



HVOF POWDERS

**Powders for CJK5 HP - HVOF System &
other range of HVOF systems**

- All HVOF coatings offer good resistance to abrasion / erosion
- Hard, dense coatings with excellent corrosion resistance
- May be used with some non-HVOF application systems
- Consistant particle size distribution

19300 HV

19300 HV A low carbon, austenitic stainless steel powder which produces coatings which are resistant to high temperature oxidation (430°C / 800°F). Each lot of powder is subjected to extensive quality checks to ensure a consistent particle size distribution. The coating takes on uniform cylindrical compressive loads with Excellent machinability & Controlled permeability.

TYPICAL APPLICATIONS:

An austenitic stainless steel alloy designed for HVOF thermal spray systems that provides good resistance to a variety of atmospheric conditions. Used on pistons, valves, chemical processing parts, etc..

TECHNICAL DATA:

Typical hardness: 90 HRB

Nominal size distribution :

| US Mesh | µm | %w/w |
|---------|------|-------|
| +230 | +63 | 1 max |
| - 625 | - 20 | 3 max |

Chemistry : C < 0.1 , Ni 12.0 , Cr 16.0 , Mo 2.5 , Si 1.0 , Fe Bal.

19400 HV

19400 HV is a high chromium, iron base powder with key features such as Good wear properties, Good machinability, Controlled permeability. Each lot of powder is subjected to extensive quality checks to ensure a consistent particle size distribution.

TYPICAL APPLICATIONS:

A high chromium, martensitic alloy designed for HVOF process that provides a wear resistant coating. Used on pistons and pump parts, etc.. The alloy is not recommended for applications requiring high impact properties.

TECHNICAL DATA:

Typical hardness: HRC 35

Nominal size distribution :

| US Mesh | µm | %w/w |
|---------|------|-------|
| +230 | +63 | 1 max |
| - 625 | - 20 | 3 max |

Chemistry : C 0.2 , Ni 2.0 , Cr 16.0 Fe Bal.

55116 HVOF

55116 is a gas atomized Type 316L stainless steel powder designed specifically for application via thermal spraying. Optimum coating results will be achieved using HVOF. 55 116 powder may also be applied using high energy, low velocity combustion or plasma NTA systems. The powder is essentially spherical in shape. The HVOF coatings produced are suitable for a wide range of applications requiring resistance to corrosion, cavitation and erosion .

Service Temperature: 1000° F / 538° C (Max)

TYPICAL APPLICATIONS:

Pump impellers and plungers , Seal rings , Cylinder liners , Dimensional restoration , Turbine buckets and nozzles

TECHNICAL DATA:

Micro hardness: 375 DPH 300g
Hardness / R15N: 73 (HRC 27 converted)

Nominal size distribution :

| US Mesh | µm | %w/w |
|---------|------|-------|
| +230 | +63 | 1 max |
| - 625 | - 20 | 5 max |

Chemistry : C< 0.1 , Ni 12.0 , Cr 16.0 , Mo 2.5 , Si 1.0 , Fe Bal.

55125 HVOF

55125 HVOF is a gas atomized Ni Cr alloy powder designed specifically for applications by Thermal spraying. Optimum coating results will be achieved using HVOF process. Each lot of powder is subjected to extensive quality checks to insure a consistent particle size distribution. The chemical composition is comparable to AWS A5.14 class ERNiCrMo-3. The HVOF coatings produced are suitable for a wide range of applications requiring resistance to alkaline , acidic and aqueous salt environments. Coatings of 55125 are oxidation resistant up to a temperature of 1600°F (871°C) .

TYPICAL APPLICATIONS:

Pollution control equipment , Pump shafts , Paper mill digesters , High temperature environments , Chemical process equipment , Dimensional restoration of Alloy 625 Turbine shafts

TECHNICAL DATA:

Hardness / R15N: 78 (HRC 35)

Method of manufacture:
Gas atomized

Nominal size distribution:
-53 + 20 microns

Chemistry : Cr 21.5 , Mo 9.0 , C < 0.10 , Fe 3.0 , Nb + Ta 3.6% , Ni balance

55396 HVOF

55396 HVOF is a water atomized Ni Cr B Si alloy powder designed specifically for applications by HVOF process. Each lot of powder is subjected to extensive quality checks to insure a consistent particle size distribution. Coatings of 55396 may be used in as sprayed conditions or subsequently fused condition. The fusing will densify the coating and will provide a metallurgical bond with the base metal. The coatings produced are hard, dense and will exhibit high bond strengths to a wide variety of base metals. 55396 offers an excellent resistance to abrasion and hard particle erosion.

TYPICAL APPLICATIONS:

Pump shafts, Compressor rods, Wear rings, Cr Plating replacement applications, Seals, Brick dies

TECHNICAL DATA:

Hardness: R 51N: 87 - 88 (HRC 54 - 56)

Method of manufacture :
Water atomized

Nominal size distribution:
-63 + 20 microns

Chemistry : Cr 15.5, Si 3.8, B 3.2,
C 0.07, Fe 3.5, Ni balance

55575 N HVOF

55575N HVOF is an agglomerated and sintered Chromium carbide – Nickel chromium alloy powder designed specifically for HVOF process. The powder is essentially spherical in shape. The coatings produced are hard, dense and will exhibit high bond strength to a wide range of base metals. Exceptional resistance to fretting, abrasion, oxidation and high temperature corrosion are achieved.

