Brammer Standard Company, Inc.

Certificate of Analysis

B.S. CC905

Copper Alloy 905

Copper	85.4	Silicon	0.003
Tin	9.68	Manganese	0.0014
Lead	0.58	Phosphorus	0.059
Zinc	2.89	Arsenic	0.004
Iron	0.048	Antimony	0.011
Nickel	1.51	Carbon	0.003
Aluminum	0.0007	Sulfur	0.015

(analysis listed as percent by weight)

Some of the co-operating laboratories were:

Brammer Standard Co., Inc., Houston, Texas
Colonial Metals, Columbia, Pennsylvania
J. Dirats and Co., Inc., Westfield, Massachusetts
Technical Service Laboratories Inc., Mississauga, Ontario, Canada
VHG Labs, Manchester, New Hampshire

See data on reverse side.

Certificate No. CC905-030392

Brammer Standard Company, Inc., 14603 Benfer Road, Houston, TX 77069
Telephone (713) 440-9396 Fax (713) 440-4432

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Analysis	Cu	Sn	Pb	Zn	Fe	Ni	Al	Si
1	85.28	9.61	0.56	2.85	0.046	1.46	0.0006	0.003
2	85.4	9.61	0.557	2.87	0.047	1.49	0.0007	0.003
3	85.42	9.65	0.58	2.90	0.049	1.52	0.0008	0.0032
4	85.6	9.70	0.589	2.92	0.049	1.54		0.004
5		9.72	0.628	2.92	0.0504	1.54		
6		9.76						
Average	85.425	9.675	0.583	2.892	0.0483	1.510	0.0007	0.0033
Std Dev	0.132	0.062	0.029	0.031	0.0018	0.035	0.0001	0.0005
Certified	85.4	9.68	0.58	2.89	0.048	1.51	0.0007	0.003

Analysis	Mn	P	As	Sb	C	S
1	0.0013	0.056	0.0029	0.0089	0.0018	0.014
2	0.0014	0.058	0.0034	0.0098	0.003	0.0143
3	0.0014	0.059	0.0039	0.0106	0.003	0.016
4	0.0014	0.061	0.004	0.012		
5		0.0614	0.0041	0.0123		
6			0.005			
Average	0.0014	0.0591	0.0039	0.0107	0.0026	0.0148
Std Dev	0.0001	0.0022	0.0007	0.0014	0.0007	0.0011
Certified	0.0014	0.059	0.004	0.011	0.003	0.015

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

Chemical analyses were made on millings from cross-sections of the bars. The individual values listed above are the average of each analyst's results.

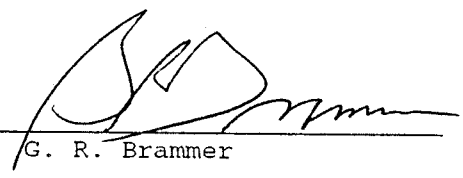
Methods of analysis used were a combination of ASTM Standard Methods E 54-80, E 62-89, E 478-89a, plus additional ICP, and AA spectrometric methods. The following Certified Reference Materials were used to validate the analytical data listed above: NIST SRM 394, 400, 871, 872; German BAM 227, 228, 361; Brasilian IPT 10a, 15; British BCS 183/4.

This Reference Material was tested for homogeneity using ASTM Standard Method E 826 and found acceptable. NIST had no similar Certified Reference Materials procurable in solid form for spectrometric comparison during the testing of this material.

A Material Safety Data Sheet (MSDS) 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. Inquires concerning this Reference Material should be directed to:

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

Phone: (713) 440-9396
Fax: (713) 440-4432
Telex: 775376

Certified by  on March 3, 1992.

G. R. Brammer