

# BRAMMER STANDARD COMPANY, INC.

## Provisional Certificate of Analysis BS 4130A

Certified Reference Material for AISI 4130 - UNS Number G41300

Estimated  
Analysis<sup>1</sup>

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Analysis<sup>1</sup>

Analysis listed as percent by weight

Al	0.025	Nb	0.002
As	0.006	Ni	0.15
B	<0.005	O	<0.05
C	0.32	P	0.016
Ca	0.001	S	0.019
Co	0.007	Sb	0.002
Cr	0.97	Si	0.27
Cu	0.25	Sn	0.010
Fe	[97.2]	Ta	<0.05
Mg	<0.005	Ti	0.001
Mn	0.55	V	0.003
Mo	0.21	W	0.002
N	<0.005	Zr	0.002

<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.

4130A	Al	As	B	Be	Bi	C	Ca	Ce	Co	Cr	Cu	Fe	La	Mg
CSONH						0.317								
BSC SAES	0.0232	0.0026	0.0003			0.321	0.0009		0.0073	0.966	0.246	97.19		0.000049
BSC GDS	0.0237	0.0087	0.0004			0.317	0.0011		0.0074	0.973	0.251	97.18		0.000200
MTR	0.028					0.32				0.97	0.25			
Average	0.025	0.0057	0.0004			0.3188	0.001		0.0074	0.9697	0.249	97.185		0.000125
Certificate	0.025	0.006	<0.005			0.32	0.001		0.007	0.97	0.25	[97.2]		<0.005
4130A	Mn	Mo	N	Nb	Ni	O	P	Pb	S	Sb	Si	Sn	Ta	Ti
CSONH			0.00059			0.0011			0.0189					
BSC SAES	0.552	0.207		0.0015	0.152		0.0148		0.0186	0.0023	0.264	0.0094	0.0037	0.0012
BSC GDS	0.551	0.209		0.0011	0.158		0.0159		0.0189	0.0016	0.263			0.0012
MTR	0.55	0.21		0.002	0.15		0.016		0.019		0.27	0.010		
Average	0.551	0.2087	0.00059	0.0015	0.1533	0.0011	0.0156		0.0189	0.002	0.2657	0.0097	0.0037	0.0012
Certificate	0.55	0.21	<0.005	0.002	0.15	<0.05	0.016		0.019	0.002	0.27	0.010	<0.05	0.001
4130A	V	W	Zn	Zr										
CSONH														
BSC SAES	0.0031	0.0022		0.0019										
BSC GDS	0.0034	0.0018		0.0015										
MTR	0.003													
Average	0.0032	0.002		0.0017										
Certificate	0.003	0.002		0.002	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 — AR 8620; BS 59A, 71A, 230, 3001, 3932, 4130, 4140B, 4140C, 4142SE.

**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 4130A 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