

Cystine CRM

Cat No B2900, B2901 - Certificate No 288094

General

This Organic Analytical Standard (OAS) consists of a (purified) and homogeneous batch of cystine for use as a routine working microanalytical standard for the determination of Carbon, Hydrogen, Nitrogen, Oxygen and Sulphur in the calibration of instruments or measurement systems.

Certified Values and Uncertainty

Certified values are found from the unweighted mean of the characterisation study. The uncertainty in the certified value is expressed as expanded uncertainty, U, at 95% confidence and is calculated in accordance with BS EN ISO/IEC17025 according to GUM (Uncertainty of Measurement – Part 3: Guide to the expression of uncertainty in measurement) and BS EN ISO/IEC17034. The uncertainty associated with each certified value was calculated by combining the characterisation/homogeneity uncertainty from multiple determinations, with the uncertainty calculated from stability studies.

Traceability

The certified values for Carbon, Hydrogen and Nitrogen were determined by elemental analyser calibrated to Cystine 143d from National Institute of Standards and Technology (NIST), Maryland, USA.

The certified value for Oxygen was determined by elemental analyser calibrated to Cystine 143d from National Institute of Standards and Technology (NIST), Maryland, USA.

The certified value for Sulphur was determined by elemental analyser calibrated to Cystine 143d from National Institute of Standards and Technology (NIST), Maryland, USA.

Element	Certified Value (% w/w)	Uncertainty (± % w/w)	Theoretical (% w/w)
Carbon	29.97	0.13	29.99
Hydrogen	5.03	0.05	5.03
Nitrogen	11.68	0.07	11.66
Oxygen	26.64	0.12	26.63
Sulphur	26.68	0.10	26.69

Sampling and Handling

The minimum sample size per use is 2-3mg to guarantee the property value associated uncertainty. GLP should be adhered to, to prevent contamination.

Expiration of Certification

The certification of this OAS is valid until the 1st of May 2033 within the measurement uncertainties specified.

Storage and Use

This OAS should be stored at temperatures under 33°C and should be kept tightly sealed away from direct light and moisture. It is non-hygroscopic under normal conditions and can be used without preliminary drying.

Health and Safety

Refer to Safety Data Sheet supplied with this material. Additional copies can be found at www.elementalmicroanalysis.com

Certification Information

The technical aspects involved in the preparation, certification and issuance of this (In)Organic Analytical Standard (IAS/OAS) were carried out at Elemental Microanalysis Limited, Okehampton, Devon, EX20 1UB, UK, Tel +44 1837 54446, Fax +44 1837 54544, Email info@microanalysis.co.uk.

This Certified Reference Material was manufactured and produced to the requirements of ISO/IEC17034, in compliance with the requirements of ISO Guides 31 and 35 for the production of Reference Materials.

For and on behalf of Elemental Microanalysis Limited



Jon Davies

Technical Director

References:

BS EN ISO/IEC Standard 17025:2005 General requirements for the competence of testing and calibration laboratories

BS EN ISO/IEC Standard 17034:2016 General requirements for the competence of reference material producers

BS EN ISO Guide 31:2015 Reference Materials- Contents of certificates, labels and accompanying documentation

ISO Guide 35:2017(E) Reference Materials- Guidance for characterisation and assessment of homogeneity and stability

GUM Uncertainty of Measurement – Part 3: Guide to the expression of uncertainty in measurement

This certificate may not be published except in full.