SECTION C — CHEMISTRY; METALLURGY

C01 INORGANIC CHEMISTRY

Note(s) [3, 2006.01]

1. In subclasses C01B-C01G, the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, a compound is classified in the last appropriate place, e.g. potassium permanganate is classified only as a permanganate compound, in subclass C01G.
2. Biocidal, pest repellant, pest attractant or plant growth regulatory activity of compounds or preparations is further classified in subclass A01P.

C01B NON-METALLIC ELEMENTS; COMPOUNDS THEREOF (fermentation or enzyme-using processes for the preparation of elements or inorganic compounds except carbon dioxide C12P 3/00; production of non-metallic elements or inorganic compounds by electrolysis or electrophoresis C25B)

Note(s) [3, 6, 7, 2006.01]

1. In this subclass, tradenames that are often found in scientific and patent literature have been used in order to define precisely the scope of the groups.
2. Attention is drawn to the definitions of groups of chemical elements following the title of section C.
3. Attention is drawn to Note (1) after class C01, which defines the last place priority rule applied in this class, i.e. in the range of subclasses C01B-C01G and within these subclasses.
4. Therapeutic activity of compounds is further classified in subclass A61P.

Subclass index

Hydrogen; Hydrides; Water; Synthesis gas from hydrocarbons

3/00 Hydrogen; Gaseous mixtures containing hydrogen; Separation of hydrogen from mixtures containing it; Purification of hydrogen (production of water-gas or synthesis gas from solid carbonaceous material C10J) **[3, 2006.01]**

3/02 • Production of hydrogen or of gaseous mixtures containing hydrogen **[3, 2006.01]**

3/04 • • by decomposition of inorganic compounds, e.g. ammonia **[3, 2006.01]**

3/06 • • by reaction of inorganic compounds containing electro-positively bound hydrogen, e.g. water, acids, bases, ammonia, with inorganic reducing agents (by electrolysis of water C25B 1/04) **[3, 2006.01]**

3/08 • • • with metals **[3, 2006.01]**

3/10 • • • • by reaction of water vapour with metals **[3, 2006.01]**

3/12 • • • by reaction of water vapour with carbon monoxide **[3, 2006.01]**

3/14 • • • • Handling of heat and steam **[3, 2006.01]**

3/16 • • • • using catalysts **[3, 2006.01]**

3/18 • • • • using moving solid particles **[3, 2006.01]**

3/20 • • • by reaction of metal hydroxides with carbon monoxide **[3, 2006.01]**

3/22 • • by decomposition of gaseous or liquid organic compounds **[3, 2006.01]**

3/24 • • • of hydrocarbons **[3, 2006.01]**

3/26 • • • • using catalysts **[3, 2006.01]**

3/28 • • • • using moving solid particles **[3, 2006.01]**

3/30 • • • • • using the fluidised bed technique **[3, 2006.01]**
3/32 • • by reaction of gaseous or liquid organic compounds with gasifying agents, e.g. water, carbon dioxide, air **[3, 2006.01]**
3/34 • • • by reaction of hydrocarbons with gasifying agents **[3, 2006.01]**
3/36 • • • • using oxygen or mixtures containing oxygen as gasifying agents **[3, 2006.01]**
3/38 • • • • using catalysts **[3, 2006.01]**
3/40 • • • • • characterised by the catalyst **[3, 2006.01]**
3/42 • • • • • using moving solid particles **[3, 2006.01]**
3/44 • • • • • • using the fluidised bed technique **[3, 2006.01]**
3/46 • • • • using discontinuously preheated non-moving solid materials, e.g. blast and run **[3, 2006.01]**
3/48 • • • • followed by reaction of water vapour with carbon monoxide **[3, 2006.01]**
3/50 • Separation of hydrogen or hydrogen containing gases from gaseous mixtures, e.g. purification (C01B 3/14 takes precedence) **[3, 2006.01]**
3/52 • • by contacting with liquids; Regeneration of used liquids **[3, 2006.01]**
3/54 • • • including a catalytic reaction **[3, 2006.01]**
3/56 • • by contacting with solids; Regeneration of used solids **[3, 2006.01]**
3/58 • • • including a catalytic reaction **[3, 2006.01]**

4/00 Hydrogen isotopes; Inorganic compounds thereof prepared by isotope exchange, e.g. $NH_3 + D_2 \rightarrow NH_2D + HD$ [1, 2, 2006.01]

5/00 Water [1, 2006.01]
5/02 • Heavy water; Preparation by chemical reaction of hydrogen isotopes or their compounds, e.g. $4ND_3+7O_2 \rightarrow 4NO_2+6D_2O$, $2D_2+O_2 \rightarrow 2D_2O$ **[1, 2006.01]**

