



## 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.

| PPS Item  | Chemistry                         | Similar To                            | Short Description   |
|-----------|-----------------------------------|---------------------------------------|---|
| PWD00002  | Ni-Cr-Fe Alloy<br>Rb 80-87        | Metco 44                              | Nickel-Chrome alloy. Salvage, buildup. Machine finish.  |
| PWD00004  | Ni-Cr-Al-Si-B<br>Rc 34            | Metco 451                             | Nickel-Chrome-Alum alloy. Particle erosion, Salvage, Buildup.   |
| PWD00007  | Ni-Si-B<br>Rc 18                  |                                       | A self-fluxing Nickel base powder for soft machineable spray and fuse applications.   |
| PWD00008  | Ni-Cr-Mo-Si-B<br>Rc 40            | Colmonoy 43                           | Fusible, Self fluxing, Hard, thick wear resistant coatings. Fuse Temp 1850-1900°  |
| PWD00009  | Ni-B-Si-P<br>Rc 29-34             | Colmonoy 228                          | 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<br>Rc 23           | Metco 442                             |   |
| PWD00013  | Ni-Cr-Al<br>Rb 80-92              | Metco 443<br>Eut. 29033<br>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,<br>B, Si<br>Rb 80 | Metco 444                             | Wear, Corrosion, erosion protection and salvage.  |
| PWD00017  | Ni-Al-Mo<br>Rb 80                 | Metco 447<br>Eut. 50000               | Tough and hard coatings with moderate resistance to scuffing, fretting and erosion and good impact resistance.  |
| PWD00033  | Ni-Cr-Si<br>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<br>Rc 59-62         | Metco 15E<br>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               | Similar To               | Short Description   |
|----------|-------------------------|--------------------------|---|
| PWD00003 | Cu-Al Alloy<br>Rb 80-85 | Metco 51NS<br>Metco 445  | Aluminum-Bronze alloy. Corrosion, oxidation, cavitation resistance. May require Bond coat.  |
| PWD00023 | Cu-Al-Ni<br>Rb 90-95    | Eut. 29079<br>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. |

**Iron Base**

| PPS Item | Chemistry               | Similar To                       | Short Description   |
|----------|-------------------------|----------------------------------|---|
| PWD00005 | Fe-Cr-Ni-Mo<br>Rb 83-92 | Metco 41C                        | Iron base stainless similar to 316L SS. Dense machineable coatings resistant to corrosion & wear.   |
| PWD00006 | Fe-Cr-Ni<br>Rc 35       | Metco 42C                        | Iron base stainless similar to 420 SS. High tensile strength, good toughness and good corrosion resistance.   |
| PWD00018 | Fe-Al-Mo<br>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<br>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<br>Rb 20-29          | Metco 91<br>Eut. 19666,<br>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<br>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<br>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                    | Similar To          | Short Description  |
|--------------|------------------------------|---------------------|--|
| PWD00106F    | Cr Oxide<br>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<br>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<br>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<br>Rc 62-65   | Metco 130,<br>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<br>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 | Similar To                            | Short Description  |
|------------|-----------|---------------------------------------|--|
| PWD5803    | WC-Ni-Cr  | Metco 5803                            | "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. |
| PWD86-10-4 | WC-Co-Cr  | Amdry 5843<br>Woka 3652<br>Metco 5163 | 86-10-4, Hard Chrome plating alternative. Industrial carbide applications.   |
| PWD83-17   | WC-Co     | 2005NS<br>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     | 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.   |

**\*Many Powders are available in different sizes.**

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