

# Brazing Powders

## Standard High Temperature Brazing Powders Applications and Properties

Alloy Name	Nominal Composition	Melting Range °F (°C)		Brazing Range °F (°C)	Recommended Brazing Atmospheres	Applications
		Sol.	Liq.			
<b>Vitta Braz 1775</b>	Ni Bal Si 4.5 Cr 14.0 B 3.1 Fe 4.5 C 0.7	1870 (1021)	1925 (1052)	1950-2200 (1065-1204)	Vacuum Inert gasses Hydrogen	Corrosion and oxidation resistant filler metal having good strength at elevated temperatures. For joining corrosion and heat resistant alloys in highly stressed structures. Also, used for coatings.
<b>Vitta-Braz 1776</b>	Ni Bal Si 4.5 Cr 14.0 B 3.1 Fe 4.5	1790 (977)	1970 (1077)	1970-2200 (1077-1204)	Vacuum Inert gasses Hydrogen	Similar to Vitta-Braz 1775 but with less carbon content which reduces the tendency to form carbides. This filler metal is sluggish, good for wide gap applications.
<b>Vitta-Braz 1777</b>	Ni Bal Si 3.0 Cr 7.0 Fe 3.0 Si 4.1	1780 (971)	1830 (999)	1850-2150 (1010-1175)	Vacuum Inert gasses Hydrogen	Low melting point, corrosion and oxidation resistant filler metal, with good elevated temperature strength. Suited for joining nonferrous alloys, steels and thin section such as heat exchangers and honeycomb components. Used also for coatings.
<b>Vitta-Braz 1778</b>	Ni Bal Si 4.5 B 2.9	1800 (982)	1900 (1037)	1850-2150 (1010-1175)	Vacuum Inert gasses Hydrogen	Free flowing, corrosion and oxidation resistant filler metal. This filler metal wets well so it is suited for applications where deep recesses and tight clearances are encountered. Used also for coatings.
<b>Vitta-Braz 1779</b>	Ni Bal Si 3.5 B 1.9	1800 (982)	1950 (1066)	1950-2150 (1065-1175)	Vacuum Inert gasses Hydrogen	Corrosion and oxidation resistant filler metal with a wide melting range. This alloy has low diffusion. It's broad melting range makes it somewhat sluggish, so it lends itself to use in wide gap applications. Used also for coatings.
<b>Vitta-Braz 1782</b>	Ni Bal Cr 19.0 Si 10.0	1975 (1080)	2075 (1135)	2100-2200 (1150-1204)	Vacuum Inert gasses Hydrogen Dissoc. Ammonia	Boron-free corrosion and oxidation resistant filler metal. Flows extremely well and has low metal erosion. Used for joining corrosion and heat resistant alloys.
<b>Vitta-Braz 1006</b>	Ni Bal P 11.0	1610 (875)	1610 (875)	1700-2000 (925-1095)	Vacuum Inert gasses, H <sub>2</sub> Dissoc. Ammonia Reducing atm.	Low melting point, free flowing, chromium-free filler metal for brazing in poorer atmospheres.
<b>Vitta-Braz 1007</b>	Ni Bal Cr 14.0 P 10.0	1630 (890)	1630 (890)	1800-2000 (980-1095)	Vacuum Inert gasses H <sub>2</sub> Diss. Ammonia Reducing atm.	Low melting point filler metal for thin-walled structures such as honeycomb components and thin walled tube assemblies. Low solubility.
<b>Vitta-Braz 1008</b>	Ni Bal Cu 4.5 Mn23.0 Si 7.0	1800 (982)	1850 (1010)	1850-2000 (1010-1093)	Vacuum Inert gasses Hydrogen Dissoc. Ammonia	Filler metal for joining sections of stainless and low carbon steel, nickel and cobalt alloys. Has excellent flowability and non-aggressive wetting characteristics. Use for crack and low temperature repairs to existing braze joint.
<b>Vitta-Braz 1009</b>	Ni Bal Cr 15.0 B 3.6	1870 (1021)	1925 (1052)	1950-2200 (1065-1204)	Vacuum Inert gasses Hydrogen	Silicon-free filler metal for oxidation and corrosion resistant joints for stainless steel and aircraft engine parts. This alloy is readily diffused and this is suitable for diffusion brazing applications.
<b>Vitta-Braz 1783</b>	Co Bal Si 8.0 Cr 19.0 W 4.0 Ni 17.0 B 0.8	2050 (1121)	2100 (1149)	2100-2250 (1150-1230)	Vacuum Inert gasses Hydrogen	High temperature strength cobalt based brazing filler metal. Good for brazing superalloys and cobalt-based alloys. Has low base metal penetration.
<b>Vitta-Braz 1142</b>	Ni Bal B .1 Cr 7.1 Si 9.3	1975 (1079)	2075 (1135)	2125-2200 (1163-1204)	Vacuum Inert gasses Hydrogen	Modified Vitta-Braz 1782 for wide gap applications. Has better flow than Vitta-Braz 1143. Good for thin-walled assemblies and honeycomb components where minimal erosion is desired.
<b>Vitta-Braz 1143</b>	Ni Bal Cr 15.2 Si 8.1	1975 (1079)	2075 (1135)	2150-2200 (1177-1204)	Vacuum Inert gasses Hydrogen	Corrosion and oxidation resistant filler metal. Modified Vitta-Braz 1782. Suitable for thin-walled structures.
<b>Vitta-Braz 1996</b>	Ni Bal Si 4.5 Cr 13.0 B 2.7 Fe 4.5	1760 (960)	2060 (1127)	2075-2200 (1135-1204)	Vacuum Inert gasses Hydrogen	Similar to Vitta-Braz 1776. Addition of cobalt helps base metal wetting and braze alloy solid solutioning. Suitable for tight tolerances and thin sections.
<b>Vitta-Braz 1070</b>	Ni Bal Si 3.5 Cr 11.0 B 2.3 Fe 3.5	1780 (971)	2120 (1160)	2100-2200 (1149-1204)	Vacuum Inert gasses Hydrogen	Corrosion and oxidation resistant filler metal for wide gap joints where a heavier filler is desired.
<b>Vitta-Braz 1030</b>	Ni Bal Fe 3.5 W 16.0 Si 3.5 Cr 12.0 B 2.5	1780 (971)	2020 (1104)	2100-2200 (1149-1204)	Vacuum Inert gasses Hydrogen	Corrosion and oxidation resistant filler metal having good strength at elevated temperatures. Good for cobalt, molybdenum, and tungsten base metals.
<b>Vitta-Braz 1050</b>	Ni Bal P 10.0 Cr 25.0	1620 (882)	1740 (949)	1800-2000 (982-1093)	Vacuum, Inert gasses, Hydrogen Dissoc. Ammonia	Similar to Vitta-Braz 1007. This filler metal has higher corrosion resistance and strength.

Rev. 1\_102010\_Brazing Powders\_engl - subject to technical alterations