## Atomic Weights of the Elements 2013 (IUPAC Technical Report)

**Juris Meija, *et al.***
***Pure and Applied Chemistry*, 2016**
**Volume 88, Issue 3, pp. 265–291**

The biennial review of atomic-weight determinations and other cognate data has resulted in changes for the standard atomic weights of 19 elements. The standard atomic weights of four elements have been revised based on recent determinations of isotopic abundances in natural terrestrial materials (cadmium, molybdenum, selenium, and thorium), while the revision of 15 others is based on the 2012 Atomic Mass Evaluation (aluminium, arsenic, beryllium, caesium, cobalt, fluorine, gold, holmium, manganese, niobium, phosphorus, praseodymium, scandium, thulium, and yttrium). The Commission on Isotopic Abundances and Atomic Weights (ciaaw.org) also recommends the standard value for the natural terrestrial uranium isotope ratio, $N(^{238}U)/N(^{235}U) = 137.8(1)$.

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## Isotopic Compositions of the Elements 2013 (IUPAC Technical Report)

**Juris Meija, *et al.***
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The Commission on Isotopic Abundances and Atomic Weights (ciaaw.org) has revised the Table of Isotopic Compositions of the Elements (TICE). The update involved a critical evaluation of the recent published literature. The new TICE 2013 includes evaluated data from the "best measurement" of the isotopic abundances in a single sample, along with a set of representative isotopic abundances and uncertainties that accommodate known variations in normal terrestrial materials.

http://dx.doi.org/10.1515/pac-2015-0503

## Substance-related Environmental Monitoring Strategies Regarding Soil, Groundwater and Surface Water

**Werner Kördel, *et al***
***Environ Sci Pollut Res* 20, 2810-2827 (2013)**

Substance-related monitoring is an essential tool in different fields of environmental risk assessment. Soil or water quality is monitored, for example, to check the compliance of environmental burdens with legal threshold values. This is, *e.g.,* an essential element of the Water Framework Directive implemented in the European Union (EU). In case of non-compliance with environmental quality standards, risk mitigation measures have to be taken (*e.g.*, improvement of filter technologies). Another application of environmental monitoring is in the risk assessment of chemicals. Appropriate monitoring data may support the assessment by providing data for the exposure of organisms to certain chemicals or the persistence or accumulation of compounds in environmental matrices. Based on such data it may be ruled that the application of a chemical may only be possible if certain risk mitigation measures are implemented (*e.g.*, usage only in closed systems). Environmental monitoring may also be used for identifying chemicals of emerging concern in different environmental media (*e.g.*, compounds with endocrine properties). Such emerging substances may require the implementation of certain regulations to protect the environment. However, the coverage of new substances in monitoring programs is sometimes hindered by a vicious circle (Figure 1).

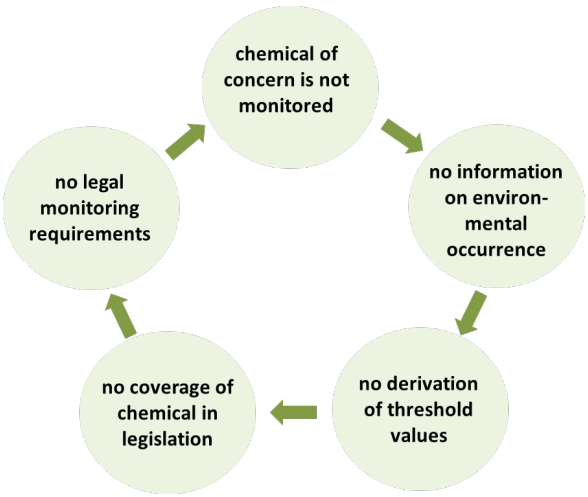


*Figure 1: A vicious circle may prevent monitoring of emerging chemicals of concern (modified after Kördel et al. 2013).*