

# Brammer Standard Company

## Certificate of Analysis

### BS CSN-2C

Calcium Treated Steel

<b>C</b>	<b>Mn</b>	<b>P</b>	<b>S</b>
0.469	0.60	0.012	0.0305
<b>Si</b>	<b>Cu</b>	<b>Ni</b>	<b>Cr</b>
0.17	0.073	0.071	0.072
<b>Mo</b>	<b>Sn</b>	<b>Al</b>	<b>V</b>
(0.006)	(0.006)	0.046	0.004
<b>Ca</b>	<b>Ti</b>	<b>Co</b>	<b>N</b>
0.0033	0.002	(0.006)	0.0173

*(analysis listed as percent by weight)*

This Reference Material is supplied in chip form in 100 gram units.

Note: Use calcium free containers when preparing this material for calcium analysis.

Some of the cooperating laboratories were:

Allegheny Ludlum, Brackenridge, PA  
Allegheny Ludlum, Lockport, NY  
Analytical Associates, Detroit, MI  
Brammer Standard Company, Inc., Houston, TX  
CyTemp, Titusville, PA  
Jessop Steel Company, Washington, PA  
Timken Company, Canton, OH

SEE REVERSE SIDE FOR MORE INFORMATION.

Certificate No. REC-CSN2C-100488

**THIS CERTIFICATE OF ANALYSIS HAS BEEN RECREATED FOR POSTING ON THE WEB.**

**Brammer Standard Company, Inc., 14603 Benfer Road, Houston, TX 77069**  
**Telephone (281) 440-9396 Fax (281) 440-4432**

Analysis Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mo
1	0.4650	0.570	0.011	0.0295	0.160	0.068	0.065	0.068	0.004
2	0.4664	0.580	0.012	0.0297	0.170	0.071	0.067	0.069	0.005
3	0.4683	0.595	0.012	0.0300	0.172	0.072	0.070	0.070	0.005
4	0.4693	0.599	0.012	0.0309	0.172	0.074	0.073	0.070	0.010
5	0.4698	0.604	0.013	0.0311	0.175	0.075	0.074	0.072	
6	0.4757	0.606		0.0319	0.180	0.077	0.078	0.075	
7		0.610						0.077	
8		0.612							
Average	0.4691	0.5970	0.0120	0.0305	0.1715	0.0728	0.0712	0.0716	0.006
Std.Dev.	0.0037	0.0149	0.0007	0.0009	0.0066	0.0032	0.0048	0.0033	0.003
Certified	0.469	0.60	0.012	0.0305	0.17	0.073	0.071	0.072	(0.006)

continued

Analysis Number	Ca	V	Co	Sn	Al	Ti	N
1	0.0028	0.003	0.0054	0.005	0.0420	0.0017	0.0168
2	0.0030	0.003	0.0056	0.005	0.0430	0.0020	0.0170
3	0.0031	0.004		0.007	0.0450	0.0020	0.0171
4	0.0032	0.005			0.0460	0.0024	0.0173
5	0.0033	0.005			0.0470	0.0026	0.0177
6	0.0034				0.0520		0.0179
7	0.0035						
8	0.0037						
Average	0.0033	0.0040	0.0055	0.0057	0.0458	0.0021	0.0173
Std.Dev.	0.0003	0.0010	0.0001	0.0012	0.0035	0.0004	0.0004
Certified	0.0033	0.004	(0.006)	(0.006)	0.046	0.002	0.0173

Data in parentheses are not certified but provided for information only.

The values listed above are individual laboratory analytical results.

Methods of analysis used were a combination of ASTM Standard Test Methods for classical wet chemistry, ICP and AA spectrometric methods, and combustion procedures for carbon and sulfur.

Inquiries concerning this Reference Material should be directed to:

Brammer Standard Co., Inc.  
14603 Benfer Road  
Houston, Texas 77069  
www.brammerstandard.com

Phone: (281) 440-9396  
Fax: (281) 440-4432  
email: [contact@brammerstandard.com](mailto:contact@brammerstandard.com)

Certified by: \_\_\_\_\_ on October 4, 1988.

G. R. Brammer

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