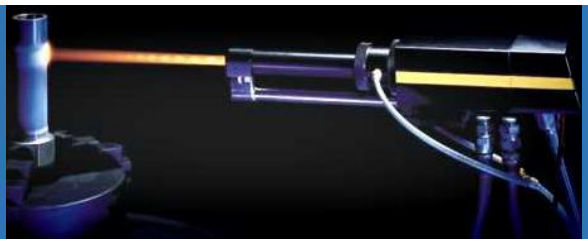
LW POWDER

LWPM



Thermal spraying&weldings









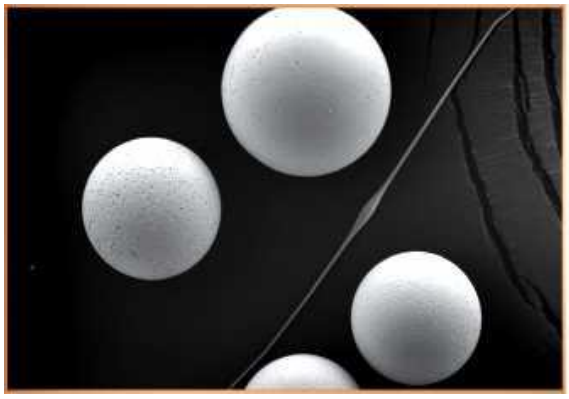
INTRODUCTION

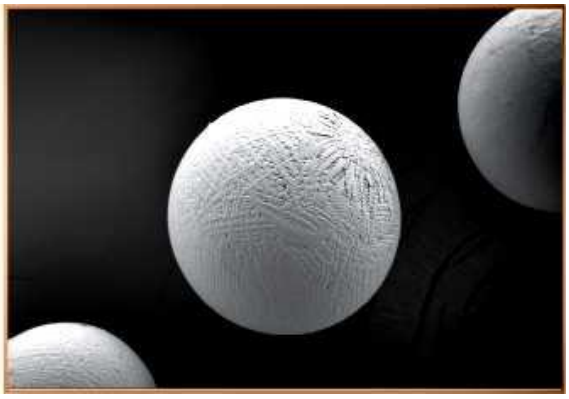
Thermal spraying technology is widely used in pre-protection and remanufacturing industries. The thermal spraying techniques are coating processes in which melted (or heated) materials are sprayed onto a surface.Coating materials include metals, alloys, ceramics, plastics and composites. They are mostly fed in powder form. Thermal Spray Powders are used in a variety of applications including Plasma Transfer Arc (PTA), Spray and Fuse, High Velocity Oxy-Fuel (HVOF), Laser Additive (3D print).

Typically, these applications require hardness, morphology and a particular particle size distribution. The hardness of powder are between HRC 15 and 70. Particle size distribution can be adjusted according to customer needs.

Nickel base alloy powder

These powders include Ni-B-Si Ni-Cr-B-Si, Ni-Cr-B-Si-P, Ni-Cr-B-Si-Cu-Mo, Ni-Cr-B-Si-W, Ni-Cr, and Ni-Cu alloys. They are used for applications with great corrosion resistance or oxidation resistance. Under 500° C, they have excellent low-stress abrasion and adhesive wear resistance. These powders can be applied into a variety of processes, such as, oxyacetylene spraying or overlaying. HVOF/HFAF spraying. Plasma transferred are (PTA) overlaying, plasma spraying, laser overlaying, induction melting overlaying, centrifugal casting, 3D printing and powder metallurgical processing. Key applications include valve gates, ball valve surface, valve seats, pistons, plastics extruder screws, glass molds, steel mill rolls, wire drawing rolls, oil pumping shafts, fan blades, screw conveyors and tungsten carbide tools.





