



# SST™ Commercial Powders



Metal Group	SST Catalogue Number	Typical Applications	Typical Substrates	Description	Suggested Setup Parameters	Other Process Considerations
Aluminum	SST-A0027	Component Repair	Steel, Aluminum, Magnesium and their Alloys	General purpose aluminum-based mixture containing aluminum, zinc and alumina with fast deposition build-up speed. Good for repairing a variety of components and freeform fabrication. Good bonding strength (>6500 psi), hardness HB: 46-62 and good machinability. Can produce very thick and smooth deposition.	Gas Temperature: 350-550°C Gun Pressure: 100-500 psi Powder Feed Rate: 12-80 g/min Standoff Distance: 10-40 mm	UltiLife™ Nozzle Recommended
	SST-A0050	Component Repair	Steel, Aluminum, Magnesium and their Alloys	Blend of aluminum and alumina. Fast deposition and smooth surface. Good for repairing a variety of components. Zinc free coating with good bonding strength (>4800 psi). Hardness (HB:40-64)	Gas Temperature: 300-550°C Gun Pressure: 100-500 psi Powder Feed Rate: 12-80 g/min Standoff Distance: 10-40 mm	UltiLife™ Nozzle Recommended
	SST-A0079	Dimension restoration	Aluminum Alloys	Blend of Al6061 and alumina particles, suitable for repairing a variety of aluminum alloy parts and plastic injection molds requiring high bonding strength and base material hardness matching with full density and good machinability.	Gas Temperature: 350-550°C Gun Pressure: 100-500 psi Powder Feed Rate: 12-80 g/min Standoff Distance : 10-40 mm	UltiLife™ Nozzle Recommended
	SST-A0081	Component Repair	Steel, Aluminum, Magnesium and their Alloys	Newly designed blend of aluminum and alumina where the applications calling for high bond strength. Fast deposition and smooth surface. Good for repairing a variety of components. Very high bonding strength (>6000 psi) and excellent machinability. Hardness HB: 52-64	Gas Temperature:w 300-550°C Gun Pressure: 100-500 psi Powder Feed Rate: 12-80 g/min Standoff Distance: 10-40 mm	UltiLife™ Nozzle Recommended
	SST-A0082	Component Repair	Steel, Aluminum, Magnesium and their Alloys	Specially designed blend of aluminum and alumina for applications calling for better corrosion resistance. Fast deposition and smooth surface. Good for dimension restoration of both Al and Mg alloys parts. Very high bonding strength (>7500 psi) and excellent machinability. Hardness HB:57-64	Gas Temperature:w 300-550°C Gun Pressure: 100-500 psi Powder Feed Rate: 12-80 g/min Standoff Distance: 10-40 mm	UltiLife™ Nozzle Recommended
	SST-A5001	Corrosion Protection	Steel, Aluminium and Magnesium Alloys	Pure aluminum powder with special size distribution for cold spray process, good deposition rate, smooth surface, good bonding strength (>2000 psi), hardness HB: 34-44 and excellent machinability. Good for corrosion protection.	Gas Temperature:w 400-500°C Gun Pressure: 100-500 psi Powder Feed Rate: 12-80 g/min Standoff Distance: 10-40 mm	UltiFlow™ Nozzle Recommended



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<b>Aluminum</b>	SST-A5006	Dimension restoration	Magnesium and Aluminum Alloys	Pure aluminum alloy (Al4047) powder with special size distribution for cold spray process. High density, good bonding strength (>4000 psi) on Mg and Al alloys, hardness HB: 89-97 and good machinability.	Gas Temperature: 450-500°C Gun Pressure: 450-500 psi Powder Feed Rate: 12-50 g/min Standoff Distance: 10-40 mm	<b>UltiFlow™</b> Nozzle Recommended
	SST-A5012	Dimension restoration	Aluminum Alloys	Pure aluminum alloy (Al6061) powder with special size distribution for cold spray process. High density, good bonding strength (>4000 psi) on Al alloys, hardness HB: 72-86 and good machinability.	Gas Temperature: 450-500°C Gun Pressure: 450-500 psi Powder Feed Rate: 12-50 g/min Standoff Distance: 10-40 mm	<b>UltiFlow™</b> Nozzle Recommended
<b>Copper</b>	SST-C0075	Component Repair	Copper and its Alloys	A general purpose copper blend including aluminum and alumina particles with good deposition rate, smooth and bright color coating surface, good machinability, good bonding strength (>2400 psi), hardness HB: 90-115.	Gas Temperature: 350-550°C Gun Pressure: 100-500 psi Powder Feed Rate: 12-100 g/min Standoff Distance: 10-40 mm	<b>UltiLife™</b> Nozzle Recommended
	SST-C5003	Electrical and Thermal Conductivity Needs	Various	Pure copper powder specially for low-pressure cold spray with good deposition rate, hardness HB: 85-120 and excellent machinability. Good for application where high electrical and thermal conductivity are required.	Gas Temperature: 350-450°C Gun Pressure: 100-500 psi Powder Feed Rate: 12-100 g/min Standoff Distance: 10-40 mm	<b>UltiLife™</b> Nozzle Recommended -Because of the rough coating surface, extra coating thickness is needed to provide the machining room for smooth surface finish.