TYPICAL APPLICATIONS:

Marine and truck diesel valve stems, Hydraulic cylinders, Chrome plating Replacement applications, Compressor rods, Ball valves, Sucker rods

TECHNICAL DATA:

Hardness: R 51N: 87 - 88 (HRC 53 - 57)

Method of manufacture:
Agglomerated & Sintered

Nominal size distribution:
-45 + 15 microns

Chemistry : Chromium carbide
75% + Nickel Chromium 25%

55583 N HVOF

55583N HVOF is an agglomerated and sintered Tungsten carbide – Cobalt powder designed specifically for HVOF process. The powder is essentially spherical in shape. The coatings produced are hard, dense and will exhibit high bond strength to a wide range of base metals. The powder is essentially spherical in shape. Exceptional resistance to low stress abrasion, fretting wear and erosion are achieved

TYPICAL APPLICATIONS:

Compressor shafts, Hydraulic cylinders, Oil field apparatus, Induced draft fan blades, Pump seals, Compressor rods

TECHNICAL DATA:

Hardness: R 51N: 90 - 92 (HRC 59 - 65)

Method of manufacture:
Agglomerated & Sintered

Nominal size distribution:
-45 + 15 microns

Chemistry : Tungsten carbide
83%, Cobalt 17%

55586 N HVOF

55586N HVOF is an agglomerated and sintered Tungsten carbide – Cobalt powder designed specifically for HVOF process. The powder is essentially spherical in shape. The coatings produced are hard, dense and will exhibit high bond strength to a wide range of base metals. Exceptional resistance to low stress abrasion, fretting wear and corrosion / erosion can be achieved. The addition of Chromium matrix improves resistance to corrosion and increases thermal stability as compared with WC-12Co or WC-17 Co powders.

TYPICAL APPLICATIONS:

Compressor shafts, Impellers, Splined and bearing mandrels, Induced draft fan blades, Oilfield apparatus, Pump seals, Paper rolls

TECHNICAL DATA:

Hardness: R 51N: 90 - 93 (HRC 59 - 67)

Method of manufacture:
Agglomerated & Sintered

Nominal size distribution:
-45 + 15 microns

Chemistry : Tungsten carbide
86%, Cobalt 10%, Chromium 4%

55588 N HVOF

55588N HVOF is an agglomerated and sintered Tungsten carbide – Cobalt powder designed specifically for HVOF process. The coatings produced are hard , dense and will exhibit high bond strength to a wide range of base metals. The powder is essentially spherical in shape. Exceptional resistance to low stress abrasion, fretting wear and hard particle erosion can be achieved. Each lot of powder is subjected to extensive quality checks to insure a consistent particle size distribution.

TYPICAL APPLICATIONS:

Knife blades , Capstans and pulleys , Oil field apparatus, Exhaust fan blades , Pump seals , Extrusion dies.

TECHNICAL DATA:

Hardness: R 51N: 90 - 93 (HRC 59 - 67)

Method of manufacture : Agglomerated & Sintered

Nominal size distribution: -45 + 15 microns

Chemistry : Tungsten carbide 88% , Cobalt 12%

55590 N HVOF

55590N HVOF is an agglomerated and sintered tungsten carbide – Nickel powder designed specifically for HVOF process. The use of Nickel matrix improves corrosion resistance as compared with WC 12 Co coatings. In addition, the absence of Cobalt renders coatings of 55590 suitable for suitable nuclear applications. The coatings produced are hard, dense and will exhibit high bond strength to a wide range of base metals. Exceptional resistance to low stress abrasion, fretting wear and hard particle erosion can be achieved.

TYPICAL APPLICATIONS:

Knife blades , Turbine components , Oil field apparatus , Exhaust fan blades , Pump seals , Extrusion dies

TECHNICAL DATA:

Hardness: R 51N: 90 - 93 (HRC 59 - 67)

Method of manufacture: Agglomerated & Sintered

Nominal size distribution: -45 + 15 microns

Chemistry : Tungsten carbide 90% , Nickel 10%

55606 HVOF

55606 HVOF is a self fluxing Nickel based highly alloyed powder. Coatings of 55606 can be used in as sprayed condition or subsequently be fused depending on application needs. The fusion will densify the coating and will produce a metallurgically bonded coating. The coatings produced are hard, dense and will exhibit high bond strength to a wide range of base metals.

TYPICAL APPLICATIONS:

Waste incineration , Pulp and paper , Sleeves , Chemical industries , Boiler tubes , Mixer blades , Extruder screws , Shafts

TECHNICAL DATA:

Hardness: R 51N: 85 - 88 (HRC 50 - 54)

Method of manufacture: Water atomized

Nominal size distribution: -53 + 15 microns

Chemistry : Cr 18.0 , Mo 13.0 , Si 4.5 , B 2.8 , Cu 2.5 , Ni bal

OTHER HVOF POWDERS & BLENDS

| PRODUCT | DESCRIPTION | PRODUCT | DESCRIPTION |
|----------|-------------------------------|----------|---------------------------------|
| 5252 HV | Ni Si B (HRC 39) | 55395 | Ni Cr Si B (HRC 50) |
| 5237 HV | Ni Si B (HRC 25) | 55396 WC | WC - Co+ Ni Cr Si B |
| 18997 HV | Fe Ti Mo Ni W V | 55580 | Cr3C2 / 20 % Ni Cr |
| 55122 | Ni-21 Cr-13 Mo-3 W-4 Fe (C22) | 55592 | 90% WC - 8 Co |
| 55123 | Fe - 32 Ni | 55606 WC | WC - Co - Cr + Ni Cr Si B Mo Cu |
| 55317 | Ni Cr Si B Mo Cu HRC 60) | 55506 | Cobalt 6 type |

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