



## Plasma Powders & Systems, Inc. Thermal Spray Powders

This list is not a complete listing of powders supplied by Plasma Powders. We stock many of the items below and can also develop custom blends, or equivalents to many of the powders available from other manufacturers. Please contact us regarding your powder or any of your Thermal Spray related needs. Our friendly, knowledgeable staff is committed helping you succeed.

### Nickel Base

PPS Item	Chemistry	Equivalent/ Similar	Short Description
PWD00002	Ni-Cr-Fe Alloy Rb 80-87	Metco 44	Nickel-Chrome alloy. Salvage, buildup. Machine finish.
PWD00004	Ni-Cr-Al-Si-B Rc 34	Metco 451	Nickel-Chrome-Alum alloy. Particle erosion, Salvage, Buildup.
PWD00007	Ni-Si-B Rc 18		A self-fluxing Nickel base powder for soft machineable spray and fuse applications.
PWD00008	Ni-Cr-Mo-Si-B Rc 40	Metco 14E	Fusible, Self fluxing, Hard, thick wear resistant coatings. Fuse Temp 1850-1900°
PWD00009	Ni-B-Si-P Rc 29-34	Self fluxing Ni alloy	Relatively soft coatings and extremely good wetting properties. Can be finished with Carbide tools. General repair work; filling blow-holes in cast iron, glass molds, pump parts etc.
PWD11-450	Ni-Al	Metco 450	Nickel/Aluminum 95/5. General purpose. Bond, use under ceramics, compressor abrasives, Restoration, High-temp particle erosion. 3,500 PSI flamespray bond. 10,000 PSI Plasma Spray Bond
PWD00012	Ni-Cr-Mo-Fe-Al Rc 23	Metco 442	Wear, Corrosion, erosion protection and salvage. Plasma spray Rc 45.
PWD00013	Ni-Cr-Al Rb 80-92	Metco 443 Eut. 29033 Eut. 19222	A Ni-Cr-Al self-bonding composite powder for excellent resistance to high temperature oxidation and corrosive gases. Can be finished by Carbide tools or grinding. For salvage and buildup of Ni and Ni alloys where high temperature oxidation is encountered. PA # 13 is NOT self-bonding when Combustion sprayed though it exhibits high bond strength; hence correct surface preparation is advised for combustion sprayed coatings. However with the Plasma Spray process, it is self-bonding.
PWD00014	Ni-Cr-Mo-Fe-Al, B, Si Rb 80	Metco 444	Wear, Corrosion, erosion protection and salvage.
PWD00017	Ni-Al-Mo Rb 80	Metco 447 Eut. 50000	Tough and hard coatings with moderate resistance to scuffing, fretting and erosion and good impact resistance.
PWD00033	Ni-Cr-Si Rb 70	Metco 43C	Coatings are resistant to oxidation and corrosion at temperatures up to 1800degF. Coatings are easily machineable with Carbide tools. Used as an oxidation resistant undercoating for ceramics in high temperature oxidation resistant applications and for buildup on Carbon and low alloy steels.
PWD00101	Ni-Cr-Si-Fe-B Rc 59-62	Metco 15E Eut. 10009	A Ni base self-fluxing powder material for hard facing with the Oxy-Acetylene torch. Produces dense, hard, grindable coatings which resist wear by abrasive grains, hard surfaces and particle erosion. Fuses to a very smooth finish. Can be finished by grinding only. Applications include brake drums, forging tools, exhaust valves and seats etc.

**Copper Base**

PPS Item	Chemistry	Equivalent/ Similar	Short Description
PWD00003	Cu-Al Alloy Rb 80-85	Metco 51NS	Aluminum-Bronze alloy. Corrosion, oxidation, cavitation resistance. May require Bond coat.
PWD00015	Cu-Al Rb 50	Metco 445 Eut. 19122	Aluminum Bronze. Corrosion, oxidation, cavitation resistance. Self Bonding
PWD00023	Cu-Al-Ni Rb 90-95	Eut. 29079 Eut. 19868	Wear resistant machineable Aluminum Bronze coatings. Has a better wear resistance than our PA # 3 and is used where coatings with higher wear resistance are recommended.
PWD00153A	Cu Rb 60-80	-	A pure Copper powder used for electrical contact areas for higher conductivity and for RF shielding. It is also used for salvage and buildup of Copper and Copper alloy parts. Can be machined easily.