6/00 Hydrides of metals; Monoborane or diborane; Addition complexes thereof [1, 2, 2006.01]
6/02 • Hydrides of transition elements; Addition complexes thereof **[1, 2006.01]**
6/04 • Hydrides of alkali metals, alkaline earth metals, beryllium or magnesium; Addition complexes thereof **[1, 2006.01]**
6/06 • Hydrides of aluminium, gallium, indium, thallium, germanium, tin, lead, arsenic, antimony, bismuth or polonium; Monoborane; Diborane; Addition complexes thereof **[1, 2006.01]**
6/10 • • Monoborane; Diborane; Addition complexes thereof **[1, 2, 2006.01]**
6/11 • • • Preparation from boron or inorganic compounds containing boron and oxygen **[2, 2006.01]**
6/13 • • • Addition complexes of monoborane or diborane, e.g. with phosphine, arsine or hydrazine **[2, 2006.01]**
6/15 • • • • Metal borohydrides; Addition complexes thereof **[2, 2006.01]**
6/17 • • • • • Preparation from boron or inorganic compounds containing boron and oxygen **[2, 2006.01]**
6/19 • • • • • Preparation from other compounds of boron **[2, 2006.01]**
6/21 • • • • • • Preparation of borohydrides of alkali metals, alkaline earth metals, magnesium or beryllium; Addition complexes thereof, e.g. $LiBH_4.2N_2H_4$, NaB_2H_7 **[2, 2006.01]**
6/23 • • • • • • Preparation of borohydrides of other metals, e.g. aluminium borohydride; Addition complexes thereof, e.g. $Li[Al(BH_4)_3H]$ **[2, 2006.01]**
6/24 • Hydrides containing at least two metals, e.g. $Li(AlH_4)$; Addition complexes thereof (C01B 6/13-C01B 6/23 take precedence) **[1, 2, 2006.01]**
6/26 • • Preparation from the metal with the highest valency or from its oxides or salts of its oxyacids **[1, 2006.01]**
6/34 • Purification; Stabilisation **[1, 2006.01]**

Halogens; Compounds thereof

7/00 Halogens; Halogen acids [1, 2006.01]
7/01 • Chlorine; Hydrogen chloride **[2, 2006.01]**
7/03 • • Preparation from chlorides **[2, 3, 2006.01]**
7/04 • • • Preparation of chlorine from hydrogen chloride **[1, 3, 2006.01]**
7/05 • • • Preparation from ammonium chloride **[2, 3, 2006.01]**
7/07 • • Purification **[2, 3, 2006.01]**
7/075 • • • of liquid chlorine **[2, 3, 2006.01]**
7/09 • Bromine; Hydrogen bromide **[2, 2006.01]**
7/13 • Iodine; Hydrogen iodide **[2, 2006.01]**
7/14 • • Iodine **[1, 2, 2006.01]**
7/16 • • • Preparation from seaweed **[1, 2, 2006.01]**
7/19 • Fluorine; Hydrogen fluoride **[2, 2006.01]**
7/20 • • Fluorine **[1, 2, 2006.01]**
7/24 • Inter-halogen compounds **[1, 2006.01]**

9/00 General methods of preparing halides (particular individual halides, see the relevant groups in subclasses C01B-C01G according to the element combined with the halogen; electrolytic production of inorganic compounds C25B) **[1, 2006.01]**
9/02 • Chlorides **[1, 2006.01]**
9/04 • Bromides **[1, 2006.01]**
9/06 • Iodides **[1, 2006.01]**
9/08 • Fluorides **[1, 2006.01]**

11/00 Oxides or oxyacids of halogens; Salts thereof [1, 2006.01]
11/02 • Oxides of chlorine **[1, 2006.01]**
11/04 • Hypochlorous acid **[1, 2006.01]**
11/06 • • Hypochlorites, e.g. chlorinated lime **[1, 2006.01]**
11/08 • Chlorous acid **[1, 2006.01]**
11/10 • • Chlorites **[1, 2006.01]**
11/12 • Chloric acid **[1, 2006.01]**
11/14 • • Chlorates **[1, 2006.01]**
11/16 • Perchloric acid **[1, 2006.01]**
11/18 • • Perchlorates **[1, 2006.01]**
11/20 • Oxygen compounds of bromine **[1, 2006.01]**
11/22 • Oxygen compounds of iodine **[1, 2006.01]**
11/24 • Oxygen compounds of fluorine **[1, 2006.01]**

Oxygen; Oxides or hydroxides in general; Per-compounds

13/00 Oxygen; Ozone; Oxides or hydroxides in general [1, 2006.01]

13/02 • Preparation of oxygen (by liquefying F25J) **[1, 2006.01]**
13/08 • • from air with the aid of metal oxides, e.g. barium oxide, manganese oxide **[1, 2006.01]**
13/10 • Preparation of ozone **[1, 2006.01]**
13/11 • • by electric discharge **[2, 2006.01]**
13/14 • Methods for preparing oxides or hydroxides in general (particular individual oxides or hydroxides, see the relevant groups of subclasses C01B-C01G or C25B, according to the element combined with the oxygen or hydroxy group) **[1, 2006.01]**
13/16 • • Purification **[3, 2006.01]**
13/18 • • by thermal decomposition of compounds, e.g. of salts or hydroxides **[3, 2006.01]**
13/20 • • by oxidation of elements in the gaseous state; by oxidation or hydrolysis of compounds in the gaseous state **[3, 2006.01]**
13/22 • • • of halides or oxyhalides **[3, 2006.01]**
13/24 • • • • in the presence of hot combustion gases **[3, 2006.01]**
13/26 • • • • in the presence of a fluidised bed **[3, 2006.01]**
13/28 • • • • using a plasma or an electric discharge **[3, 2006.01]**
13/30 • • • • Removal and cooling of the oxide containing suspension **[3, 2006.01]**
13/32 • • by oxidation or hydrolysis of elements or compounds in the liquid or solid state **[3, 2006.01]**
13/34 • • by oxidation or hydrolysis of sprayed or atomised solutions **[3, 2006.01]**
13/36 • • by precipitation reactions in solutions **[3, 2006.01]**

