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Australian Standard 1503 — 1976

TERMS USED IN EMISSION SPECTROSCOPY

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THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL ORGANIZATIONS and departments and SAA technical committees were officially represented on the committee entrusted with the preparation of this standard:

Australian Atomic Energy Commission
Australian Mineral Development Laboratories
Bureau of Steel Manufacturers of Australia
CSIRO, Division of Chemical Physics
CSIRO, National Measurement Laboratory
Department of Industry and Commerce
National Association of Testing Authorities
Royal Australian Chemical Institute
SAA Committee on Non-ferrous Analytical Standards
SAA Committee on Sampling and Analysis of Ferrous Metals
State Electricity Commission of Victoria
Other firms and organizations specializing in this field

This standard, prepared by Committee CH/16, Spectroscopy, was approved on behalf of the Council of the Standards Association of Australia on 14 May 1976, and was published on 1 November 1976.

In order to keep abreast of progress in the industries concerned, Australian standards are subject to periodical review. Suggestions for improvements to published standards, addressed to the head office of the Association, are welcomed.

AUSTRALIAN STANDARD

GLOSSARY OF TERMS USED IN EMISSION SPECTROSCOPY

AS 1503 — 1976

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PREFACE

This glossary of terms used in emission spectroscopy and a companion standard for terms used in X-ray spectroscopy were prepared by the Association's Committee on Spectroscopy under the direction of the Chemical Standards Board.

The glossaries have a common section, viz Section 1, Common Spectroscopic Terms. The terms and definitions in this section are of a general nature, applicable to both optical emission and X-ray spectroscopy.

In the preparation of the glossary the publications detailed in the Bibliography were consulted. The assistance received from these is acknowledged, particularly in respect of ASTM E135, Terms and Symbols Relating to Emission Spectroscopy.

There has been considerable development in spectrochemical instruments using energy dispersive systems. For these instruments several definitions require the substitution of energy terms for wavelengths and frequencies.

The committee has used what it regards as being the currently correct terms. Other terms which have similar meanings are listed in the index.

Attention is drawn to the fact that the glossary makes no reference to the Angstrom unit of measurement which however will probably continue to appear in the literature for some time yet.

$$1 \text{ Angstrom unit } (\text{Å}) = 10^{-10}\,\text{m}$$
$$= 10^{-1} \text{ nm (see 1.25, nanometre).}$$

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
GLOSSARY OF TERMS USED IN EMISSION SPECTROSCOPY

SECTION 1. COMMON SPECTROSCOPIC TERMS

Ref. No	Term	Definition
1.1	**absorption**	A decrease in radiant energy when it passes through matter, resulting in a corresponding increase in the energy of the absorbing system.
1.2	**accuracy**	The quantitative expression for the deviation of a determination from an accepted reference level.
1.3	**analytical curve**	The graphical representation of a relation between— (a) some function of radiant power, and (b) the concentration or mass of the substance emitting or absorbing it.
1.4	**axis, optical**	The line joining the centres of curvature of the surfaces of lenses or mirrors in an optical system.
1.5	**background, spectral**	Radiant energy at the wavelength of, but not directly related to, the desired observation. For a spectral line, spectral background may consist of other lines, bands, continuous radiation, and scattered radiation.
1.6	**collimation**	The operation of controlling a beam of radiation so that its rays are as nearly parallel as possible.
1.7	**concentration**	The quantity of a substance contained in a unit quantity of sample.
1.8	**detection limit**	A stated limiting value which designates the lowest concentration or quantity that can be determined with a stated level of confidence, and which is specific to the analytical procedure used.
1.9	**determination**	The measurement of a spectral property which relates to the quantity or concentration of a specific substance in a sample.
1.10	**dispersion, linear**	The derivative $dx/d\lambda$ where x = distance along the spectrum λ = wavelength. Linear dispersion is usually expressed as millimetres per nanometre.