

Haemiglobincyanide (cyanmethaemoglobin) preparation as a standard for spectrometric haemoglobinometry

ICS 11.100

Confirmed October 2008

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee CH/212, In vitro diagnostics, upon which the following bodies were represented:

- Association of Anaesthetists of Great Britain and Northern Ireland
- Association of British Healthcare Industries (ABHI)
- Association of Clinical Biochemists
- Association of the British Pharmaceutical Industry
- Association of the Laboratory Supply Industry (BLWA Ltd.)
- British Blood Transfusion Society
- British Diabetic Association
- British Glass Manufacturers Confederation
- British In Vitro Diagnostics Association
- British Society for Antimicrobial Chemotherapy
- British Society for Haematology
- Clinical Pathology Accreditation (UK)
- Department of Health, Medical Devices Agency
- Department of Health, Medicines Control Agency
- Guild of Hospital Pharmacists
- Institute of Biomedical Science
- Institute of Quality Assurance
- Medical Sterile Products Association
- National Institute for Biological Standards and Control
- Parenteral Society
- Radcliffe Hospital, Oxford
- Royal College of Pathologists
- Royal Society of Health
- Scottish National Blood Transfusion Service
- United Kingdom National External Quality Assessment Service (UK NEQAS)
- Coopted members

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Foreword

This British Standard has been prepared by Technical Committee CH/212. It supersedes BS 3985:1978, which is withdrawn.

This British Standard was first published in 1966 and revised in 1978. The present new edition brings it up to date for use in the determination of haemoglobin by spectrometers which require calibration if the results are to be obtained in absolute terms. A reliable preparation can also be used to check performance of any spectrometer over the specified range of wavelengths and for checking the accuracy of dedicated haemoglobinometers which are pre-calibrated at the factory or rely on artificial standards.

This new edition of the standard incorporates technical changes only. It does not represent a full review or revision of the standard, which will be undertaken in due course.

Converting the haemoglobin from blood into haemiglobincyanide (HiCN), (formerly termed cyanmethaemoglobin) is now the preferred method for preparing a reference standard as this is stable for at least six years (van Assendelft et al. 1976 [1] and 1996 [2]). The International Council (formerly Committee) for Standardization in Haematology (ICSH) established specifications for this, based on a molar area (decadic) absorbance of 11.0 at a wavelength of 540 nm (the absorbance of a solution containing 55.85 mg/l of haemoglobin iron and having a light path length of 1.000 cm) and a molar mass of $64\,458/4 = 16\,114.5$ for human blood and $64\,532/4 = 16\,133$ for bovine blood.

These specifications conform to the International Council for Standardization in Haematology standard which was established at the tenth Congress of the International Society of Haematology (ICSH, 1978 [3]) and later reviewed by an Expert Panel (ICSH, 1995 [4]). This preparation was adopted by the World Health Organization as an international reference standard and also by the European Commission Bureau of Reference (Lewis, 1996 [5]).

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Summary of pages

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