15/00 Peroxides; Peroxyhydrates; Peroxyacids or salts thereof; Superoxides; Ozonides [1, 2006.01]
15/01 • Hydrogen peroxide **[3, 2006.01]**
15/013 • • Separation; Purification; Concentration **[3, 2006.01]**
15/017 • • • Anhydrous hydrogen peroxide; Anhydrous solutions or gaseous mixtures containing hydrogen peroxide **[3, 2006.01]**
15/022 • • Preparation from organic compounds **[2, 2006.01]**
15/023 • • • by the alkyl-anthraquinone process **[3, 2006.01]**
15/024 • • • from hydrocarbons **[3, 2006.01]**
15/026 • • • from alcohols **[3, 2006.01]**
15/027 • • Preparation from water **[3, 2006.01]**
15/029 • • Preparation from hydrogen and oxygen **[3, 2006.01]**
15/03 • • Preparation from inorganic peroxy-compounds, e.g. from peroxysulfates **[3, 2006.01]**
15/032 • • • from metal peroxides **[3, 2006.01]**
15/037 • • Stabilisation by additives **[3, 2006.01]**
15/04 • Metal peroxides or peroxyhydrates thereof; Superoxides; Ozonides **[1, 3, 2006.01]**
15/043 • • of alkali metals, alkaline earth metals or of magnesium **[2, 3, 2006.01]**
15/047 • • of heavy metals **[2, 3, 2006.01]**
15/055 • Peroxyhydrates (C01B 15/04 takes precedence); Peroxyacids or salts thereof **[3, 2006.01]**
15/06 • • containing sulfur **[1, 3, 2006.01]**
15/08 • • • Peroxysulfates **[1, 3, 2006.01]**
15/10 • • containing carbon **[1, 3, 2006.01]**
15/12 • • containing boron **[1, 3, 2006.01]**
15/14 • • containing silicon **[1, 3, 2006.01]**
15/16 • • containing phosphorus **[1, 3, 2006.01]**

17/00 Sulfur; Compounds thereof [1, 2006.01]
17/02 • Preparation of sulfur; Purification **[1, 2006.01]**
17/027 • • Recovery of sulfur from material containing elemental sulfur, e.g. luxmasses; Purification **[3, 2006.01]**
17/033 • • • using a liquid extractant **[3, 2006.01]**
17/04 • • from gaseous sulfur compounds including gaseous sulfides **[1, 2006.01]**
17/05 • • • by wet processes **[3, 2006.01]**
17/06 • • from non-gaseous sulfides or materials containing such sulfides, e.g. ores **[1, 2006.01]**
17/10 • • Finely-divided sulfur, e.g. sublimed sulfur, flowers of sulfur **[1, 2006.01]**
17/12 • • Insoluble sulfur (mu-sulfur) **[1, 2006.01]**
17/16 • Hydrogen sulfides **[1, 2006.01]**
17/18 • • Hydrogen polysulfides **[1, 2006.01]**
17/20 • Methods for preparing sulfides or polysulfides, in general (ammonium sulfides or polysulfides C01C; sulfides or polysulfides of metals, other than alkali metals, magnesium, calcium, strontium, and barium, see the relevant groups of subclasses C01F or C01G, according to the metal) **[1, 2006.01]**
17/22 • Alkali metal sulfides or polysulfides **[1, 2006.01]**
17/24 • • Preparation by reduction **[1, 2006.01]**
17/26 • • • with carbon **[1, 2006.01]**
17/28 • • • with reducing gases **[1, 2006.01]**
17/30 • • Preparation from sodium or potassium amalgam with sulfur or sulfides **[1, 2006.01]**
17/32 • • Hydrosulfides of sodium or potassium **[1, 2006.01]**
17/34 • • Polysulfides of sodium or potassium **[1, 2006.01]**
17/36 • • Purification **[1, 2006.01]**
17/38 • • Dehydration **[1, 2006.01]**
17/40 • • Making shaped products, e.g. granules **[1, 2006.01]**
17/42 • Sulfides or polysulfides of magnesium, calcium, strontium, or barium **[1, 2006.01]**
17/43 • • from oxides or hydroxides with sulfur or hydrogen sulfide **[1, 2006.01]**
17/44 • • by reduction of sulfates **[1, 2006.01]**
17/45 • Compounds containing sulfur and halogen, with or without oxygen **[1, 2006.01]**
17/46 • Compounds containing sulfur, halogen, hydrogen, and oxygen **[1, 2006.01]**
17/48 • Sulfur dioxide; Sulfurous acid **[1, 2006.01]**
17/50 • • Preparation of sulfur dioxide **[1, 2006.01]**
17/52 • • • by roasting sulfides (preliminary treatment of ores or scrap C22B 1/00) **[1, 2006.01]**
17/54 • • • by burning elemental sulfur **[1, 2006.01]**
17/56 • • • Separation; Purification **[1, 2006.01]**
17/58 • • • Recovery of sulfur dioxide from acid tar or the like **[1, 2006.01]**
17/60 • • • Isolation of sulfur dioxide from gases **[1, 2006.01]**
17/62 • Methods of preparing sulfites in general (particular individual sulfites, see the relevant groups of subclasses C01B-C01G, according to the cation) **[1, 2006.01]**
17/64 • Thiosulfates; Dithionites; Polythionates **[1, 2006.01]**
17/66 • • Dithionites **[1, 2006.01]**
17/69 • Sulfur trioxide; Sulfuric acid **[3, 2006.01]**
17/70 • • Stabilisation of gamma-form sulfur trioxide **[1, 2006.01]**
17/74 • • Preparation **[1, 3, 2006.01]**
17/76 • • • by contact processes **[1, 2006.01]**

