealing parts
TS-23 Nickel-Copper-Aluminum & Graphite-Boron Nitride	-140+325 80% -325 20%	BN: 3~5 Al: 5~7 Cu: 40~45 Graphite: 10~15 Ni: Balance	* Good as abradable sealing coating (T<550°C) for titanium alloy parts
TS-25 Copper Clad Graphite	-140+325	Cu: 70 Impurities < 2 Graphite: Balance	* Excellent mechanical and welding performance, good electric conductivity; * Employed in switches as low friction materials
TS-43 Nickel-Chromium-Iron-Aluminum & Boron Nitride	-140+325 80% -325 20%	BN: 5~7 Al: 5~7 Fe: 6~8 Cr: 14~16 Ni: Balance	* Applied as abradable clearance control coating for aero-engine at temperature up to 815°C
TS-45 Nickel Clad Alumina	-140+325	Ni: 25~80 Impurities < 2 Al ₂ O ₃ : Balance	* Resistant to high temperature, wear, corrosion, thermal shock and oxidation; * Fair thermal insulation
TS-71 Nickel Clad Chromium Oxide	-140+325	Ni: 70~80 Cr ₂ O ₃ : 30~20	* Resistant to wear and high temperature * Compact coating
TS-84 Nickel Clad Diamond	-200+325	Ni: 20 Diamond: Balance	* High hardness, resistant to wear and to particle erosion; * Good for use in wear-resistant and cutting materials
TS-93 Multi-Metal-Graphite Composite Powder	-200+400	Cu, Fe, (etc.): 70 Graphite: Balance	* Excellent abradable sealing property; * Good as clearance sealing coating for aero-engine
TS-116 Nickel-Chromium-Aluminum and Boron Nitride	-140+325	BN: 5~6 Al: 5 Ni-Cr: Balance	* Good as abradable sealing coating at high temperature
TS-118 Nickel-Chromium-Aluminum and Graphite	-140+325	Graphite: 10 Al: 5 Ni-Cr: Balance	* Acting as sealing coating for compressor sections of aircraft engines
TS-119 Copper-Aluminum-Nickel & Graphite	140+325	Graphite: 7~10 Al: 5~7 Ni: 25~30 Cu: Balance	