

## PURE METAL POWDERS

HA Name	Powder Type	Product ID	Particle Size	Specifications	Typical Properties
HA1030	Aluminum (Al) 99% Gas Atomized	101030	-45 + 5 μm (-325 mesh + 5 μm)	Standard Grade	Soft and ductile. Corrosion resistant. Good electrical and thermal conductivity. Non-magnetic, can be used for electromagnetic shielding.
HA1030-2	Aluminum (Al) 99% Gas Atomized	101030-2	-90 + 45 μm (-170 + 325 mesh)	EMS 38850 PWA 1320 EMS 57743	
HA4155	Copper (Cu) 99.0% Semi-Spherical, Water Atomized	104105	-106 + 45 μm (-140 + 325 mesh)	Standard Grade	Good electrical and thermal conductivity Coatings are soft, ductile and moderately oxidation resistant. Non-magnetic.
HA4155-2	Copper (Cu) 99.0% Spherical, Gas Atomized	104155	-88 + 25 μm	Standard Grade	
HA2024	Chromium (Cr) 99.5% Irregular	102024	-45 μm (- 325 mesh)	GE B10D5 PMC9753-1	Good flowability and high density. Corrosion resistant.
HA5000	Iron (Fe) 99.5% Water Atomized	105000	-106 + 15 μm (-140 mesh +15 μm)	Standard Grade	Tough, hard coatings with excellent sliding properties and wear resistance
HA6102	Molybdenum (Mo) 99% Spherical	106102	-90 + 45 μm (-170 + 325 mesh)	PWA 1313 MSRR 9507/1 CPW 213 EMS 5670	High density coatings that require grinding to finish. Resistant to electric arc erosion in oxidizing or atmospheric conditions.
HA6103	Molybdenum (Mo) 99% Sintered, Crushed	106103	-74 + 45 μm (-200 + 325 mesh)	EMS 57738 EMS 56705 CPW 213 MSRR 9507/19 DMR 33.017 PM 819-13	
HA6105	Molybdenum (Mo) 99% Spray-Dried, Crushed	106913	-45/D μm (-325 mesh)	Standard Grade	
HA7400	Niobium (Nb) Angular Cast and Crushed	107400	-30 + 5 μm (-500 mesh + 5 μm)	Standard Grade	Good heat resistance in non-oxidizing atmospheres. Used for welding joints.
HA7156	Nickel (Ni) 99.0% Spherical, Gas Atomized	107100	-45 + 10 μm (-325 mesh + 10 μm)		Readily machineable coatings that bonds well to steel. Can be used for salvage and build-up of nickel base alloy components which have been damaged or mis-machined.
HA7166	Nickel (Ni) 99.3+% Precipitated	107166	-53 + 20 μm (-270 mesh + 20 μm)	Standard Grade	
HA7166-2	Nickel (Ni) 99.3+% Precipitated	109197	-74 + 45 μm (-200 + 325 mesh)	MSRR 9513	
HA9197	Silicon (Si) 99.9% Angular	109106	-45 + 5 μm (-325 mesh + 5 μm)	Standard Grade	Stable thermal properties, resistant to decomposition and chemicals, and are biologically adaptable. Typically used for semiconductor equipment component protection.
HA9106	Tungsten (W) 99.5%	109106	-45 μm (-325 mesh)	Standard Grade	High purity material used in high speed steels for cutting tools and in lamp filaments. Tungsten forms a protective oxide in air and can be oxidized at high temperatures.
HA9106-1	Tungsten (W) 99.5%	109918	-74 + 45 μm (-200 + 325 mesh)	Standard Grade	
HA9918	Titanium (Ti) 99% Spherical, Dense	109918-1	-63 μm (-230 mesh)	Standard Grade	Very dense coatings for corrosion resistance in sea water, chloride salt solutions and oxidizing acid solutions (except for pure HCl and pure H <sub>2</sub> SO <sub>4</sub> ).Is a high purity material.
HA9918-1	Titanium (Ti) 99% Spherical, Dense	109918-2	-106 μm (-140 mesh)	Standard Grade	
HA9918-2	Titanium (Ti) 99.4% Irregular	109930	-90 + 11 μm (-170 mesh + 11 μm)	Standard Grade	
HA9000	Zinc (Zn), 99.5% Irregular	109000	-74 μm (-200 mesh)	Standard Grade	Corrosion resistant. Good electrical and thermal conductivity.