17/765 • • • • Multi-stage SO_3-conversion **[3, 2006.01]**
17/77 • • • • Fluidised-bed processes **[3, 2006.01]**
17/775 • • • • Liquid phase contacting processes or wet catalysis processes **[3, 2006.01]**
17/78 • • • • characterised by the catalyst used **[1, 2006.01]**
17/79 • • • • • containing vanadium **[3, 2006.01]**
17/80 • • • • Apparatus **[1, 2006.01]**
17/82 • • • of sulfuric acid using a nitrogen oxide process **[1, 2006.01]**
17/84 • • • • Chamber process **[1, 2006.01]**
17/86 • • • • Tower process **[1, 2006.01]**
17/88 • • Concentration of sulfuric acid **[1, 2006.01]**
17/90 • • Separation; Purification **[1, 2006.01]**
17/92 • • • Recovery from acid tar or the like **[1, 2006.01]**
17/94 • • • Recovery from nitration acids **[1, 2006.01]**
17/96 • Methods for the preparation of sulfates in general (particular individual sulfates, see the relevant groups of subclasses C01B-C01G, according to the cation) **[1, 2006.01]**
17/98 • Other compounds containing sulfur and oxygen (persulfuric acids C01B 15/06; persulfates C01B 15/08) **[1, 2006.01]**

19/00 Selenium; Tellurium; Compounds thereof [1, 2006.01]
19/02 • Elemental selenium or tellurium **[3, 2006.01]**
19/04 • Binary compounds **[3, 2006.01]**

21/00 Nitrogen; Compounds thereof [1, 2006.01]
21/02 • Preparation of nitrogen (by decomposition of ammonia C01B 3/04) **[1, 2006.01]**
21/04 • Purification or separation of nitrogen (by liquefying F25J) **[1, 2006.01]**
21/06 • Binary compounds of nitrogen with metals, with silicon, or with boron **[1, 2006.01]**
21/064 • • with boron **[3, 2006.01]**
21/068 • • with silicon **[3, 2006.01]**
21/072 • • with aluminium **[3, 2006.01]**
21/076 • • with titanium or zirconium **[3, 2006.01]**
21/08 • Hydrazoic acid; Azides; Halogen azides **[1, 2006.01]**
21/082 • Compounds containing nitrogen and non-metals (C01B 21/06, C01B 21/08 take precedence) **[3, 2006.01]**
21/083 • • containing one or more halogen atoms **[3, 2006.01]**
21/084 • • • containing also one or more oxygen atoms, e.g. nitrosyl halides **[3, 2006.01]**
21/086 • • containing one or more sulfur atoms **[3, 2006.01]**
21/087 • • containing one or more hydrogen atoms **[3, 2006.01]**
21/088 • • • containing also one or more halogen atoms **[3, 2006.01]**
21/09 • • • • Halogeno-amines, e.g. chloramine **[3, 2006.01]**
21/092 • • • containing also one or more metal atoms **[3, 2006.01]**
21/093 • • • containing also one or more sulfur atoms **[3, 2006.01]**
21/094 • • • • Nitrosyl containing acids **[3, 2006.01]**
21/096 • • • • Amidosulfonic acid; Salts thereof **[3, 2006.01]**
21/097 • • containing phosphorus atoms **[3, 2006.01]**
21/098 • • • Phosphonitrilic dihalides; Polymers thereof **[3, 2006.01]**
21/12 • • Carbamic acid; Salts thereof **[1, 2006.01]**
21/14 • • Hydroxylamine; Salts thereof **[1, 2006.01]**
21/16 • • Hydrazine; Salts thereof **[1, 2006.01]**
21/20 • Nitrogen oxides; Oxyacids of nitrogen; Salts thereof **[1, 2006.01]**
21/22 • • Nitrous oxide (N_2O) **[1, 2006.01]**
21/24 • • Nitric oxide (NO) **[1, 2006.01]**
21/26 • • • Preparation by catalytic oxidation of ammonia **[1, 2006.01]**
21/28 • • • • Apparatus **[1, 2006.01]**
21/30 • • • Preparation by oxidation of nitrogen **[1, 2006.01]**
21/32 • • • • Apparatus **[1, 2006.01]**
21/34 • • Nitrogen trioxide (N_2O_3) **[1, 2006.01]**
21/36 • • Nitrogen dioxide (NO_2, N_2O_4) (C01B 21/26, C01B 21/30 take precedence) **[1, 2006.01]**
21/38 • • Nitric acid **[1, 2006.01]**
21/40 • • • Preparation by absorption of oxides of nitrogen **[1, 2006.01]**
21/42 • • • Preparation from nitrates **[1, 2006.01]**
21/44 • • • Concentration **[1, 2006.01]**
21/46 • • • Purification; Separation **[1, 2006.01]**
21/48 • • Methods for the preparation of nitrates in general (particular individual nitrates, see the relevant groups of subclasses C01B-C01G, according to the cation) **[1, 2006.01]**
21/50 • • Nitrous acid; Salts thereof **[1, 2006.01]**

