

Standard Atomic Weight of Ytterbium Revised

The IUPAC Commission on Isotopic Abundances and Atomic Weights (II.1) met under the chairmanship of Dr. Juris Meija, at the University of Natural Resources and Life Sciences Vienna, Austria, prior to the 48th IUPAC General Assembly in Busan, Korea, in August 2015. Following its meeting, the Commission recommended a change to the standard atomic weight of ytterbium. The IUPAC Bureau, at its meeting on 14 August, approved this change.

The standard atomic weight of ytterbium has been changed based on a recent measurement of terrestrial isotopic abundances from 173.054(5) to 173.045(10). For ytterbium, which was first obtained in a pure state some 50 years ago, only two calibrated measurements of its isotopic composition have been made. These measurements differ from one another. Ytterbium exemplifies a situation that is true for many other elements: well-documented isotope ratio measurements are still needed.

In addition to revising standard atomic weights, CIAAW discussed the uncertainty interpretation of standard atomic weights and resolved to endorse probabilistic interpretation of standard atomic weights using various probability density functions, including the uniform probability distribution as outlined in the Eurachem/CITAC Guide when no specific knowledge is available about the isotopic composition of a material of interest. In all cases, probability distributions describe the lack of knowledge about isotopic compositions of particular materials or classes of materials and not the actual distribution of natural abundances. These changes and considerations will be published in the upcoming release "Atomic Weights of the Elements 2015", which will appear in *Pure and Applied Chemistry*. The revised values can also be found online at the website of the commission (www.ciaaw.org).

The importance of determining precise atomic weights has long been recognized, resulting in the creation of the International Atomic Weights Committee in 1899. IUPAC has overseen the periodic evaluation and dissemination of standard atomic-weight values since its formation in 1919.

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www.iupac.org/news/news-detail/article/standard-atomic-weight-of-ytterbium-revised.html

De Gruyter to Launch Chemistry Standards Database

Available starting in 2016, the **IUPAC Standards Online** database will make standards and recommendations in the field of chemistry quickly and easily accessible to internet users. De Gruyter is developing the database together with the International Union of Pure and Applied Chemistry (IUPAC), the organization responsible for establishing internationally binding standards for scientists working in research and industry, for patent lawyers and other legal professionals, as well as for environmental scientists and toxicologists. A beta version of the database was presented at the 45th World Chemistry Congress in August in Busan, South Korea.

"The tremendous benefit of this database is that it will bring all standards and recommendations previously published in the journal of *Pure and Applied Chemistry* into the digital era, making it easily available from a central location," says Karin Sora, Senior Editorial Director for Science & Technology at De Gruyter.

With over 60 National Adhering Organizations, over 100 adhering organizations, and 5000 affiliate members, IUPAC is the world authority on chemical nomenclature, terminology, standardized methods for measurement, atomic weights, and many other critically evaluated data.

Dr. Mark Cesa, President of IUPAC, views the annual updating of the database as a particular strength: "In 2013 alone there were 1000 new standards. Having this information easily available from a central source will make the work of chemistry professionals around the world much easier."

<http://www.degruyter.com/view/db/iupac>