

## Making an imPACT

### Name and Symbol of the Element with Atomic Number 112 (IUPAC Recommendations 2010)

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A joint IUPAC/IUPAP Working Party has confirmed the discovery of the element with atomic number 112. In accord with IUPAC procedures, the discoverers proposed a name, copernicium, and symbol, Cn, for the element. The IUPAC Inorganic Chemistry Division Committee recommended this proposal for acceptance, and it has now been approved by the IUPAC Bureau as delegated to act by the IUPAC Council meeting on 12 August 2007 (see March/April 2010 *CI*, p. 16).

 <http://dx.doi.org/10.1351/PAC-REC-09-08-20>

### Structure and Property of Polymer/Clay Nanocomposite Materials

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The aim of this project was to evaluate the structure and properties of the commercialized polymer/clay nanocomposites. The project was carried out by participating members of IUPAC's Polymer Division Subcommittee on Structure and Properties of Commercial Polymers. Two commercialized Nylon/clay samples were received and distributed among the participating laboratories of the subcommittee. The basic structure, such as molecular weight, degree of dispersion of the clay, gallery spacing of the clay, and more were characterized, and the structure was correlated with the properties such as thermal stability, tensile strength, tensile modulus, and elongation at break. The aim was to provide information on these newly developed and commercialized nanocomposite materials to the potential users of these materials. Although the nanocomposite had some exfoliated clay platelets dispersed in the Nylon matrix, it also contained intercalated clay structures. The composition

of these intercalated and exfoliated structures had significant effect on enhancing the modulus and strength properties of the nanocomposite. The basic structure and properties were reported in a publication titled "Structure and Properties of Polyamide-6 & 6/66 /Clay Nanocomposites" authored by S. Venkataramani.

 <http://dx.doi.org/10.1080/10601320802515399>

### Rare Earth Metal Chlorides in Water and Aqueous Systems

#### IUPAC-NIST Solubility Data Series 87

This series presents solubility data for rare earth metal chlorides in water and in ternary and quaternary aqueous systems. The material is divided into three parts: scandium group (Sc, Y, La), light lanthanide (Ce–Eu), and heavy lanthanide (Gd–Lu) chlorides.

- Part 1. Scandium Group (Sc, Y, La): *J. Phys. Chem. Ref. Data* 37, 1765 (2008)  
Part 2. Light Lanthanides (Ce–Eu): *J. Phys. Chem. Ref. Data* 38, 441 (2009)  
Part 3. Heavy Lanthanides (Gd–Lu): *J. Phys. Chem. Ref. Data* 38, 925 (2009)

Compilations of all available experimental data are introduced for each rare earth metal chloride with a corresponding critical evaluation. Every such evaluation contains a tabulated collection of all solubility results in water, a scheme of the water-rich part of the equilibrium (Y, La, Ln)Cl<sub>3</sub>–H<sub>2</sub>O phase diagram, solubility equation(s), a selection of suggested solubility data, and a discussion of the multicomponent systems. Because the ternary and quaternary systems were almost never studied more than once, no critical evaluations or systematic comparisons of such data were possible. Only simple chlorides (no complexes) are treated as the input substances in this work. The literature (including a thorough coverage of papers in Chinese and Russian) has been covered through the middle of 2007.

 [www.iupac.org/publications/sds/2009/87\\_abstract.html](http://www.iupac.org/publications/sds/2009/87_abstract.html)

**Note:** SDS Volume 88: "Esters with Water—Revised and Updated," is planned as a four-part series; the first part was recently published <[www.iupac.org/web/ins/2007-046-1-500](http://www.iupac.org/web/ins/2007-046-1-500)>; see project page for reference.