23/00 Noble gases; Compounds thereof (liquefying F25J) **[1, 2006.01]**

25/00 Phosphorus; Compounds thereof (C01B 21/00, C01B 23/00 take precedence; perphosphates C01B 15/16) **[1, 3, 2006.01]**
25/01 • Treating phosphate ores or other raw phosphate materials to obtain phosphorus or phosphorus compounds **[2, 2006.01]**
25/02 • Preparation of phosphorus **[1, 2006.01]**
25/023 • • of red phosphorus **[2, 2006.01]**
25/027 • • of yellow phosphorus **[2, 2006.01]**
25/04 • Purification of phosphorus **[1, 2006.01]**
25/043 • • of red phosphorus **[2, 2006.01]**
25/047 • • of yellow phosphorus **[2, 2006.01]**
25/06 • Hydrogen phosphides **[1, 2006.01]**
25/08 • Other phosphides **[1, 2006.01]**
25/10 • Halides or oxyhalides of phosphorus **[1, 2, 2006.01]**
25/12 • Oxides of phosphorus **[1, 2006.01]**
25/14 • Sulfur, selenium, or tellurium compounds of phosphorus **[1, 2006.01]**
25/16 • Oxyacids of phosphorus; Salts thereof (peroxyacids or salts thereof C01B 15/00) **[1, 2006.01]**
25/163 • • Phosphorous acid; Salts thereof **[2, 2006.01]**
25/165 • • Hypophosphorous acid; Salts thereof **[2, 2006.01]**
25/168 • • Pyrophosphorous acid; Salts thereof **[2, 2006.01]**
25/18 • • Phosphoric acid **[1, 2006.01]**
25/20 • • • Preparation from elemental phosphorus or phosphoric anhydride **[1, 2006.01]**
25/22 • • • Preparation by reacting phosphate containing material with an acid, e.g. wet process **[1, 2006.01]**
25/222 • • • • with sulfuric acid, a mixture of acids mainly consisting of sulfuric acid or a mixture of compounds forming it in situ, e.g. a mixture of sulfur dioxide, water and oxygen **[3, 2006.01]**
25/223 • • • • • only one form of calcium sulfate being formed **[3, 2006.01]**

25/225 • • • • • • Dihydrate process **[3, 2006.01]**
25/226 • • • • • • Hemihydrate process **[3, 2006.01]**
25/228 • • • • • one form of calcium sulfate being formed and then converted to another form **[3, 2006.01]**
25/229 • • • • • • Hemihydrate-dihydrate process **[3, 2006.01]**
25/231 • • • • • • Dihydrate-hemihydrate process **[3, 2006.01]**
25/232 • • • • • Preparation by reacting phosphate containing material with concentrated sulfuric acid and subsequently lixiviating the obtained mass, e.g. clincker process **[3, 2006.01]**
25/234 • • • Purification; Stabilisation; Concentration (purification concomitant with preparation C01B 25/22; preparation involving solvent-solvent extraction C01B 25/46) **[3, 2006.01]**
25/235 • • • • Clarification; Stabilisation to prevent post-precipitation of dissolved impurities **[3, 2006.01]**
25/237 • • • • Selective elimination of impurities **[3, 2006.01]**
25/238 • • • • • Cationic impurities **[3, 2006.01]**
25/24 • • Condensed phosphoric acids **[1, 2006.01]**
25/26 • • Phosphates (perphosphates C01B 15/16) **[1, 2006.01]**
25/28 • • • Ammonium phosphates **[1, 2006.01]**
25/30 • • • Alkali metal phosphates **[1, 2006.01]**
25/32 • • • Phosphates of magnesium, calcium, strontium, or barium **[1, 2006.01]**
25/34 • • • • Magnesium phosphates **[1, 2006.01]**
25/36 • • • Aluminium phosphates **[1, 2006.01]**
25/37 • • • Phosphates of heavy metals **[2, 2006.01]**
25/38 • • • Condensed phosphates **[1, 2006.01]**
25/39 • • • • of alkali metals **[3, 2006.01]**
25/40 • • • • Polyphosphates **[2, 2006.01]**
25/41 • • • • • of alkali metals **[3, 2006.01]**
25/42 • • • • Pyrophosphates **[2, 2006.01]**
25/44 • • • • Metaphosphates **[2, 2006.01]**
25/445 • • • • • of alkali metals **[3, 2006.01]**
25/45 • • • containing plural metal, or metal and ammonium **[3, 2006.01]**
25/455 • • • containing halogen **[3, 2006.01]**
25/46 • • Preparation involving solvent-solvent extraction **[2, 2006.01]**