**Iron Base**

PPS Item	Chemistry	Equivalent/ Similar	Short Description
PWD00005	Fe-Cr-Ni-Mo Rb 83-92	Metco 41C	Iron base stainless similar to 316L SS. Dense machineable coatings resistant to corrosion & wear.
PWD00006	Fe-Cr-Ni Rc 35	Metco 42C	Iron base stainless similar to 420 SS. High tensile strength, good toughness and good corrosion resistance.
PWD00018	Fe-Al-Mo Rb 85	-	An inexpensive Iron base self-bonding composite powder containing Aluminum as an exothermic component. Can be used for heavy buildups without cracking. Not recommended where temperatures above 7000F are encountered or for corrosive atmospheres. Can be finished with Carbide tools. Applications include bearing journals, hydraulic rams, seals, miss-machined and worn out components etc.
PWD00019	Fe-Mo-Al Rb 35-42	Metco 449	A High Carbon self-bonding composite Iron powder containing Molybdenum for hard steel coatings for hard bearing and wear resistant applications. Can be used for bearing journals, cylinder liners, crankshafts, mechanical seals etc.
PWD00064	Fe Rb 20-29	Metco 91 Eut. 19666, 29077	Inexpensive Low Carbon Iron powder. Coatings are machine-able and have good wear resistance for lubricated service. Not specified where corrosion resistance is required or heavy buildups or buffer layers. Can be finished to a fine finish.
PWD01118	Fe-Ni-Al Rb 80-85	Metco 452	Self bonding composite good for low-cost salvage and restoration of carbon or corrosion resistant steels and cast iron. High temp corrosion/oxidation resistance.
PWD0118M	Fe-Ni-Al-Mo Rb 80-85	Metco 453	Self bonding composite good for low-cost salvage and restoration of carbon or corrosion resistant steels and cast iron. High temp corrosion/oxidation resistance.
PWD420SS	Fe-Ni-Mn-Si		HVOF Cut 420 Stainless steel powder.

**Ceramics**

PPS Item	Chemistry	Equivalent/ Similar	Short Description
PWD00106F	Cr Oxide Rc 62-66	Metco 106F	A high purity Chrome Oxide plasma spray powder giving extremely hard wear and corrosion resistant coatings, particularly resistant to acids, alkalis and alcohol. Coatings resist wear caused by abrasive grains, hard surfaces, erosion and cavitation. Coatings also show anti galling properties. Excellent material for Analux rolls for the paper industry.
PWD00099T	Ti Oxide Rc 58-60	-	A specially manufactured high purity, uniformly sized Titanium Dioxide plasma spray powder which produces deposits to combat wear by abrasive grains and hard surfaces at temperatures up to 1000degF. Can be finished to excellent finish by grinding or lapping.
PWD00105NS	Al Oxide Rc 52-55	Metco 105NS	A specially sized and manufactured white Aluminum Oxide plasma spray powder to produce deposits which are dense and hard and show good resistance to wear by abrasion. Coatings also provide excellent thermal barrier and electrical insulation properties.
PWD130/87-13	Al Oxide Blend Rc 62-65	Metco 130, 130SF	A special Aluminum Oxide blend plasma spray powder which produces deposits to combat wear and heat resistant coatings for applications up to 1000degF. Coatings are dense and are resistant to corrosive effects of most acids and alkalis. Can be finished to excellent finish by grinding or lapping.
PWD136F	Cr- Si- Ti Oxide Rc 64-66	Metco 136F	Hard, dense and one of the most wear resistant of the combustion sprayed ceramic coatings.

**Carbides (HVOF)**

PPS Item	Chemistry	Equivalent/ Similar	Short Description
PWD5803	WC-Ni-Cr	Metco 5830	"Super alloy" - Alternative material developed for hard Chrome plating replacement. Excellent wear resistance for abrasion, contact with hard surfaces, particle erosion and fretting at temperatures up to 930 °F. Submerged salt water corrosion resistance.
PWD5843	WC-Co-Cr	Amdry 5843 Woka 3652 Metco 5163	86-10-4, Hard Chrome plating alternative. Industrial carbide applications.
PWD83-17	WC-Co	2005NS Metco 5143	Excellent for wear resistant coatings with service temperature < 930°F. Higher cobalt than 88-12 material resulting in tougher fretting resistant coatings.
PWD88-12	WC-Co	76F-NS Woka 3102	Hard, not recommended for corrosive media. Can be applied thicker than other carbides due to particle sizing. Resists cracking.
PWD90-10	W-Cr-Ni	Woka 3302	Tough, dense coatings. Good for Ball and gate valves, wear and corrosion resistance.

**\* This list is not complete. Plasma Powders and Systems, Inc. can supply powders to meet or exceed your Thermal Spray application requirements.**