

BUREAU OF ANALYSED SAMPLES LTD



Directors:-

P.D. Ridsdale, B.Sc., C.Eng., M.I.M., M.R.S.C., (Chairman)

R.P. Meeres, B.A., (Oxon), M.R.S.C., (Managing)

G.C. Flintoft, A.C.M.A.



Certificate No Q 3993

ANALYSIS REPORT

COPPER BASE ALLOY REFERENCE MATERIAL

CURM No. 54.02-4

PHOSPHOR BRONZE

The material for this CURM was prepared specially for Bureau of Analysed Samples Ltd using a method of casting known to provide material of uniform composition in a form suitable for use as calibration reference materials in XRF and optical emission spectroscopic analysis. Using Optical Emission Spectrometry the samples have been shown, by statistically designed procedures, to produce reproducible results.

The chemical analysis of representative turnings was carried out independently by both Bureau of Analysed Samples Ltd., and another laboratory experienced in the analysis of non-ferrous materials. The values reported are the overall Means and Standard Deviations (s.d.) of three separate determinations made in each laboratory.

ANALYSIS

mass content in %

| Element | Mean | s.d. | Element | Mean | s.d. |
|---------|--------------|-------|---------|---------------|--------|
| Cu | 92.87 | 0.03 | Si | 0.012 | 0.001 |
| Sn | 5.53 | 0.04 | Mn | 0.101 | 0.001 |
| Pb | 0.663 | 0.005 | As | 0.023 | 0.001 |
| Zn | 0.410 | 0.002 | Sb | 0.026 | 0.001 |
| Ni | 0.109 | 0.003 | Al | 0.020 | 0.001 |
| P | 0.107 | 0.004 | S | 0.030 | 0.002 |
| Fe | 0.102 | 0.002 | Mg | 0.0020 | 0.0001 |

Note: This CURM is available in bottles of 100 g of turnings or as a chill cast disc, approximately 50 mm diameter x 12 mm thick, with a single chilled working face (smaller diameter). Spectroscopic reproducibility has been shown to be reliable to a depth of 5 mm below the chilled surface as supplied. The disc should therefore be discarded when the thickness is reduced to 7 mm.

It has been established that materials of similar composition from different sources may respond differently on Optical Emission Spectrometers. CURMs are intended primarily for the construction of basic response curves which should be related to the response curves obtained from an identical examination of the user's own material.

N.B. Although these samples have been carefully analysed by both BAS Ltd and an independent laboratory, using the methods detailed overleaf, they have been classified as Reference Materials (RM)* and not Certified Reference Materials (CRM)* in order to distinguish them from the BAS Certified Reference Materials which are normally analysed by at least five laboratories.

* See over for ISO definitions.

(PTO)