32/00 **Carbon; Compounds thereof** (C01B 21/00, C01B 23/00 take precedence; percarbonates C01B 15/10; carbon black C09C 1/48) **[2017.01]**
32/05 • Preparation or purification of carbon not covered by groups C01B 32/15, C01B 32/20, C01B 32/25, C01B 32/30 **[2017.01]**
32/10 • Carbon fluorides, e.g. $[CF]_n$ or $[C_2F]_n$ (graphite intercalation thereof C01B 32/22) **[2017.01]**
32/15 • Nanosized carbon materials **[2017.01]**
32/152 • • Fullerenes **[2017.01]**
32/154 • • • Preparation **[2017.01]**
32/156 • • • After-treatment **[2017.01]**
32/158 • • Carbon nanotubes **[2017.01]**
32/159 • • • single-walled **[2017.01]**
32/16 • • • Preparation **[2017.01]**
32/162 • • • • characterised by catalysts **[2017.01]**
32/164 • • • • involving continuous processes **[2017.01]**
32/166 • • • • in liquid phase **[2017.01]**
32/168 • • • After-treatment **[2017.01]**
32/17 • • • • Purification **[2017.01]**
32/172 • • • • Sorting **[2017.01]**
32/174 • • • • Derivatisation; Solubilisation; Dispersion in solvents **[2017.01]**
32/176 • • • • Cutting **[2017.01]**
32/178 • • • • Opening; Filling **[2017.01]**
32/18 • • Nanoonions; Nanoscrolls; Nanohorns; Nanocones; Nanowalls **[2017.01]**
32/182 • • Graphene **[2017.01]**
32/184 • • • Preparation **[2017.01]**
32/186 • • • • by chemical vapour deposition [CVD] **[2017.01]**
32/188 • • • • by epitaxial growth **[2017.01]**
32/19 • • • • by exfoliation **[2017.01]**
32/192 • • • • • starting from graphitic oxides **[2017.01]**
32/194 • • • After-treatment **[2017.01]**
32/196 • • • • Purification **[2017.01]**
32/198 • • • Graphene oxide **[2017.01]**
32/20 • Graphite **[2017.01]**
32/205 • • Preparation **[2017.01]**
32/21 • • After-treatment **[2017.01]**
32/215 • • • Purification; Recovery or purification of graphite formed in iron making, e.g. kish graphite **[2017.01]**
32/22 • • • Intercalation **[2017.01]**
32/225 • • • • Expansion; Exfoliation **[2017.01]**
32/23 • • • Oxidation **[2017.01]**
32/25 • Diamond **[2017.01]**
32/26 • • Preparation (by using ultra-high pressure B01J 3/06; by crystal growth C30B 29/04) **[2017.01]**
32/28 • • After-treatment, e.g. purification, irradiation, separation or recovery **[2017.01]**
32/30 • Active carbon **[2017.01]**
32/306 • • with molecular sieve properties **[2017.01]**
32/312 • • Preparation **[2017.01]**
32/318 • • • characterised by the starting materials **[2017.01]**
32/324 • • • • from waste materials, e.g. tyres or spent sulfite pulp liquor **[2017.01]**
32/33 • • • • from distillation residues of coal or petroleum; from petroleum acid sludge **[2017.01]**
32/336 • • • characterised by gaseous activating agents **[2017.01]**
32/342 • • • characterised by non-gaseous activating agents **[2017.01]**
32/348 • • • • Metallic compounds **[2017.01]**
32/354 • • After-treatment **[2017.01]**
32/36 • • • Reactivation or regeneration **[2017.01]**
32/366 • • • • by physical processes, e.g. by irradiation, by using electric current passing through carbonaceous feedstock or by using recyclable inert heating bodies **[2017.01]**
32/372 • • • Coating; Grafting; Microencapsulation **[2017.01]**
32/378 • • • Purification **[2017.01]**
32/384 • • • Granulation **[2017.01]**

Note(s) [2017.01]

In this group, the term “granulation” also covers methods of preparation of active carbon using carbonaceous precursors per se and binders, e.g. pitch.

32/39 • • Apparatus for the preparation thereof **[2017.01]**
32/40 • Carbon monoxide **[2017.01]**

32/50 • Carbon dioxide **[2017.01]**
32/55 • • Solidifying **[2017.01]**
32/60 • Preparation of carbonates or bicarbonates in general (of percarbonates C01B 15/10; of specific carbonates or bicarbonates according to the cation C01B-C01G) **[2017.01]**
32/70 • Compounds containing carbon and sulfur, e.g. thiophosgene **[2017.01]**
32/72 • • Carbon disulfide **[2017.01]**
32/75 • • • Preparation by reacting sulfur or sulfur compounds with hydrocarbons **[2017.01]**
32/77 • • Carbon oxysulfide **[2017.01]**
32/80 • Phosgene **[2017.01]**
32/90 • Carbides **[2017.01]**
32/907 • • Oxycarbides; Sulfocarbides; Mixture of carbides **[2017.01]**
32/914 • • Carbides of single elements **[2017.01]**
32/921 • • • Titanium carbide **[2017.01]**
32/928 • • • Carbides of actinides **[2017.01]**
32/935 • • • Carbides of alkali metals, strontium, barium or magnesium **[2017.01]**
32/942 • • • Calcium carbide **[2017.01]**
32/949 • • • Tungsten or molybdenum carbides **[2017.01]**
32/956 • • • Silicon carbide **[2017.01]**
32/963 • • • • Preparation from compounds containing silicon **[2017.01]**
32/97 • • • • • Preparation from SiO or SiO_2 **[2017.01]**
32/977 • • • • • Preparation from organic compounds containing silicon **[2017.01]**
32/984 • • • • • Preparation from elemental silicon **[2017.01]**
32/991 • • • Boron carbide **[2017.01]**

33/00 Silicon; Compounds thereof (C01B 21/00, C01B 23/00 take precedence; persilicates C01B 15/14; carbides C01B 32/956) **[1, 3, 2006.01]**