Nickel base self-melting alloy powder

Grade	HRC	Chemical Composition											Particle Size (mesh)	Typical Application
		C	Cr	Si	W	Fe	Mo	Ni	Co	Mn	B	Others		
Ni15AA	15	0.03	0.46	2.3		0.46		Bal		0.09	0.9	Cu: 20.0	180/500	Bonding layer for WC coatings
Ni20M	20	0.03	4.5	2				Bal			0.7		180/500	Glass molds or other molds
Ni22AA	22	0.2	0.1	2.85		0.5		Bal		0.5	1.45		180/500、100/270	Glass molds or other molds
Ni22M1	26	0.03	0.5	3		0.5		Bal		0.5	1		180/500	Glass molds or other molds
Ni25	25	0.2		3.5		8		Bal			1.5		180/500、150/2300	Glass molds or other molds
Ni28M	28	0.05	0.1	2.8				Bal			1		180/500	Glass molds or other molds
Ni30AA	30	0.15Max	2.5	2.6		1		Bal		0.3	1.4		180/500、150/300	Rails, gear teeth
Ni31M	31	0.05Max	4	2.4		3		Bal			0.9		180/500	Glass molds or other molds
Ni31M1	32	0.05Max	3.5	3.2		3.0Max	0.1	Bal		0.3	0.9		180/500	Glass molds or other molds
Ni35AA	35	0.2	4	3.2		1.4		Bal		0.1	1.6		150/300	Glass molds or valve seats
Ni35	35	0.3	10.5	3.5		10		Bal			2		150/300	Glass molds or other molds
Ni36M	36	0.05Max	4	2.5		3.0Max		Bal		0.5Max	1.1		180/500	Glass molds or other molds
Ni37M	35	0.15	4.5	2.8				Bal		0.5Max	1		180/500	Glass molds, forging dies and heads
Ni40AA	40	0.3	7.5	3.5		2.3	0.1	Bal			1.7		150/300	Screw conveyors, forging mold parts
Ni46M	46	0.05	6.54	2.8		1		Bal			1		180/500	Glass molds or other molds
Ni50AA	50	0.45	11	4		2.7	1	Bal			2.2		150/300	Forging heads, valves
Ni55	53	0.4	15	4.3		5.0Max	*2.5*	Bal			3.1	Cu:2.5	150/300 mesh 53/20	Grinding tools, cam gears, pistons, exhaustvalves
Ni65AA	56	1	18	5.3		5.0Max		Bal			1.9		100/270	Valves, molds, extrusion screws
N16OAA	60	0.78	15.9	4.55		5.0Max	/	Bal	/		/		150/300 mesh	Pistcns. valves, pump blades, extrusion scraps
Ni60A	60	0.7	15	4		8.0Max		Bal			3.2		150/300 mesh	Pistcns, valves, pump blades, extrusion screws
Ni60	60	0.8	16	4		15.0Max		Bal			3.2		150/300	Pistons, valves, pump blades, extiusbn screws
N16OS	60	0.8	15.5	3.8			0.1	Bal			3.4		150/400	Extrusion screws
ND500	52	1.2	20.5	2.9		3.0Max	5.5	Bal	13		2.3		100/270	Specifically used for extrusionequipment, injection molding extrusion screws oxyacetylene weld overlaying
NF601	60	0.78	15.5	3.2		5.0Max	2.5	Bal	3		4		150/400	Specifically used for extrusionequipment, injection molding extrusion screws,oxyacetylene weld overlaying
Ni60B	60	0.6	17.1	3.1		25		Bal			4		150/300 mesh	Pistons, extrusion molds, pump blades, extrusion screws
Ni60AACuMo	58	0.5	15.5	4		3.0Max	2.5	Bal			3.5	Cu: 2.5	150/300 mesh	Pistons, extrusion molds, pump blades, extrusion screws
Ni60ACuMo	60	0.8	15.5	4		15.0Max	1	Bal			3.5	Cu: 1.0	150/300	Pistons, extrusion molds, pump blades, extrusion screws
N16OW	62	0.8	16	4		15.0Max		Bal			3.3		150/300	Pistons, pump blades,
Ni60CuMoW	60	0.6	16	4		4	2	Bal			4	Cu: 2.0	300/500	Pistons, pump blades, ball valves
Ni220	31	0.15	5	3		2		Bal			2.2	Al: 0.9	100/270	Glass molds for preliminary molding
Ni220M	26	0.05Max	4.5	3.2		3.0Max		Bal			1	Al: 0.8	100/270	Glass molds for preliminary molding
Ni330	37	0.1	5	3.5		6		Bal	Cu:25		1.2		100/270	Glass molds for preliminary molding
N22APTA	28	0.05Max	4.5	3.8		3		Bal			1		100/270	Glass molds for preliminary molding

Nickel base super alloy powders

GRADE	Chemical Composition										Typical Application
	C	Cr	Si	w	Fe	Mo	Ni	Co	Mn	Size	
NiCr20	0.2Max	20	1	/	0.5Max	/	Bal	/	0.5Max	53-20 um	Bonding layer for WC coatings
NiCr50	1.0Max	50	1	/	0.5Max	/	Bal	/	0.5Max	106-45 um	Pulp-making pump, power generation boilers, parts in a corrosive environment containing vanadium and sulphur
Ni625	0.1	23	/	/	5	8.0-10.0	Bal	/	/	53-20 um	Parts subject to seawater corrosion, such as, in aerospace or aeronautical industry and chemical processing
Ni-C	0.1	16.5	0.9	4.5	5.5	17	Bal	2.0Max	0.9	53-20 u m	Paper-making machine
Ni-SuperC	0.5MAX	23,0	/	/	/	18	Bal	/	/	53-20 m	Paper-making machine
Ni276	0.01MAX	15.5	0.03	4	/	16	Bal	2.5Max	1	53-20 u m	Temperature oxidation
Mn400	0.15MAX	/	1.25	/	1.5	Ti: 2.0	Bal	/	3.5	53-20 h m	Chemical or petrochemical processing equipment parts

Nickel Coated Tungsten Carbide Powders

GRADE	HRC	Chemical Composition	Mesh Size	Typical Application
NiWC5	60	95%Ni60+5%WC	150/300,150/400	Extrusion screws, barrels, pistons
NiWC10	62	90%Ni60+10%WC	150/300,150/400	Extrusion screws, barrels, pistons
NiWC15	62	65%Ni60+15%WC	150/300,150/400	Valves, pistons
NiWC20	63	65%Ni60+20%WC	150/300,150/400	Valves, wire drawing dies, pistons
NiWC25	63	65%Ni60+25%WC	150/300,150/400	Valves, wire drawing dies, pistons
NiWC35	65	65%Ni60+35%WC	150/300,150/400	Wire drawing pulling wheels, fen blades, screw conveyors

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