

Review of Footnotes and Annotations to the 1949–2013 Tables of Standard Atomic Weights and Tables of Isotopic Compositions of the Elements (IUPAC Technical Report)

Tyler B. Coplen and Norman E. Holden
Pure and Applied Chemistry, 2016
Volume 88, Issue 7, pp. 689–699

The Commission on Isotopic Abundances and Atomic Weights uses annotations given in footnotes that are an integral part of the Tables of Standard Atomic Weights to alert users to the possibilities of quite extraordinary occurrences, as well as sources with abnormal atomic-weight values outside an otherwise acceptable range. The basic need for footnotes to the Standard Atomic Weights Table and equivalent annotations to the Table of Isotopic Compositions of the Elements arises from the need to provide users with information that is relevant to one or more elements, but that cannot be provided using numerical data in columns. Any desire to increase additional information conveyed by annotations to these Tables is tempered by the need to preserve a compact format and a style that can alert users, who would not be inclined to consult either the last full element-by-element review or the full text of a current Standard Atomic Weights of the Elements report. Since 1989, the footnotes of the Tables of Standard Atomic Weights and the annotations in column 5 of the Table of Isotopic Compositions of the Elements have been harmonized by the use of three lowercase footnotes, “g”, “m”, and “r”, that signify geologically exceptionally specimens (“g”), modified isotopic compositions in material subjected to un-

disclosed or inadvertent isotopic fractionation (“m”), and the range in isotopic composition of normal terrestrial material prevents more precise atomic-weight value being given (“r”). As some elements are assigned intervals for their standard atomic-weight values (applies to 12 elements since 2009), footnotes “g” and “r” are no longer needed for these elements.

<http://dx.doi.org/10.1515/pac-2016-0203>

Guidelines for Measurement of Luminescence Spectra and Quantum Yields of Inorganic and Organometallic Compounds in Solution and Solid State (IUPAC Technical Report)

Hitoshi Ishida, Jean-Claude Bünzli and Andrew Beeby
Pure and Applied Chemistry, 2016
Volume 88, Issue 7, pp. 701–711

Guidelines for measuring the luminescence of inorganic compounds, metal complexes, and organometallic compounds are described. Common textbooks and manuals describing luminescence measurements are usually targeted at organic compounds and are not always suitable for inorganic and organometallic compounds, which emit room-temperature phosphorescence. This report describes problems that researchers may confront while recording emission data, as well as clear procedures to avoid these problems and provide adequate standardized protocols.

<http://dx.doi.org/10.1515/pac-2014-0706>