## ALUMINUM BASE POWDERS

HA Name	Powder Type	Product ID	Particle Size	Specifications	Typical Properties
HA1020-1	Al 12Si Spherical, Gas Atomized	211111	-45 + 5 μm (-325 mesh + 5 μm )	PWA 1335	General purpose material for repair and build-up of aluminum and magnesium base components, including jet engine parts. Harder than pure aluminum. Good machinability.
HA1020	Al 12Si Spherical, Gas Atomized	211102	-90 + 45 μm (-170 + 325 mesh)	GE B50TF92 CL A EMS 57742 PWA 1335 CPW 235	
HA1020-2	Al 12Si Spherical, Gas Atomized	211020	-125 + 45 μm (-120 + 325 mesh)	Mil-P-85856 Type 1, CL II, Comp E Rev 4	

## COBALT BASE POWDERS

HA Name	Powder Type	Product ID	Particle Size	Specifications	Typical Properties
HA1103	Co 25Cr 10Ni 7.5W Spherical, Gas Atomized	221103	-45 + 5 μm (-325 mesh + 5 μm)	CPW 236 EMS 52432 XXIII SMR 33008 MSRR 9507/23 PWA 1316	Resistance to abrasive wear, sliding wear, fretting and cavitation. Excellent oxidation resistance. Produces a thinner, smoother coating, requiring less finishing.
HA1105	Co 25Cr 10Ni 7.5W Spherical, Gas Atomized	221105	-75 + 45 μm (-200 + 325 mesh)	MSRR 9507/3 PWA 1318 CPW 218 DMR 33.007	
HA1245	Co 25Cr 10Ni 7.5W Spherical, Gas Atomized	221245	-53 + 20 μm (-270 mesh + 20 μm)	Standard Grade	
HA1221	Co 27Cr 5.5Mo 2.8Ni 2Fe .25C Spherical, Gas Atomized	221221	-45 + 10 μm (-325 mesh + 10 μm)	Standard Grade	Excellent high temperature strength and stability. Resistance to galling (under self-mated conditions), cavitation erosion, and corrosion.
HA1221-1	Co 27Cr 5.5Mo 2.8Ni 2Fe .25C Spherical, Gas Atomized	221221-1	-150 + 45 μm (-100 + 325 mesh)	Standard Grade	
HA1221-2	Co 27Cr 5.5Mo 2.8Ni 2Fe .25C Spherical, Gas Atomized	221221-2	-180 + 53 μm (-80 + 270 mesh)	Standard Grade	
HA1106	Co 28Cr 4W 3Fe 3Ni Spherical, Gas Atomized	221106	-45 + 10 μm (-325 mesh + 10 μm)	Standard Grade	Outstanding self-mated anti-galling properties. High temperature hardness and high resistance to cavitation erosion. Excellent resistance to many forms of mechanical and chemical degradation over a wide temperature range.
HA1106-4	Co 28Cr 4W 3Fe 3Ni Spherical, Gas Atomized	221106-3	-150 + 45 μm (-100 + 325 mesh)	Standard Grade	
HA1106-3	Co 28Cr 4W 3Fe 3Ni Spherical, Gas Atomized	21106-3	-180 + 53 μm (-80 + 270 mesh)	Standard Grade	
