Brammer Standard Company, Inc.

Certificate of Analysis

BS 675

Copper Alloy

(analysis listed as percent by weight)

Cu	Pb	Sn	Zn	Mn
(58.5)	<0.01	0.92	39.7	0.11

Al	Fe	Ni	P	Si
<0.01	0.73	<0.01	<0.01	<0.02

As	Sb	S	C
<0.005	<0.01	(0.0013)	(0.0004)

Some of the laboratories cooperating in the testing process were:

Alpha Research Laboratories, Stevensville, MI
Brammer Standard Company, Inc., Houston, TX
Dirats Laboratories, Westfield, MA
Herron Testing Laboratories, Inc., Cleveland, OH
Metal Analysis Inc., Huntington Park, CA
Midstates Testing Laboratories, Inc., Tulsa, OK
VHG Labs, Andover, MA

Data in parentheses are not certified but provided for information.

The copper data was calculated by difference.

See data on reverse side. Certificate No. REC675-100587

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	Cu**	Pb	Sn	Zn	Mn	Al	Fe	Ni	P
1		<0.002	0.86	39.20	0.100	<0.002	0.660	<0.002	<0.002
2		<0.005	0.87	39.65	0.100	<0.005	0.720	<0.005	<0.005
3		<0.005	0.92	39.73	0.106	<0.005	0.720	<0.005	<0.01
4		0.007	0.96	39.76	0.109	<0.01	0.767	<0.01	0.002
5		0.009	0.98	39.88	0.115	0.008	0.780	0.010	0.007
6				39.95					
Average	58.552		0.918	39.695	0.1060		0.7294		
Std.Dev.			0.053	0.265	0.0064		0.0473		
Certified	(58.5)	<0.01	0.92	39.7	0.11	<0.01	0.73	<0.01	<0.01

continued

Analysis Number	Si	As	Sb	C	S
1	<0.01	<0.002	0.004	0.0004	0.0013
2	0.003	<0.005	0.006		
3	0.005	<0.005	0.008		
4	0.013		0.009		
5	<0.02		<0.01		
Certified	<0.02	<0.005	<0.01	(0.0004)	(0.0013)

** Copper by difference.

One laboratory reported 58.48% Cu by electroplating.

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

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

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

Phone: (281) 440-9396
Fax: (281) 440-4432

Certified by: _____ on October 5, 1987.
G. R. Brammer

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