

**CPC****COOPERATIVE PATENT CLASSIFICATION****C01P****INDEXING SCHEME RELATING TO STRUCTURAL AND PHYSICAL ASPECTS OF SOLID INORGANIC COMPOUNDS****NOTE**

This subclass constitutes an internal scheme for indexing only.

The indexing scheme is used to identify structural and physical aspects of solid inorganic compounds, already classified in class [C01](#) or subclass [C09C](#).

**C01P 2002/00****Crystal-structural characteristics****C01P 2002/01**

- . depicted by a TEM-image

**C01P 2002/02**

- . Amorphous compounds

**C01P 2002/04**

- . Compounds with a limited amount of crystallinity, e.g. as indicated by a crystallinity index

**C01P 2002/08**

- . Intercalated structures, i.e. with atoms or molecules intercalated in their structure

**C01P 2002/10**

- . One-dimensional structures

**C01P 2002/20**

- . Two-dimensional structures

**C01P 2002/22**

- .. layered hydroxide-type, e.g. of the hydrotalcite-type

**C01P 2002/30**

- . Three-dimensional structures

**C01P 2002/32**

- .. spinel-type (AB<sub>2</sub>O<sub>4</sub>)

**C01P 2002/34**

- .. perovskite-type (ABO<sub>3</sub>)

**C01P 2002/36**

- .. pyrochlore-type (A<sub>2</sub>B<sub>2</sub>O<sub>7</sub>)

**C01P 2002/50**

- . Solid solutions

**C01P 2002/52**

- .. containing elements as dopants

**C01P 2002/54**

- ... one element only

**C01P 2002/60**

- . Compounds characterised by their crystallite size

**C01P 2002/70**

- . defined by measured X-ray, neutron or electron diffraction data

**C01P 2002/72**

- .. by d-values or two theta-values, e.g. as X-ray diagram

**C01P 2002/74**

- .. by peak-intensities or a ratio thereof only

**C01P 2002/76**

- .. by a space-group or by other symmetry indications

**C01P 2002/77**

- .. by unit-cell parameters, atom positions or structure diagrams

**C01P 2002/78**

- .. by stacking-plane distances or stacking sequences

**C01P 2002/80**

- . defined by measured data other than those specified in group [C01P 2002/70](#)

- C01P 2002/82 . . by IR- or Raman-data
- C01P 2002/84 . . by UV- or VIS- data
- C01P 2002/85 . . by XPS, EDX or EDAX data
- C01P 2002/86 . . by NMR- or ESR-data
- C01P 2002/87 . . by chromatography data, e.g. HPLC, gas chromatography
- C01P 2002/88 . . by thermal analysis data, e.g. TGA, DTA, DSC
- C01P 2002/89 . . by mass-spectroscopy

C01P 2002/90 . Other crystal-structural characteristics not specified above

## **C01P 2004/00 Particle morphology**

- C01P 2004/01 . depicted by an image
- C01P 2004/02 . . obtained by optical microscopy
- C01P 2004/03 . . obtained by SEM
- C01P 2004/04 . . obtained by TEM, STEM, STM or AFM
  
- C01P 2004/10 . extending in one dimension, e.g. needle-like
- C01P 2004/11 . . with a prismatic shape
- C01P 2004/12 . . with a cylindrical shape
- C01P 2004/13 . . Nanotubes
- C01P 2004/133 . . . Multiwall nanotubes
- C01P 2004/136 . . . Nanoscrolls, i.e. tubes having a spiral section
- C01P 2004/16 . . Nanowires or nanorods, i.e. solid nano-fibres with two nearly equal dimensions between 1-100 nanometer
- C01P 2004/17 . . Nanostrips, nanoribbons or nanobelts, i.e. solid nano-fibres with two significantly differing dimensions between 1-100 nanometer
  
- C01P 2004/20 . extending in two dimensions, e.g. plate-like
- C01P 2004/22 . . with a polygonal circumferential shape
- C01P 2004/24 . . Nanoplates, i.e. plate-like particles with a thickness from 1-100 nanometer
  