HA1124	Co 28Cr 20W 5Ni 1V Spherical, Gas Atomized	221114	-75 + 45 μm (-200 + 325 mesh)	GE B50A842 CL A	Excellent high temperature wear and oxidation resistance coatings. Hard dense deposits.
HA1122	Co 29Cr 8W 3Fe 3Ni Spherical, Gas Atomized	221112	-45 + 10 μm (-325 mesh + 10 μm)	Standard Grade	Excellent wear, abrasion, and cavitation resistance, excellent sliding properties. Oxidation and corrosion resistance.
HA1122-1	Co 29Cr 8W 3Fe 3Ni Spherical, Gas Atomized	221112-1	-150 + 45 μm (-100 + 325 mesh)	Standard Grade	
HA1122-2	Co 29Cr 8W 3Fe 3Ni Spherical, Gas Atomized	221112-2	-180 + 53 μm (-80 + 270 mesh)	Standard Grade	
HA1900	Co 22Mo 17Cr 16.7Ni 2.9Si Spherical, Gas Atomized (Tribaloy® 900)	221739	-45 + 10 μm (-325 mesh + 10 μm)	Standard Grade	Excellent wear, abrasion, and cavitation resistance, excellent sliding properties. Oxidation and corrosion resistance.
HA1900-1	Co 22Mo 17Cr 16.7Ni 2.9Si Spherical, Gas Atomized (Tribaloy® 900)	221739-1	-106 + 45 μm (-140 + 325 mesh)	Standard Grade	
HA1900-2	Co 22Mo 17Cr 16.7Ni 2.9Si Spherical, Gas Atomized (Tribaloy® 900)	221739-2	-180 + 53 μm (-80 + 270 mesh)	GE B50TF155 CL A EMS 52432 XVI BMS 10-67-15	
HA1109	Co 28Mo 8.5Cr 2.6Si Spherical, Gas Atomized (Tribaloy® 400)	221109	-45 + 10 μm (-325 mesh + 10 μm)	GE B50TF155 CL A BMS 10-67H Type XV	Excellent mechanical wear resistance with good corrosion resistance. Good hot hardness with both hot corrosion and oxidation properties. Low coefficient of friction. Smooth as-sprayed.
HA1400-2	Co 28.5Mo 8.5Cr 2.6Si .08C Spherical, Gas Atomized (Tribaloy® 400)	221735-2	-106 + 45 μm (-140 + 325 mesh)	Standard Grade	
HA1400-3	Co 28.5Mo 8.5Cr 2.6Si .08C Spherical, Gas Atomized (Tribaloy® 400)	221735-3	-180 + 53 μm (-80 + 270 mesh)	Standard Grade	
HA1101	Co 30Cr 2.45C 12.5W 3Fe 3Ni Spherical, Gas Atomized	221101	-45 + 10 μm (-325 mesh + 10 μm)	Standard Grade	Excellent wear, abrasion, and cavitation resistance, excellent sliding properties. Oxidation and corrosion resistance.
HA1101-1	Co 30Cr 2.45C 12.5W 3Fe 3Ni Spherical, Gas Atomized	221101-1	-150 + 45 μm (-100 + 325 mesh)	Standard Grade	
HA1101-2	Co 30Cr 2.45C 12.5W 3Fe 3Ni Spherical, Gas Atomized	221101-2	-180 + 53 μm (-80 + 270 mesh)	Standard Grade	

