

# BRAMMER STANDARD COMPANY, INC.

## Provisional Certificate of Analysis BS M250

Certified Reference Material for Maraging 250 - UNS Number K92890

	Estimated Analysis <sup>1</sup>		Estimated Analysis <sup>1</sup>
Analysis listed as percent by weight			
Al	0.093	N	<0.005
B	0.003	Ni	18.7
C	0.002	O	<0.005
Ca	<0.05	P	0.003
Co	7.93	S	<0.005
Cr	0.005	Si	<0.05
Cu	0.004	Ti	0.42
Fe	[67.9]	V	<0.005
Mn	0.025	W	0.008
Mo	4.92	Zr	0.005

<sup>1</sup> 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 38mm in diameter and 19mm thick by Brammer Standard Company, Inc.

**A detailed final certificate of analysis will be supplied by July 29, 2024.**

M 250	Al	As	B	Be	Bi	C	Ca	Ce	Co	Cr	Cu	Fe	La	Mg
CSONH						0.0015								
BSC SAES	0.0945		0.0032			0.0035			7.92	0.0036	0.0041	68.03		
BSC GDS	0.0958		0.003			0.0022			7.94	0.0064	0.0031	67.7		
MTR	0.09		0.004			0.001	0.002		7.94					
Average	0.09343		0.0034			0.0021	0.002		7.93333	0.005	0.0036	67.865		
Certificate	0.093		0.003			0.002	<0.05		7.93	0.005	0.004	[67.9]		
M 250	Mn	Mo	N	Nb	Ni	O	P	Pb	S	Sb	Si	Sn	Ta	Ti
CSONH			0.000016			0.00039			0.000090					
BSC SAES	0.0219	4.9			18.58		0.0039		0.001900		0.0044			0.421
BSC GDS	0.0233	4.89			18.89		0.0035		0.000600		0.0018			0.418
MTR	0.03	4.98			18.68		0.001							0.42
Average	0.02507	4.9233	0.000016		18.717	0.00039	0.0028		0.000863		0.0031			0.4197
Certificate	0.025	4.92	<0.005		18.7	<0.005	0.003		<0.005		<0.05			0.42
M 250	V	W	Zn	Zr										
CSONH														
BSC SAES	0.000086			0.0035										
BSC GDS	0.000100	0.0082		0.0057										
MTR														
Average	0.000093	0.0082		0.0046										
Certificate	<0.005	0.008		0.005	0	0	0	0	0	0	0	0	0	0

**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 161, 161A; CT 250; SRM 1156.

**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 M250 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:

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Certified by: \_\_\_\_\_ on July 29, 2022.

Beau R. Brammer  
President

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Data Sheet Number provM250-072922 Page 2/2