

Laser Cladding Powders

LCT Powders | Pure WC

Powder Type	Nom.Composition	FST p/n	Size Range	Typical Properties and Applications
Pure WC (CTC)	W C	Balance 4.00%	L-202.XX -106 +45 μ	<ul style="list-style-type: none"> Fused Tungsten Carbides (CTC) are irregularly shaped, two-phase tungsten carbide powders (WC and W₂C phases) Material used as the hard phase wear-resistant surface. Typically blended with self-fluxing alloys Construction equipment wear plates Agricultural machines. Oil and gas tool joints, PDC and steel body drill bits Biomass and wood processing knives and cutters Mining equipment crushers and milling rolls Heavy equipment mixer blades, decanters or extruder screws
Spherical WC (S-CTC)	W C	Balance 4.00%	L-203.91 -106 +45 μ	<ul style="list-style-type: none"> Used as hard phase blend component that is blended with a self-fluxing alloy matrix High apparent density and increased flowability make the product an excellent choice for overlay applications that require high wear resistance. Down hole tools such as stabilizers and drill collars Slurry pump impellers Conveyor screws used for manufacturing of plastics

LCT Powders | Ni-Based Powders

Powder Type	Nom.Composition	FST p/n	Size Range	Typical Properties and Applications
Alloy 625	Cr Mo Nb Fe Si C Ni	21,80% 9,00% 3,70% <1,00% <0,50% <0,1% Balance	L-325.93 L-325.95 L-325.96 -125+45μ -150+45μ -150+53μ	<ul style="list-style-type: none"> Ni based alloy similar to Inconel 625. Excellent corrosion resistance in wide range of environments. High temperature oxidation resistance Resistance to stress corrosion cracking Good wear resistance and high ductility. Typically used for repair and surfacing of similar nickel based super alloys, non-alloyed, low alloyed and high alloyed steels.

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Alloy 718	Cr	19.00%	L-328.93	-125+45μ -150+45μ -150+53μ	<ul style="list-style-type: none"> • Repair and restoration of superalloy components, including gas turbine and air frame parts. • Additive manufacturing via laser sintering • Corrosion resistant surface deposit for use at temperatures up to 700 °C (1290 °F) 	
	Mo	3.10%				L-328.95
	Nb+Ta	5.10%				L-328.96
	Ni	52.50%				
	Ti	1,00%				
	Si	<0,35%				
	C	<0,08%				
Fe	Balance					
Alloy C-276	Cr	15,50%	L-341.93	-125+45μ -150+45μ -150+53μ	<ul style="list-style-type: none"> • Ni based alloy similar to Hastelloy C276. • Excellent corrosion resistance in hot contaminated mineral acids, chlorine and chloride contaminated media. • Resistance to strong oxidizers and wet chlorine gases, resistant to pitting, crevice corrosion and stress corrosion cracking. 	
	Mo	16,00%				L-341.95
	W	4,00%				L-341.96
	Fe	4,00%				
	Si	<0,40%				
	C	<0,08%				
	Ni	Balance				

LCT Powders | Co-Based Powders

Powder Type	Nom.Composition	FST p/n	Size Range	Typical Properties and Applications	
Alloy 1	Cr	29.00%	L-489.93	<ul style="list-style-type: none"> • Keeping its hardness up to 725 °C, but more crack sensitive than other cobalt based alloys. • High content of carbides in a cobalt matrix, providing excellent resistance to abrasion and solid particle erosion and good general corrosion resistance. • Not as tough or crack-resistant as Alloy 6 and 12, therefore when cladding be careful to minimize stresses resulting from substrate and deposit cooling. 	
	W	12.50%			L-489.95
	C	2.50%			L-489.96
	Ni	<3.00%			
	Mo	<1.00%			
	Fe	<2.00%			
	Si	<2.00%			
	Co	Balance			
Alloy 6	Cr	29.00%	L-484.93	<ul style="list-style-type: none"> • Most widely used cobalt based alloy, providing excellent resistance to many forms of chemical and mechanical degradation over a wide temperature range. • Good resistance to impact and cavitation. • Keeping hardness up to 500 °C. 	
	W	4.50%			L-484.95
	C	1.20%			L-484.96
	Ni	<3.00%			
	Mo	<1.00%			
	Fe	<3.00%			
	Si	<2.00%			
	Co	Balance			

Laser Cladding Powders

LCT Powders Co-Based Powders					
Alloy 12	Cr	29.00%	L-481.93	-125+45μ -150+45μ -150+53μ	<ul style="list-style-type: none"> • Cobalt based alloy with chemical composition similar to Stellite 12, better abrasion and erosion resistance than Alloy 6, better resistance to impact and thermal shocks than Alloy 1
	W	8.00%	L-481.95		
	C	1.50%	L-481.96		
	Ni	<3.00%			
	Mo	<1.00%			
	Fe	<3.00%			
	Si	<2.00%			
Co	Balance				
T-800	Mo	28.50%	L-499.93	-125+45μ -150+45μ -150+53μ	<ul style="list-style-type: none"> • Co based alloy with chemical composition similar to Tribaloy T-800. • The coatings exhibit unique corrosion resistance, oxidation resistance, excellent abrasive wear resistance and high service temperature capability with good hot hardness. • Coatings exhibit a low coefficient of friction particularly suitable where lubrication is low or non-existent. • High resistance to wear and galling with good hot hardness.
	Cr	17.50%	L-499.95		
	Ni	<1.50%	L-481.96		
	Fe	<1.5%			
	Si	3.5%			
	C	<0.08%			
	Co	Balance			

