

## VBC Alloy 0004 Nimonic 90

Designation and Description	Nimonic 90 GTAW Solid Welding Wire Nickel Base		Issued: Mar/14	MSRR: 9500/4	AMS: 5829E
			Revision: 01		
Cross Reference/ Conformance Specification	MSRR 9500/4 AMS 5829(E) OMat 312 (BS EN ISO 18274:2010 NiCr20Co18Ti3/Ni 7090)		(BS 2901 Pt5 1993 NA 36) (DIN 1736:1985 2.4632) UNS N07090		
Metallurgical Background Information	Nimonic 90 is produced by special lubricant free, roller die forming and surface abrasion and cleaning processes. This manufacturing route ensures consistent metallurgical integrity of the alloy and surface physical purity of the welding wire is maintained Nimonic 90 is a Ni-Cr-Co precipitation-hardening alloy used for welding similar base metal turbine components. AMS5829 is the first AMS filler metal specification to indicate control of residual elements to improve properties.				
Materials To Be Welded, Applications and Advice	High-pressure compressor blades and vanes. High-pressure turbine blades and rotors. Service temperature up to 920°C. MSRR 7137, 7087, 7106, 7129, 7067. BS 3075, AFNOR NCK 20D.				
Wire Chemistry WT% (as per AMS)	Carbon – 0.13% max		Boron – 0.02% max		
	Manganese – 1.0% max		Iron – 1.5% max		
	Silicon – 1.0% max		Copper – 0.2% max		
	Sulphur – 0.015% max		Zirconium – 0.15% max		
	Chromium – 18-21%		Lead – 0.002% max		
	Cobalt – 15-18%		Bismuth – 0.0001% max		
	Titanium – 2-3%		Silver - 0.0001% max		
	Aluminium – 1-2%		Nickel – Balance		
Weld Properties	Tensile Strength 1175-1250 MPa hot finished Density 8.37gm/cc Elongation 28% - 30%				
Sizes and Forms of Supply	<u>Straight Length</u> 2.2 kg Packs 36" / 1000mm lengths 0.6mm – 3.2mm diameter Flag tagged		<u>Spooled Wire</u> Precision layer wound with controlled cast and helix 300mm diameter standard 0.8mm – 2.0mm diameter		

Disclaimer: All information regarding our products is based on applied experience and extensive research work. We provide these technical data in good faith that they are accurate; this does not exempt the user from the obligation to check the information contained herein, especially if the application and process has not been expressly approved by us in writing. We make no guarantees or warranties (express or implied) about the contents of this datasheet. Any changes to processes must be approved by your organisations own quality department. VBC cannot be held responsible for any errors, omissions or inaccuracies published. We may change this datasheet from time to time without notice or obligation to the users. No part of this datasheet or any of its contents may be reproduced, copied, modified or adapted, without the prior written consent of VBC Group