## COBALT BASE POWDERS

HA Name	Powder Type	Product ID	Particle Size	Specifications	Typical Properties
HA1111	Co 28.5Mo 17.5Cr 3.4Si .08C 3Ni 3Fe Spherical, Gas Atomized (Tribaloy 800)	221111	-45 + 10 µm (-325 mesh + 10 µm)	GE B50TF190 CL A EMS 52432 XV PM 819-15	Higher chromium content than T-400 for improved oxidation and corrosion resistance. Low coefficient of friction. Smooth as-sprayed.
HA1248	Co 28.5Mo 17.5Cr 3.5Si 3Ni 3Fe Spherical, Gas Atomized (Tribaloy 800)	221738	-53 + 20 µm (-270 mesh + 20 µm)	GE B50TF190 DMR 33.021 MSRR 9507/58	
HA1800-2	Co 28.5Mo 17.5Cr 3.4Si .08C 3Ni 3Fe Spherical, Gas Atomized (Tribaloy 800)	221738-2	-106 + 45 µm (-140 + 325 mesh)	Standard Grade	
HA1800-3	Co 28.5Mo 17.5Cr 3.4Si .08C 3Ni 3Fe Spherical, Gas Atomized (Tribaloy 800)	221738-3	-180 + 53 µm (-80 + 270 mesh)	Standard Grade	
HA1217	Co 32Ni 21Cr 8Al 0.5Y Spherical, Gas Atomized	221127	-45 + 5 µm (-325 mesh + 5 µm)	MSRR 753/1 DMR 33.095	For demanding aerospace applications. Used for protective plasma spray coatings in hot corrosive or oxidizing environments.
HA2195	Co 32Ni 21Cr 8Al 0.5Y Spherical, Gas Atomized	221195	-45 + 10 µm (-325 mesh + 10 µm)	CPW 528-2	
HA2195-1	Co 32Ni 21Cr 8Al 0.5Y Spherical, Gas Atomized	221195-1	-45 + 20 µm (-325 mesh + 20 µm)	Standard Grade	
HA1159	Co 32Ni 21Cr 8Al 0.5Y Spherical, Gas Atomized	221159	-75 + 38 µm (-200 + 400 mesh)	EMS 57741Grade A MSRR 9507/47 MSRR 9507/73 PM 819-58	
HA1211	Co 32Ni 21Cr 8Al 0.5Y Spherical, Gas Atomized	221211	-90 + 45 µm (-170 + 325 mesh)	GE B50TF195 CL A EMS 55741 GB	
HA1211-2	Co 32Ni 21Cr 8Al 0.5Y Spherical, Gas Atomized	221211-2	-150 + 63 µm (-100 + 230 mesh)	EMS 57741 Grade B GE B50TF195 CL A Howmet Cd 1128	
HA1260-1	CoCrAlY Atomized	221260-1	Proprietary	ES9-362 A	Proprietary
HA1260-2	CoCrAlY Atomized	221260-2	Proprietary	ES9-362 B	

## COPPER BASE POWDERS

HA Name	Powder Type	Product ID	Particle Size	Specifications	Typical Properties
HA4104	Cu 10Al 1Fe Aluminum Bronze Spherical, Gas Atomized	224104	-53 + 5 µm (-270 mesh + 5 µm)	BMS 10-67-2 DMS 2049T1	Moderate oxidation, wear and fretting resistance at low temperatures, good emergency running properties. Easily machined coating.
HA4104-2	Cu 10Al 1Fe Aluminum Bronze Spherical, Gas Atomized	224204-2	-53 + 10 µm (-270 mesh + 10 µm)	PWA 1378D MSRR 9507/29 GE B50TF161 CL B DMR 33.092	
HA4104-5	Cu 10Al 1Fe Aluminum Bronze Spherical, Gas Atomized	224104-5	-125 + 45 µm (-120 + 325 mesh)	GE B50TF161 CL A	
HA4101	Cu 36Ni 5In Spherical, Gas Atomized	224101	-45 + 10 µm (-325 mesh + 10 µm)	GE B50TF72 CL B MSRR 9507/55	Produces dense coatings with good resistance to galling and fretting. Dense coatings with low porosity and oxide content.
HA4102	Cu 36Ni 5In Spherical, Gas Atomized	224102	-90 + 45 µm (-170 + 325 mesh)	GE B50TF72 CL A MSRR 9507/31 DMR 33.016 BMS 10-67-14	
HA4103	Cu 38Ni Spherical, Gas Atomized	224103	-75 + 45 µm (-200 + 325 mesh)	GE B50TF42 CL A PWA 1369 PM 819-42 DMR 33.015	Produces dense coatings for protection against fretting and cavitation. Dense coatings with low porosity and oxide content.