33/02 • Silicon (forming single crystals or homogeneous polycrystalline material with defined structure C30B) **[1, 5, 2006.01]**
33/021 • • Preparation (chemical coating from the vapour phase C23C 16/00) **[5, 2006.01]**
33/023 • • • by reduction of silica or silica-containing material **[5, 2006.01]**
33/025 • • • • with carbon or a solid carbonaceous material, i.e. carbo-thermal process **[5, 2006.01]**
33/027 • • • by decomposition or reduction of gaseous or vaporised silicon compounds other than silica or silica-containing material **[5, 2006.01]**
33/029 • • • • by decomposition of monosilane **[5, 2006.01]**
33/03 • • • • by decomposition of silicon halides or halosilanes or reduction thereof with hydrogen as the only reducing agent **[5, 2006.01]**
33/031 • • • • • by decomposition of silicon tetraiodide **[5, 2006.01]**
33/033 • • • • by reduction of silicon halides or halosilanes with a metal or a metallic alloy as the only reducing agents **[5, 2006.01]**
33/035 • • • • by decomposition or reduction of gaseous or vaporised silicon compounds in the presence of heated filaments of silicon, carbon or a refractory metal, e.g. tantalum or tungsten, or in the presence of heated silicon rods on which the formed silicon is deposited, a silicon rod being obtained, e.g. Siemens process **[5, 2006.01]**
33/037 • • Purification (by zone-melting C30B 13/00) **[5, 2006.01]**
33/039 • • • by conversion of the silicon into a compound, optional purification of the compound, and reconversion into silicon **[5, 2006.01]**
33/04 • Hydrides of silicon **[1, 2006.01]**
33/06 • Metal silicides **[1, 2006.01]**
33/08 • Compounds containing halogen **[1, 2006.01]**
33/10 • • Compounds containing silicon, fluorine, and other elements **[1, 2006.01]**
33/107 • • Halogenated silanes **[3, 2006.01]**
33/113 • Silicon oxides; Hydrates thereof **[3, 2006.01]**
33/12 • • Silica; Hydrates thereof, e.g. lepidoic silicic acid **[1, 3, 2006.01]**
33/14 • • • Colloidal silica, e.g. dispersions, gels, sols **[1, 3, 2006.01]**
33/141 • • • • Preparation of hydrosols or aqueous dispersions **[3, 2006.01]**
33/142 • • • • • by acidic treatment of silicates **[3, 2006.01]**
33/143 • • • • • • of aqueous solutions of silicates **[3, 2006.01]**
33/145 • • • • Preparation of hydroorganosols, organosols or dispersions in an organic medium **[3, 2006.01]**
33/146 • • • • After-treatment of sols (preparation of hydroorganosols, organosols or dispersions in an organic medium from hydrosols C01B 33/145) **[3, 2006.01]**
33/148 • • • • • Concentration; Drying; Dehydration; Stabilisation; Purification **[3, 2006.01]**
33/149 • • • • • Coating **[3, 2006.01]**
33/151 • • • • • by progressively adding a sol to a different sol, i.e. "build up" of particles using a "heel" **[3, 2006.01]**
33/152 • • • • Preparation of hydrogels **[3, 2006.01]**
33/154 • • • • • by acidic treatment of aqueous silicate solutions **[3, 2006.01]**
33/155 • • • • Preparation of hydroorganogels or organogels **[3, 2006.01]**
33/157 • • • • After-treatment of gels **[3, 2006.01]**
33/158 • • • • • Purification; Drying; Dehydrating **[3, 2006.01]**
33/159 • • • • • Coating or hydrophobisation **[3, 2006.01]**
33/16 • • • Preparation of silica xerogels **[1, 3, 2006.01]**
33/18 • • • Preparation of finely divided silica neither in sol nor in gel form; After-treatment thereof (treatment to enhance the pigmenting or filling properties C09C) **[1, 3, 2006.01]**
33/187 • • • • by acidic treatment of silicates **[3, 2006.01]**
33/193 • • • • • of aqueous solutions of silicates **[3, 2006.01]**
33/20 • Silicates (persilicates C01B 15/14) **[1, 2006.01]**
33/22 • • Magnesium silicates **[1, 2006.01]**
33/24 • • Alkaline earth metal silicates **[1, 2006.01]**
33/26 • • Aluminium-containing silicates **[1, 5, 2006.01]**
33/32 • • Alkali metal silicates (C01B 33/26 takes precedence) **[1, 3, 2006.01]**

33/36 • • having base-exchange properties but not having molecular sieve properties **[6, 2006.01]**

33/38 • • • Layered base-exchange silicates, e.g. clays, micas or alkali metal silicates of kenyaite or magadiite type **[6, 2006.01]**

33/40 • • • • Clays **[6, 2006.01]**

33/42 • • • • Micas **[6, 2006.01]**

33/44 • • • • Products obtained from layered base-exchange silicates by ion-exchange with organic compounds such as ammonium, phosphonium or sulfonium compounds or by intercalation of organic compounds, e.g. organoclay material **[6, 2006.01]**

33/46 • • • Amorphous silicates, e.g. so-called "amorphous zeolites" **[6, 2006.01]**