Laser Cladding Powders

LCT Powder Ni/SF-Based					
Powder Type	Nom.Composition		FST p/n	Size Range	Typical Properties and Applications
NiCrSiB 35-40HRC	Cr	8.00%	L-772.93	-125+45μ	<ul style="list-style-type: none"> NiCrBSi based alloy with good corrosion and wear resistance, used for applications, where good machinability is required and hardness of 40 HRC is sufficient.
	Fe	2.50%	L-772.95	-150+45μ	
	Si	3.10%	L-772.96	-150+53μ	
	B	1.90%			
	C	0.50%			
	Ni	Balance			
NiCrSiB 45-50HRC	Cr	13.00%	L-776.93	-125+45μ	<ul style="list-style-type: none"> NiCrBSi based alloy with excellent resistance to wear and corrosion in various process media, surfaces resistant to wear by abrasive grains, particle erosion and cavitation, further improvement of abrasion resistance can be achieved by mixing with tungsten carbides.
	Fe	4.50%	L-776.95	-150+45μ	
	Si	3.60%	L-776.96	-150+53μ	
	B	2.60%			
	C	0.45%			
	Ni	Balance			
NiCrSiB 59-64HRC	Cr	15.00%	L-771.93	-125+45μ	<ul style="list-style-type: none"> NiCrBSi based alloy with excellent resistance to wear and corrosion in various process media, surfaces resistant to wear by abrasive grains, particle erosion and cavitation, further improvement of abrasion resistance can be achieved by mixing with tungsten carbides.
	Fe	4.50%	L-771.95	-150+45μ	
	Si	4.60%	L-771.96	-150+53μ	
	B	3.00%			
	C	0.70%			
	Ni	Balance			
Ni S/F – CTC 60/40	Cr	0.02%	L-766.93	-125+45μ	<ul style="list-style-type: none"> Fused Tungsten Carbides (CTC) are irregularly shaped, two-phase tungsten carbide powders. Formation of WC and W₂C phases occurs during eutectic solidification, forming an acicular microstructure. High wear applications such as mining equipment, wear plates, oil and gas down hole tools.
	Fe	0.17%	L-766.95	-150+45μ	
	Si	2.91%	L-766.96	-150+53μ	
	B	2.81%			
	O	0.03%			
	C	4.0%			
	Ni	Balance			
	<u>CTC</u>	60%			
Ni S/F – S-CTC 60/40	Cr	0.02%	L-767.93	-125+45μ	<ul style="list-style-type: none"> Fused tungsten carbide powder with a spherical morphology (CTC-S). For laser cladding and PTA welding applications, it is used as hard phase blend component that is blended with a self-fluxing alloy matrix. Hi Wear resistance applications such as mining equipment, down hole tools, collars & stabilizers & wear blades / plates.
	Fe	0.17%	L-767.95	-150+45μ	
	Si	2.91%	L-767.96	-150+53μ	
	B	2.81%			
	C	0.03%			
	Ni	3.9%			
		0.3%			
	<u>S-CTC</u>	60%			

Laser Cladding Powders

Fe-Based					
Powder Type	Nom. Composition		FST p/n	Size Range	Typical Properties and Applications
316L Stainless Steel	Cr Ni Mo Mn Si C Fe	17,50% 12.00% 2,50% 1.00% <0,75% <0,03% Balance	L-684.93 L-684.95 L-684.96	-125+45μ -150+45μ -150+53μ	<ul style="list-style-type: none"> L-684, 316L is recommended for laser cladding where deposits exhibiting corrosion, pitting and cavitation resistance, creep and stress rupture at elevated temperatures are desired. It can also be used for repair or buildup of steel parts. L-684, 316L is recommended for corrosion overlay deposits on components used in the oil, gas and marine industries.
431 Stainless Steel	Cr Ni Mn Si C Fe	16.50% 2.00% 0.50% <1.00% <0.03% Balance	L-643.93 L-643.95 L-643.96	-125+45μ -150+45μ -150+53μ	<ul style="list-style-type: none"> Martensitic nickel-chromium steel offering good corrosion resistance and high wear resistance in a variety of applications.
420 Stainless Steel	Cr Mn Si C Fe	13.00% 0.80% <1.00% <0,08% Balance	L-642.93 L-642.95 L-642.96	-125+45μ -150+45μ -150+53μ	<ul style="list-style-type: none"> Moderate corrosion resistance L-642 coatings have a good hardness and wear resistance. Used for dimensional repairs
Rock-Hard™ 604	Cr Mo Ni C Fe	18.00% 0.50% 2.50% 0.15% Balance	L-604.93 L-604.95 L-604.96	-125+45μ -150+45μ -150+53μ	<ul style="list-style-type: none"> Creates a thicker layer than hard chrome plating Hydraulic cylinder overhaul Strong metallurgic bonding Minimized risk for porosity and cracking Unique combination of wear and corrosion resistance Excellent cladding properties Good machinability
Rock-Hard™ 606	C Cr V S F Others	2% 5% 6% 0.9% Balance <0.4%	L-606.93 L-606.95 L-606.96	-125+45μ -150+45μ -150+53μ	<ul style="list-style-type: none"> Excellent welding properties with nice and smooth deposit homogenous hardness within deposition layers Exceptional impact and abrasive wear properties <ul style="list-style-type: none"> Typical applications <p>Oil & Gas: stabilizers, bent housings, drill bits</p> <p>Mining & Construction: Hydraulic cylinder parts, rotary vane wheels, crusher rolls & rings, ground engagement tools (GET) such as scraper blades, bucket lips, wear plates</p>