

Representation of Configuration in Coordination Polyhedra and the Extension of Current Methodology to Coordination Numbers Greater than Six (IUPAC Technical Report)

Richard M. Hartshorn, Evamarie Hey-Hawkins, René Kalio, and G. Jeffery Leigh

Pure and Applied Chemistry

Vol. 79, No 10, pp. 1779–1799, 2007

doi:10.1351/pac200779101779

In this report, established IUPAC recommendations for the representation of configuration are reviewed briefly, and then methodologies are examined for dealing with regular polyhedra that are typically used when working with coordination numbers greater than 6. More than one method is available and can be used for many such geometries, but the deviations from regular polyhedral geometries that are typically found in such molecules can make it difficult to arrive reproducibly at the same description for a complex using purely objective criteria. Recommendations are made for some geometries of coordination numbers 7, 8, and 9, but not for higher coordination numbers.

 www.iupac.org/publications/pac/79/10/1779

Definitions of Terms Relating to the Structure and Processing of Sols, Gels, Networks, and Inorganic-Organic Hybrid Materials (IUPAC Recommendations 2007)

J. Alemán, A.V. Chadwick, J. He, M. Hess, K. Horie, R.G. Jones, P. Kratochvíl, I. Meisel, I. Mita, G. Moad, S. Penczek, and R.F.T. Stepto

Pure and Applied Chemistry

Vol. 79, No 10, pp. 1801–1829, 2007

doi:10.1351/pac200779101801

This document defines terms related to the structure and processing of inorganic, polymeric, and inorganic-organic hybrid materials from precursors, through gels to solid products. It is divided into four sections—precursors, gels, solids, and processes—and the terms have been restricted to those most commonly encountered. For the sake of completeness

and where they are already satisfactorily defined for the scope of this document, terms from other IUPAC publications have been used. Otherwise, the terms and their definitions have been assembled in consultation with experts in the relevant fields. The definitions are intended to assist the reader who is unfamiliar with sol-gel processing, ceramization, and related technologies and materials, and to serve as a guide to the use of standard terminology by those researching in these areas.

 www.iupac.org/publications/pac/79/10/1801

Alcohols with Water

IUPAC-NIST Solubility Data Series. 82

Journal of Physical and Chemical Reference Data, 2007

In this five-part series published in 2007 in the *Journal of Physical and Chemical Reference Data* (volume 36), the mutual solubility and related liquid-liquid equilibria of C₄, C₅, C₆, C₇, and C₈–C₁₇ alcohols with water are exhaustively and critically reviewed. Reports of experimental determination of solubility are compiled for the chemically distinct binary systems that appeared in the primary literature prior to end of 2004. For most of the systems, sufficient data are available to allow critical evaluation. All data are expressed as mass percent and mole fraction as well as the originally reported units. In addition to the standard evaluation criteria used throughout the Solubility Data Series, a number of new methods based on the evaluation of all experimental data were used.

 www.iupac.org/publications/sds/2007/82_abstract.html

New IUPAC projects have recently been initiated that will evaluate solubility data useful to industrial processes. The projects will cover nitriles C+3: binary and multicomponent systems; mutual solubility of esters with water; solubility of higher alkynes in liquids; and solubility in systems with lithium and/or sodium nitrates.

 www.iupac.org/divisions/V/502