## IRON BASE POWDERS

HA Name	Powder Type	Product ID	Particle Size	Specifications	Typical Properties
HA5211	Fe 13.5Cr .15C Mn Si Spherical, Gas Atomized (410 Stainless Steel)	235211	-45 + 15 µm (-325 + 15 µm)	Standard Grade	Moderately hard coating. Protects against fretting, cavitation and particle erosion. Very good corrosion resistance.
HA5108	Fe 12.5Cr .15C Mn Si Spherical, Gas Atomized (410 Stainless Steel)	235108	-90 + 45 µm (-170 + 325 mesh)	Standard Grade	
HA5420	Fe 12.5Cr Gas Atomized (420 Stainless Steel)	235420	-53 + 20 µm (-270 mesh + 20 µm)	Standard Grade	Hardness with some corrosion resistance. Requires grinding.
HA5431	Fe 15.6Cr 1.8Ni .51Mn .41Si Gas Atomized (431 Stainless Steel)	235431	-106 + 45 µm (-140 + 325 mesh)	Standard Grade	Corrosive resistance coatings. Good for dimensional repair and build-up.
HA5513-1	Fe 17Cr 12Ni 2.5Mo .03C Spherical, Gas Atomized (316L Stainless Steel)	235101	-45 + 15 µm (-325 mesh + 15 µm)	Standard Grade	Very good corrosion resistance. Smooth coatings, easily machined. Protects against fretting, cavitation and particle erosion. Good for dimensional repair and build-up.
HA5513-7	Fe 17Cr 12Ni 2.5Mo Gas Atomized (316 Stainless Steel)	235101-7	-106+ 45 µm (-140+ 325 mesh)	MSRR 9507/26	
HA5236	Fe 17Cr 12Ni 2.5Mo Gas Atomized (316 Stainless Steel)	235236	-52 + 20 µm (-270 mesh + 20 µm)	Standard Grade	

## MOLYBDENUM BASE POWDERS

HA Name	Powder Type	Product ID	Particle Size	Specifications	Typical Properties
HA6137	Mo 25 NiCr 8Si Blend	246137	-75 + 45 µm (-200 + 325 mesh)	EMS 52432 CL XIV	Self Fluxing. High wear resistance coatings with a low coefficient of friction and good scuffing resistance.
HA6149	MoSi <sub>2</sub> Irregular	246049	-45 µm (-325 mesh)	Standard Grade	Coatings have good strength with excellent resistance to oxidation and thermal shock.

## NICKEL BASE POWDERS

HA Name	Powder Type	Product ID	Particle Size	Specifications	Typical Properties
HA7185	Ni 5Al Composite	257185	-90 + 45 µm (-170 + 325 mesh)	GE B50TF56 CL B PWA 1380 EMS 57746 TIC1 DMR 33.011	The coatings are dense and resistant to oxidation and abrasion. Self-bonding material which exhibits an exothermic reaction during spraying resulting in a good bond. Readily machinable.
HA7109	Ni 5Al Spherical, Gas Atomized	257109	-90 + 45 µm (-170 + 325 mesh)	GE B50TF56 CL A PWA 1337 EMS 57746 Type I EMS 52432 XX CPW 247	
HA7109-2	Ni 5Al Spherical, Gas Atomized	257109-2	-45 + 15 µm (-325 mesh + 15 µm)	GE B50TF56 CL C EMS 39661	
HA7266	Ni 8Cr 7Al 5Fe 5Mo Composite	257266	-106 + 45 µm (-140 + 325 mesh)	EMS 56762 EMS 5432 CL XXIX	Machinable Stainless Steel type coating. Good oxidation and corrosion resistance. Self-bonds to most metallic surfaces.
HA7261-1	Ni 5Al 5Mo Agglomerated, Sintered	257261-1	-90 + 45 µm (-170+325 mesh)	EMS 57749 MSRR 9507/35 GE B50TF166 CL A PM 819-24 PC 110-265 WIMS 645	Tough, moderate resistance to erosion and sliding wear, medium hardness. High bond strength.
HA7204	Ni 10.5Cr 3.3Si 2.0Fe 2B Spherical, Gas Atomized	257004	-106 + 45 µm (-140 + 325 mesh)	Standard Grade	For coatings requiring immediate hardness Excellent machinability and resistance to corrosion, heat, and cracking.
HA7040	Ni 10.5Cr 3.3Si 2.0Fe 2B Spherical, Gas Atomized	257240	-150/D µm (-100/D mesh)	Standard Grade	
HA7040-2	Ni 10.5Cr 3.3Si 2.0Fe 2B Spherical, Gas Atomized	257240-2	-125 + 45 µm ( -120 + 325 Mesh)	Standard Grade	
HA7404	Ni 20Al Clad	257404	-90 + 53 µm (-170 + 270 mesh)	EMS 57746 Type II GE B50TF33 CL A MSRr 9507/4 PWA 1321 DMR 33.010 PM 819-21	Dense coating, resistant to oxidation and abrasion.

