

## VBC Alloy 0220 INCO 718

Designation and Description	<b>INCO 718</b>	Issued: Sept /2015	MSRR: 9500/220	AMS: 5832 G	
		Revision: 01			
Cross Reference/ Conformance Specification	MSRR 9500/220 AMS 5832G Omat 3/206 BS EN ISO 18274:2010 NiFe19Cr19Nb5Mo5/Ni 7718 UNS Number N07718	NiFe19Cr19Nb5Mo5/Ni 7718 BS2901-5:1990 NA51 AWS A5.14/5.14M:2005 ERNiFeCr-2 DIN 1736:1985 2.4667			
Metallurgical Background Information	<p>IN 718 is produced by vacuum induction melting and re-melting techniques and the final wire is produced by special lubricant free, roller die forming followed by surface abrasion and cleaning processes. These manufacturing routes ensure consistent metallurgical integrity of the alloy with regard to control of trace elements and physical purity of the welding wire surface.</p> <p>IN 718 is a Ni-Cr precipitation hardening, high temperature alloy used for welding similar base metals where oxidation resistance and creep strength is required</p>				
Materials To Be Welded, Applications and Advice	<p>SAE-AMS 5589, 5590, 5596, 5597, 5662, 5663, 5664 MSRR 7115, 7116, 7132 PWA 1009, 1016, GEB50TF15 ASTM B637, B670, IN718, IN907. INX 750 Gas turbine component manufacture and repair. Knife-edge seal repair. Rocket motor manufacture</p>				
Wire Chemistry WT% (as per AMS)	Carbon – 0.08% max	Nickel – 50.0 – 55.0%			
	Manganese – 0.35% max	Molybdenum – 2.80 – 3.30%			
	Silicon – 0.35% max	Niobium – 4.75 – 5.50%			
	Phosphorous – 0.015% max	Titanium – 0.65 – 1.15%			
	Sulphur – 0.015% max	Aluminium – 0.20 – 0.80%			
	Chromium – 17.0 – 21.0%	Cobalt – 1.0% max			
	Boron – 0.006% max	Copper – 0.30% max			
	Iron - Balance				
Weld Properties	<p>Density 8.22 gm/cm<sup>3</sup> Typical hardness of as-deposited weld bead 395 HV</p>				
Sizes and Forms of Supply	<p>Straight lengths 2.5 kg packs 1000mm/36" lengths Flag tagged for traceability All diameters</p>	<p>Spoiled Wire Precision Layer Wound and with controlled cast and helix 12" Spools (300mm)</p>			

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