Extension of ThermoML: The IUPAC Standard for Thermodynamic Data Communications (IUPAC Recommendations 2011)

Michael Frenkel, et al.
Pure and Applied Chemistry, 2011
Vol. 83, No. 10, pp. 1937–1969

ThermoML is an XML-based approach for storage and exchange of experimental, predicted, and critically evaluated thermophysical and thermochemical property data. Extensions to the ThermoML schema for the representation of speciation, complex equilibria, and properties of biomaterials are described. The texts of 14 data files illustrating the new extensions are provided as Supplementary Information together with the complete text of the updated ThermoML schema.

http://dx.doi.org/10.1351/PAC-REC-11-05-01

Terminology of Polymers and Polymerization Processes in Dispersed Systems (IUPAC Recommendations 2011)

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Pure and Applied Chemistry
ASAP online 2011-09-10
doi:10.1351/PAC-REC-10-06-03

A large group of industrially important polymerization processes is carried out in dispersed systems. These processes differ with respect to their physical nature, mechanism of particle formation, particle morphology, size, charge, types of interparticle interactions, and many other aspects. Polymer dispersions, and polymers derived from polymerization in dispersed systems, are used in diverse areas such as paints, adhesives, microelectronics, medicine, cosmetics, biotechnology, and others. Frequently, the same names are used for different processes and products or different names are used for the same processes and products. The document contains a list of recommended terms and definitions necessary for the unambiguous description of processes, products, parameters, and characteristic features relevant to polymers in dispersed systems.

http://dx.doi.org/10.1351/PAC-REC-10-06-03

Letters About the IUPAC-IUGS Common Definition and Convention on the Use of the Year as a Derived Unit of Time

A set of recommendations jointly prepared by IUPAC and the International Union of Geological Sciences (IUGS) was recently published in *Pure and Applied Chemistry* (2011, Vol. 83, No. 5, pp. 1159–1162), which triggered a couple of letters to *Chemistry International*. The recommendations abstract reads as follows:

The units of time (both absolute time and duration) most practical to use when dealing with very long times, for example, in nuclear chemistry and earth and planetary sciences, are multiples of the year, or annus (a). Its proposed definition in terms of the SI base unit for time, the second (s), for the epoch 2000.0 is 1 a = 3.1556925445×10^7 s. Adoption of this definition, and abandonment of the use of distinct units for time differences, will bring the earth and planetary sciences into compliance with quantity calculus for SI and non-SI units of time.

In one letter, L.E. Edwards argues that neither a year nor an annus can be a derived unit in the SI. Instead, she states, SI derived units are products of powers of base units. In a separate letter, N. Christie-Blick argues that what is at stake is whether or not a necessary distinction exists between geohistorical dates and unconstrained spans of geological time.

Both letters, in full, and the invited reply by the IUPAC/IUGS task group are online as a supplement to this issue. While responding, the task group stated that “What a scientific convention can do is point to what is considered correct as a result of very long and very careful evaluations of all possible arguments that are available at a given time after weighing of their merits.”

www.iupac.org/publications/ci/2011/3306/pac_letters-sup.html