

CERTIFICATE OF ANALYSIS**Reference Material Type** COBALT/CHROMIUM/TUNGSTEN (CAST)**Catalogue Section:** 111X **Sample No:** 12671 **Batch No:** J**Certified Values**

ELEMENT	Si	Mn	Ni	Cr	W	Nb	Fe
%	0.51	0.61	0.88	20.5	11.8	1.95	1.45

Form and Size: Disc 40mm diameter x 15mm thickness**Supplied by:** MBH Analytical Limited**Produced by:** Willan Metals Limited**Date of Certification:** 7 October 1992**Intended Use:** With Optical Emission and X-Ray Fluorescence Spectrometers.

Recommended Method of Use: Cobalt Base Alloys are generally prepared by finishing (avoiding contamination with abrasives), milling or turning on a lathe (avoiding the use of lubricants) or lapping (using a suitable polishing media). However, users are recommended to follow the calibration and sample preparation procedures specified by the relevant instrument manufacturer. Preparation should be the same for reference materials and the samples for test. When using O.E. a minimum of three consistent replicate analyses is recommended to optimise precision and accuracy. Users are advised to check against possible bias between reference materials and production samples due to difference in metallurgical history and be aware of possible inter-element effect.

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Method of Preparation: This Reference Material was produced from pure metals and master alloys. The discs are the product of one melt poured into moulds with feeding system designed to ensure sound discs. Metal was removed from the cast surface of the discs to minimise surface effect.

Sampling: Samples were taken relative to the beginning and the end of the pour. Two discs were used for chemical analysis and were checked for homogeneity

Chemical Analysis Data:

Sample	Si	Mn	Ni	Cr	W	Nb	Fe
1	0.52	0.60	0.87	20.05	11.98	1.92	1.43
2	0.50	0.61	0.89	20.04	11.60	1.98	1.47
Mean	0.51	0.605	0.88	20.045	11.79	1.945	1.45
Stand. Deviation	0.014	0.007	0.014	0.007	0.268	0.049	0.028

