

# Brammer Standard Company, Inc.

## Provisional Certificate of Analysis

### BS 304C

Certified Reference Material for Stainless Steel Grade 304L - UNS Number S30403

Analysis listed as percent by weight

	Estimated Analysis <sup>1</sup>		Estimated Analysis <sup>1</sup>
Al	0.002	N	0.075
As	<0.05	Nb	0.008
B	<0.005	Ni	8.53
C	0.024	O	<0.05
Ca	<0.005	P	0.034
Co	0.23	S	0.027
Cr	18.2	Si	0.30
Cu	0.52	Sn	<0.5
Fe	70.2	Ti	0.003
H	<0.005	V	0.084
Mn	1.37	W	0.045
Mo	0.42	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 26, 2025**

**Brammer Standard Company, Inc., 14603 Benfer Road, Houston, TX 77069-2895 USA**  
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304C	Al	As	B	Be	Bi	C	Ca	Ce	Co	Cr	Cu	Fe	H	Mg
CSONH						0.0246							0.00045	
BSC SAES	0.0018	0.0052	0.0006			0.0259			0.235	18.05	0.525	70.26		
BSC GDS	0.0013					0.0253	0.0002		0.229	18.34	0.515	70.11		
MTR						0.022			0.23	18.22	0.53			
Average	0.00155	0.0052	0.0006			0.02445	0.0002		0.23133	18.2033	0.52333	70.185	0.00045	
Certificate	0.002	<0.05	<0.005			0.024	<0.005		0.23	18.2	0.52	70.2	<0.005	
304C	Mn	Mo	N	Nb	Ni	O	P	Pb	S	Sb	Si	Sn	Ta	Ti
CSONH			0.0774			0.005			0.0262					
BSC SAES	1.38	0.414		0.008	8.57		0.0332		0.0287		0.304	0.0114		0.0044
BSC GDS	1.36	0.424		0.0072	8.48		0.0325		0.0264		0.294			0.0022
MTR	1.36	0.426	0.072		8.53		0.035		0.0285		0.30			
Average	1.36667	0.42133	0.0747	0.0076	8.52667	0.005	0.03357		0.02745		0.29933	0.0114		0.0033
Certificate	1.37	0.42	0.075	0.008	8.53	<0.05	0.034		0.027		0.30	<0.5		0.003
304C	V	W	Zn	Zr										
CSONH														
BSC SAES	0.0837	0.0462		0.0015										
BSC GDS	0.0836	0.043		0.0019										
MTR														
Average	0.08365	0.0446		0.0017										
Certificate	0.084	0.045		0.002										

**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: 12X17002D; AR 3040; BS CA304-2, 81G, 0221P, 304A, 304B, 321D; IARM Fe304H-18; TL 2003.

**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 304C 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.

**Source:** The bar stock for this CRM was produced by North American Stainless, Ghent, KY.

**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.**  
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**Email: [contact@brammerstandard.com](mailto:contact@brammerstandard.com)**

Certified by: \_\_\_\_\_ on July 26, 2023.

Beau R. Brammer  
President