- C01P 2004/30 . extending in three dimensions
- C01P 2004/32 . . Spheres
- C01P 2004/34 . . . hollow
- C01P 2004/36 . . . fragmented
- C01P 2004/38 . . cube-like
- C01P 2004/39 . . parallelepiped-like
- C01P 2004/40 . . prism-like
- C01P 2004/41 . . octahedron-like
- C01P 2004/42 . . (bi)pyramid-like
- C01P 2004/45 . . Aggregated particles or particles with an intergrown morphology
  
- C01P 2004/50 . Agglomerated particles
  
- C01P 2004/51 . Particles with a specific particle size distribution

- C01P 2004/52 . . highly monodisperse size distribution
- C01P 2004/53 . . bimodal size distribution
- C01P 2004/54 . Particles characterised by their aspect ratio, i.e. the ratio of sizes in the longest to the shortest dimension
- C01P 2004/60 . Particles characterised by their size
- C01P 2004/61 . . Micrometer sized, i.e. from 1-100 micrometer
- C01P 2004/62 . . Submicrometer sized, i.e. from 0.1-1 micrometer
- C01P 2004/64 . . Nanometer sized, i.e. from 1-100 nanometer
- C01P 2004/80 . Particles consisting of a mixture of two or more inorganic phases
- C01P 2004/82 . . two phases having the same anion, e.g. both oxidic phases
- C01P 2004/84 . . . one phase coated with the other
- C01P 2004/86 . . . . Thin layer coatings, i.e. the coating thickness being less than 0.1 time the particle radius
- C01P 2004/88 . . . . Thick layer coatings
- C01P 2004/90 . Other morphology not specified above

## **C01P 2006/00 Physical properties of inorganic compounds**

### **NOTE**

Compounds having molecular sieve properties are classified in [C01B 37/00, 39/00](#).

The following codes are only to be used for physical values deviating significantly from the average usual values.

- C01P 2006/10 . Solid density
- C01P 2006/11 . Powder tap density
- C01P 2006/12 . Surface area
- C01P 2006/13 . . thermal stability thereof at high temperatures
- C01P 2006/14 . Pore volume
- C01P 2006/16 . Pore diameter
- C01P 2006/17 . . Pore diameter distribution
- C01P 2006/19 . Oil-absorption capacity, e.g. DBP values
- C01P 2006/20 . Powder free flowing behaviour
- C01P 2006/21 . Attrition-index or crushing strength of granulates
- C01P 2006/22 . Rheological behaviour as dispersion, e.g. viscosity, sedimentation stability
- C01P 2006/32 . Thermal properties

|              |     |   |
|--------------|-----|---|
| C01P 2006/33 | ..  | Phase transition temperatures                             |
| C01P 2006/34 | ... | Melting temperatures                                      |
| C01P 2006/35 | ... | Boiling temperatures                                      |
| C01P 2006/36 | ... | Solid to solid transition temperatures                    |
| C01P 2006/37 | ..  | Stability against thermal decomposition                   |
| C01P 2006/40 | .   | Electric properties                                       |
| C01P 2006/42 | .   | Magnetic properties                                       |
| C01P 2006/44 | .   | Alpha, beta or gamma radiation related properties         |
| C01P 2006/60 | .   | Optical properties, e.g. expressed in CIELAB-values       |
| C01P 2006/62 | ..  | L* ( lightness axis )                                     |
| C01P 2006/63 | ..  | a* ( red-green axis )                                     |
| C01P 2006/64 | ..  | b* ( yellow-blue axis )                                   |
| C01P 2006/65 | ..  | Chroma (C*)   |
| C01P 2006/66 | ..  | Hue (H*)  |
| C01P 2006/80 | .   | Compositional purity                                      |
| C01P 2006/82 | ..  | water content   |
| C01P 2006/88 | .   | Isotope composition differing from the natural occurrence |
| C01P 2006/90 | .   | Other properties not specified above                      |