# NICKEL BASE POWDERS

HA Name	Powder Type	Product ID	Particle Size	Specifications	Typical Properties
HA7365-2	Ni 18Cr 10Co 6.5Al 6Ta Spherical, Gas Atomized Fine Cut	257365-2	-53 +10 µm (-270 + 10 µm)	GE B50TF271 CL C	High deposit efficiency, fusible powder. Withstands abrasion and extreme temperatures.
HA7365-3	Ni 18Cr 10Co 6.5Al 6Ta Spherical, Gas Atomized Coarse Cut	257365-3	-90 +45 µm (-170+ 325 mesh)	GE B50TF271 CL B	
HA7278	Ni 19Cr 19Fe 5Nb 3Mo Gas Atomized	257278	-53 + 20 µm (-270 mesh + 20 µm)	GE B50TF202 CL D DMR 33.502	Highly oxidation resistant.
HA7243	Ni 19Cr 5Al Agglomerated, Sintered	2572243	-90 + 38 µm (-170 + 400 mesh)	PWA1347 EMS 57748 GE B50TF119 CL A MSRR 9507/14	Excellent corrosion and oxidation resistance.
HA7105	Ni 20 Cr Spherical, Gas Atomized Very Fine Cut	257105	-45 +5 µm (-325 mesh +5 µm)	EMS 56772 DMR 33.018 WIMS 646	Produces thin, dense, bright, clean, smooth coatings. Exhibits good bonding characteristics. Resists oxidation and corrosive gases.
HA7105-1	Ni 20 Cr Spherical, Gas Atomized Fine Cut	257262	-53 + 20 µm (-270 mesh + 20 µm)	PWA 1319	
HA7105-2	Ni 20 Cr Spherical, Gas Atomized Fine Cut	257106	-63 +10 µm (-230 mesh +10 µm)	GE B50TF40 CL B MSRR 9507/27 PWA 1317	
HA7105-4	Ni 20 Cr Spherical, Gas Atomized Coarse Cut	257107	-106 + 45 µm (-140 + 325 mesh)	GE B50TF40 CL B MSRR 9507/27 PWA 1317 DMR 33.079	
HA7328	Ni 20Cr 9Mo 3.2Nb+Ta Spherical, Gas Atomized Fine Cut <i>Inconel 625</i>	257328	-45 + 10 µm (-325 mesh + 10 µm)	GE B50TF40 CL A MSRR 9507/8 PWA 1315 EMS 56760 DMR 33.078 CPW 215	Oxidation and corrosion resistant. Excellent choice for nickel and cobalt component restoration.
HA7328-1	Ni 20Cr 9Mo 3.2Nb+Ta Spherical, Gas Atomized Fine Cut <i>Inconel 625</i>	257328-1	-90 + 45 µm (-170 + 325 mesh)	Standard Grade	
