

BRAMMER STANDARD COMPANY, INC.

Provisional Certificate of Analysis BS 160B

Certified Reference Material for ASTM F15 (Kovar) - UNS Number K94610

	Estimated Analysis ¹		Estimated Analysis ¹
Analysis listed as percent by weight			
Al	0.007	Nb	0.002
As	<0.005	Ni	29.1
B	<0.005	O	<0.005
C	0.021	P	0.003
Ca	<0.005	Pb	<0.005
Co	17.2	S	0.003
Cr	0.07	Sb	0.002
Cu	0.060	Si	0.11
Fe	[53.0]	Sn	<0.05
Mg	<0.005	Ti	<0.05
Mn	0.26	V	0.004
Mo	0.05	W	0.013
N	<0.005	Zr	<0.05

¹ The estimated value listed is the present best estimate of the true value. Values are given in weight percent.

Form: This CRM is machined in the form of a disc approximately 38 mm in diameter and 19 mm thick by Brammer Standard Company, Inc.

A detailed final certificate of analysis will be supplied by January 13, 2023.

Homogeneity: This Certified Reference Material (CRM) was tested for homogeneity using ASTM Standard Method E826 and found acceptable. It was also examined by spark atomic emission spectrometry and found to be compatible with the following Reference Materials — BS CSN-2, 160A, 161, 161A; DSZU CA01A; ECRM 285-2; IARM FeKovar-18, 98B; KMS LCSON-001; SRM 126C, 1156, 1250; Y 31901.

Validity statement: ISO Guide 31 states that the certification should contain an expiration date for all materials where instability has been demonstrated or is considered possible, after which the certified value is no longer guaranteed by the certifying body. The certification of BS 160B is valid indefinitely. The certification is nullified if this CRM is damaged, contaminated, or otherwise modified.

Storage: This CRM must be stored in a cool, dry, non-corrosive environment.

Certified Area: The entire depth of the CRM may be used.

Caution: As with any bar material, avoid spark atomic emission spectrometric burns in the center of the CRM (5 mm radius), as some segregation may be present.

Sample Preparation: For best analytical results, use the same method for preparing the analytical surface on all reference materials as used for production specimens. Avoid overheating the sample during surface preparation.

Caution: CRM contains significant insoluble soft metal inclusions. Surface smearing may occur. Spark atomic emission spectrometers may require extended preburns to compensate.

Safety Notice: A Safety Data Sheet (SDS) is not required for this material. This material will not release or otherwise result in exposure to a hazardous chemical, under normal conditions of use. Inquiries concerning this Reference Material should be directed to:

Brammer Standard Co., Inc.
14603 Benfer Road
Houston, Texas 77069-2895 USA

Phone: (281) 440-9396
Fax: (281) 440-4432

Web: www.brammerstandard.com
Email: contact@brammerstandard.com

Certified by: _____ on January 13, 2021.

Beau R. Brammer
President