

Brammer Standard Company, Inc.

Certificate of Analysis

BS 74B

Grade 12L14 Leaded Steel Reference Material

C	Mn	P	S	Si
0.08	0.91	0.087	0.316	0.002
Cu	Ni	Cr	Mo	Sn
0.006	0.012	0.019	0.008	(<0.005)
	Al	Pb		
	(0.002)	0.34		

(analysis listed as percent by weight)

COOPERATING LABORATORY ANALYSES WERE:

Analytical Process Laboratories, Milwaukee, WI
Anderson Laboratories, Milwaukee, WI
Bowser-Morner Testing Labs., Inc., Dayton, OH
Chicago Spectro Service Labs., Inc., Chicago, IL
Copperweld Steel Co., Warren, MI
Crucible Inc./Specialty Metals Div., Syracuse, NY
Midstates Analytical Laboratories, Inc., Tulsa, OK
Spectrochemical Laboratories, Inc., Pittsburgh, PA

SURFACE PREPARATION: It is important to use a surfacing method which will give the reference materials a coarse surface. A sanding belt no finer than 40 grit is recommended. Grinding the surface with a finer grit belt will produce a lead-smear effect.

See reverse side for more information.

Certificate No. REC74B-061587p1

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	0.070	0.890	0.079	0.300	0.0010	0.0040	0.008	0.017	0.0060
2	0.074	0.900	0.086	0.304	0.0010	0.0050	0.010	0.017	0.0070
3	0.076	0.910	0.087	0.308	0.0020	0.0058	0.010	0.018	0.0075
4	0.079	0.915	0.087	0.314	0.0030	0.0060	0.010	0.019	0.0080
5	0.080	0.920	0.088	0.314	0.0030	0.0060	0.010	0.019	0.0080
6	0.080	0.930	0.088	0.315	0.0030	0.0080	0.011	0.020	0.0090
7	0.080	0.930	0.095	0.316		0.0080	0.012	0.020	0.0100
8	0.080			0.317			0.013	0.020	0.0100
9	0.085			0.322			0.015	0.020	0.0100
10				0.330			0.020	0.023	
11				0.336					
Average	0.0782	0.9136	0.0871	0.3160	0.0022	0.0061	0.0119	0.0193	0.0084
Std.Dev.	0.0043	0.0149	0.0047	0.0105	0.0010	0.0015	0.0034	0.0018	0.0015
Certified	0.08	0.91	0.087	0.316	0.002	0.006	0.012	0.019	0.008

continued

Analysis Number	Al	Pb	Sn
1	0.0010	0.325	0.001
2	0.0010	0.333	0.003
3	0.0015	0.335	
4	0.0015	0.339	
5	0.0020	0.340	
6	0.0020	0.340	
7	0.0020	0.341	
8	0.0030	0.343	
9	0.0040	0.350	
10	0.0060	0.352	
Average	0.0024	0.3398	0.0020
Std.Dev.	0.0016	0.0078	
Certified	(0.002)	0.34	(<0.005)

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

Chemical analyses were made on millings from the cross-section of the bars. The values listed are the individual laboratory analytical results for the elements listed.

This Reference Material (RM) was produced by cold-rolling and annealing. This RM should be used and compared with material of similar metallurgical history as it may not plot well with chill-cast materials on some instruments.

Inquiries concerning this Reference Material should be directed to:

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

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

Certified by _____ on June 15, 1987.
G. R. Brammer

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