HA7265	Ni 21Cr 9Mo 2.5Fe 4Nb Spherical, Gas Atomized <i>Inconel 625</i>	257265	-53 + 20 µm (-270 mesh + 20 µm)	Standard Grade	
HA7625	Ni 21Cr 9Mo 5Fe Spherical, Gas Atomized <i>Inconel 625</i>	257265	-53/D µm (-270/D mesh)	Standard Grade	
HA7625-1	Ni 21Cr 9Mo 5Fe Spherical, Gas Atomized <i>Inconel 625</i>	257265-1	-45 + 10 µm (-325 mesh + 10 µm)	Standard Grade	
HA7625-3	Ni 21Cr 9Mo 5Fe Spherical, Gas Atomized <i>Inconel 625</i>	257265-3	-150 + 45 µm (-100 + 325 mesh)	Standard Grade	
HA7625-4	Ni 21Cr 9Mo 5Fe Spherical, Gas Atomized <i>Inconel 625</i>	257265-4	-180 + 53 µm (-80 + 270 mesh)	Standard Grade	
HA7022	Ni 21.5Cr 14Mo 5Fe 3W Spherical, Gas Atomized	257273-4	-45 + 16 µm (-325 mesh + 16 µm)	GE B50TF162 CL A GE B50TF192 CL A DMR 33.090 PM819-44	Oxidation and corrosion resistant. Excellent choice for nickel and cobalt component restoration.
HA7269	Ni 16Mo 15Cr 5Fe 3W Gas Atomized	257269	-53 + 20 µm (-270 mesh + 20 µm)	Standard Grade	Highly corrosion resistant. Resists localized corrosion, oxidizing acids with chloride ions and industrial chemicals.
HA7244-1	Ni 22Cr 10Al 1.0Y Spherical, Gas Atomized	257164	-106 + 53 µm (-140 + 270 mesh)	GE B50TF162 CL A GE B50TF192 CL A DMR 33.090 PM819-44	Excellent oxidation resistance and diffusional stability.
HA7244-2	Ni 22Cr 10Al 1.0Y Spherical, Gas Atomized	257211	-106 + 53 µm (-140 + 270 mesh)	GE B50TF162 CL A GE B50TF192 CL A DMR 33.090 PM819-44	
HA7246	Ni 31Cr 11Al .4Y Spherical, Gas Atomized	257246	-90 + 38 µm (-170 + 400 mesh)	EMS 57737 EMS 52432 CL XXI PM819-29	
HA7260	Ni 50Cr Gas Atomized	257260	-53 + 20 µm (-270 mesh + 20 µm)	Standard Grade	Coatings are resistant to corrosive gases in boiler temperatures. Superior bond strength.