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<b>Nickel</b>	SST-N0036	Cast Iron Repair	Cast Iron	A general nickel-based mixture of nickel and alumina with good coating build-up speed, smooth as-sprayed surface finish, good bonding strength (>3000 psi), good machinability and hardness HRB : 95-106. Application for cast iron repair.	Gas Temperature: 450-550°C Gun Pressure: 100-500 psi Powder Feed Rate: 12-100 g/min Standoff Distance: 10-40 mm	UltiLife™ Nozzle Recommended
	SST-N0056	Cast Iron Repair	Cast Iron	A general nickel-based mixture of nickel, aluminum, zinc and alumina with good coating build-up speed, smooth as-sprayed surface finish, good bonding strength (>6000 psi), good machinability and hardness HB : 76-98. Application for cast iron repair.	Gas Temperature: 350-550°C Gun Pressure: 100-500 psi Powder Feed Rate: 12-100 g/min Standoff Distance: 10-40 mm	UltiLife™ Nozzle Recommended
	SST-N0066	Cast Iron Repair	Cast Iron	A general nickel-based mixture of nickel, aluminum, and alumina with good coating build-up speed, smooth as-sprayed surface finish, good bonding strength (>3700 psi), good machinability and hardness HRB : 72-90. Application for cast iron repair.	Gas Temperature: 450-550°C Gun Pressure: 100-500 psi Powder Feed Rate: 12-100 g/min Standoff Distance: 10-40 mm	UltiLife™ Nozzle Recommended
	SST-N5001	Cast Iron Repair	Cast Iron	A general nickel-based mixture of nickel, aluminum, and alumina with good coating build-up speed, smooth as-sprayed surface finish, good bonding strength (>1900 psi), good machinability and excellent hardness HB : 195-260. Application for cast iron repair.	Gas Temperature: 450-550°C Gun Pressure: 100-500 psi Powder Feed Rate: 12-100 g/min Standoff Distance: 10-40 mm	UltiLife™ Nozzle Recommended
<b>Zinc</b>	SST-Z5001	Corrosion Protection and Conductivity Needs	Glass and Steel	A pure zinc powder specially for cold spray process. Applications for corrosion protection and conductive buss bar on heated glass assembly.	Gas Temperature: 350-400°C Gun Pressure: 85-250 psi Powder Feed Rate: 12-28 g/min Standoff Distance: 10-25 mm	UltiLife™ Nozzle Recommended
<b>Tin</b>	SST-S6001	Corrosion Protection and Conductivity Needs	Copper	A pure tin powder specially for cold spray process. Application is mainly for corrosion protection and electrical conductivity.	Gas Temperature: 175-225°C Gun Pressure: 85-120 psi Powder Feed Rate: 12-25 g/min Standoff Distance: 10-25 mm	UltiFlow™ Nozzle Recommended
<b>Blasting Media</b>	SST-G0002	General Surface Preparation	Various	80 grit aluminum oxide. This medium coarse grit blast is an excellent general blasting media for preparing most surfaces. This is not a high purity oxide and may not be suitable for applications with high sensitivity to purity (e.g. corrosion protection coatings).	Gas Temperature: Room Temperature Gun Pressure: 60 - 70 psi Powder Feed Set: 10-40% for Series P, 60-160°/s for PX/EPX Standoff Distance : 10-30 mm	UltiLife™ Nozzle Recommended



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