# NICKEL BASE POWDERS

HA Name	Powder Type	Product ID	Particle Size	Specifications	Typical Properties
HA7050	Ni 11Cr 4Si 2.4B 3Fe Spherical, Gas Atomized	257255	-45 + 10 µm (-325 mesh + 10 µm)	Standard Grade	Produces hard, machinable as-sprayed for fused coating. Resists wear by abrasive grains, hard surfaces, fretting, cavitation and erosion. Intermediate hardness. Excellent weldability and crack resistance.
HA7274	Ni 11Cr 4Si 3Fe 2.5B Gas Atomized	257274	-63 + 25 µm (-230 mesh + 25 µm)	Standard Grade	
HA7050-1	Ni 11Cr 4Si 2.4B 3Fe Spherical, Gas Atomized	257255-1	-106 + 45 µm (-140 + 325 mesh)	Standard Grade	
HA7050-2	Ni 11Cr 4Si 2.4B 3Fe Spherical, Gas Atomized	257255-2	-150 + 45 µm (-100 + 325 mesh)	Standard Grade	
HA7050-3	Ni 11Cr 4Si 2.4B 3Fe Spherical, Gas Atomized	257255-3	-180 + 53 µm (-80 + 270 mesh)	Standard Grade	
HA7050-4	Ni 15Cr 3.8Si 2.8B 4.2Fe Spherical, Gas Atomized	257255-4	-106 + 45 µm (-140 + 325 mesh)	Standard Grade	
HA7116	Ni 14Cr 4.5Fe 4.5Si 3.0B Spherical, Gas Atomized	257167	-106 + 45 µm (-140 + 325 mesh)	Standard Grade	Fused coatings, is very hard and wear resistant. Exhibit moderate shrink with low oxide content.
HA7276	Ni 15Cr 17W 4Si 3.5Fe Gas Atomized	257276	-53 + 20 µm (-270 mesh + 20 µm)	Standard Grade	Hard machinable coatings. Resists abrasion and erosion at high temperatures.
HA7060-2	Ni 15.5Cr 4.3Si 4Fe 3.5B Spherical, Gas Atomized	257256	-45 + 10 µm (-325 mesh + 10 µm)	Standard Grade	Good corrosion and wear properties.
HA7115	Ni 15.5Cr 4.3Si 4Fe 3.5B Spherical, Gas Atomized	257256-1	-106 + 45 µm (-140 + 325 mesh)	AMS4775	
HA7060-3	Ni 15.5Cr 4.3Si 4Fe 3.5B Spherical, Gas Atomized	257256-3	-150 + 45 µm (-100 + 325 mesh)	Standard Grade	
HA7060	Ni 15.5Cr 4.3Si 4Fe 3.5B Spherical, Gas Atomized	257256-4	-180 + 53 µm (-80 + 270 mesh)	Standard Grade	
HA7275	Ni 16.5Cr 17Mo 6Fe 4.5W Spherical, Gas Atomized	257275	-53 + 20 µm (-270 mesh + 25 µm)	Standard Grade	
HA7202	Ni 19Cr 17Fe 3Mo 5Nb+Ta Spherical, Gas Atomized Course Cut (Inconel 718)	257202	-125 + 45 µm (-120 + 325 mesh)	GE B50TF202 CL A	Machinable. Good Dimensional restoration.
HA7202-1	Ni 19Cr 17Fe 3Mo 5Nb+Ta Spherical, Gas Atomized Very Fine Cut (Inconel 718)	257202-1	-90 + 45 µm (-170 + 325 mesh)	GE B50TF202 CL B	
HA7202-2	Ni 19Cr 17Fe 3Mo 5Nb+Ta Spherical, Gas Atomized Fine Cut (Inconel 718)	257202-2	-45 + 10 µm (-325 mesh + 10 µm)	Standard Grade	
HA7202-3	Ni 19Cr 17Fe 3Mo 5Nb+Ta Spherical, Gas Atomized Fine Cut (Inconel 718)	257202-3	-45 + 20 µm (-325 mesh + 20 µm)	GE B50TF202 CL D	
HA7171	NiCoCrAlY Spherical, Gas Atomized	257171	-75 + 38 µm (-200 + 400 mesh)	PWA 1365-2 CPW 387 PM-819-51	
HA7171-2	NiCoCrAlY Spherical, Gas Atomized	257171-2	-45/D µm (-325/D mesh)	PWA 1365-1	Resistant to oxidation and corrosion at high temperatures. Utilized at bond coats under stabilized zirconia coatings.
HA7591	Ni 16.5Cr 17Mo 6Fe 4.5W Spherical, Gas Atomized (Hastelloy C)	257273	-45 + 10 µm (-325 mesh + 10 µm)	Standard Grade	High deposit efficiency, fusible powder. Withstands abrasion and extreme temperatures.
HA7591-1	Ni 16.5Cr 17Mo 6Fe 4.5W Spherical, Gas Atomized (Hastelloy C)	257273-1	-53/D µm (-270/D mesh)	Standard Grade	
HA7591-2	Ni 16.5Cr 17Mo 6Fe 4.5W Spherical, Gas Atomized (Hastelloy C)	257273-2	-150 + 45 µm (-100 + 325 mesh)	Standard Grade	
HA7591-3	Ni 16.5Cr 17Mo 6Fe 4.5W Spherical, Gas Atomized (Hastelloy C)	257273-3	-180 + 53 µm (-80 + 270 mesh)	Standard Grade	