35/00 **Boron; Compounds thereof** (monoborane, diborane, metal borohydrides or addition complexes thereof C01B 6/00; perborates C01B 15/12; binary compounds with nitrogen C01B 21/06; phosphides C01B 25/08; carbides C01B 32/991) **[1, 2, 2006.01]**

35/02 • Boron; Borides **[2, 2006.01]**

35/04 • • Metal borides **[2, 2006.01]**

35/06 • Boron halogen compounds **[2, 2006.01]**

35/08 • Compounds containing boron and nitrogen, phosphorus, oxygen, sulfur, selenium or tellurium **[2, 2006.01]**

35/10 • • Compounds containing boron and oxygen (C01B 35/06 takes precedence) **[2, 2006.01]**

35/12 • • • Borates **[2, 2006.01]**

35/14 • • Compounds containing boron and nitrogen, phosphorus, sulfur, selenium or tellurium **[2, 2006.01]**

35/16 • Compounds containing direct bonding between two boron atoms, e.g. $Cl_2B—BCl_2$ **[2, 2006.01]**

35/18 • Compounds containing three or more boron atoms, e.g. NaB_3H_8, $MgB_{10}Br_{10}$ (borazoles C01B 35/14) **[2, 2006.01]**

Compounds characterised primarily by their physical or chemical properties, rather than by their chemical constitution [6]

37/00 **Compounds having molecular sieve properties but not having base-exchange properties [6, 2006.01]**

37/02 • Crystalline silica-polymorphs, e.g. silicalites **[6, 2006.01]**

37/04 • Aluminophosphates [APO compounds] **[6, 2006.01]**

37/06 • Aluminophosphates containing other elements, e.g. metals, boron **[6, 2006.01]**

37/08 • • Silicoaluminophosphates [SAPO compounds] **[6, 2006.01]**

39/00 **Compounds having molecular sieve and base-exchange properties, e.g. crystalline zeolites; Their preparation; After-treatment, e.g. ion-exchange or dealumination** (treatment to modify the sorption properties, e.g. shaping using a binder, B01J 20/10; treatment to modify the catalytic properties, e.g. combination of treatments to make the zeolites appropriate to their use as a catalyst, B01J 29/04; treatment to improve the ion-exchange properties B01J 39/14) **[6, 2006.01]**

Note(s) [6]

In this group, the following term is used with the meaning indicated:

- "zeolites" means:
  - i. crystalline aluminosilicates with base-exchange and molecular sieve properties, having three dimensional, microporous lattice framework structure of tetrahedral oxide units;
  - ii. compounds isomorphous to those of the former category, wherein the aluminium or silicon atoms in the framework are partly or wholly replaced by atoms of other elements, e.g. by gallium, germanium, phosphorus or boron.

39/02 • Crystalline aluminosilicate zeolites; Isomorphous compounds thereof; Direct preparation thereof; Preparation thereof starting from a reaction mixture containing a crystalline zeolite of another type, or from preformed reactants; After-treatment thereof **[6, 2006.01]**

39/04 • • using at least one organic template directing agent, e.g. an ionic quaternary ammonium compound or an aminated compound **[6, 2006.01]**

39/06 • • Preparation of isomorphous zeolites characterised by measures to replace the aluminium or silicon atoms in the lattice framework by atoms of other elements **[6, 2006.01]**

39/08 • • • the aluminium atoms being wholly replaced **[6, 2006.01]**

39/10 • • • the replacing atoms being phosphorus atoms **[6, 2006.01]**

39/12 • • • the replacing atoms being boron atoms **[6, 2006.01]**

39/14 • • Type A **[6, 2006.01]**

39/16 • • • from aqueous solutions of an alkali metal aluminate and an alkali metal silicate excluding any other source of alumina or silica but seeds **[6, 2006.01]**

39/18 • • • from a reaction mixture containing at least one aluminium silicate or aluminosilicate of a clay type, e.g. kaolin or metakaolin or its exotherm modification or allophane **[6, 2006.01]**

39/20 • • Faujasite type, e.g. type X or Y **[6, 2006.01]**

39/22 • • • Type X **[6, 2006.01]**

39/24 • • • Type Y **[6, 2006.01]**

39/26 • • Mordenite type **[6, 2006.01]**

39/28 • • Phillipsite or harmotome type, e.g. type B **[6, 2006.01]**

39/30 • • Erionite or offretite type, e.g. zeolite T **[6, 2006.01]**

39/32 • • Type L **[6, 2006.01]**

39/34 • • Type ZSM-4 or type Ω **[6, 2006.01]**

39/36 • • Pentasil type, e.g. types ZSM-5, ZSM-8 or ZSM-11 **[6, 2006.01]**

39/38 • • • Type ZSM-5 **[6, 2006.01]**

39/40 • • • • using at least one organic template directing agent **[6, 2006.01]**

39/42 • • Type ZSM-12 **[6, 2006.01]**

39/44 • • Ferrierite type, e.g. types ZSM-21, ZSM-35 or ZSM-38 **[6, 2006.01]**

39/46 • • Other types characterised by their X-ray diffraction pattern and their defined composition **[6, 2006.01]**

39/48 • • • using at least one organic template directing agent **[6, 2006.01]**

39/50 • Zeolites wherein inorganic bases or salts occlude channels in the lattice framework, e.g. sodalite, cancrinite, nosean, hauynite **[6, 2006.01]**

39/52 • • Sodalites **[6, 2006.01]**

39/54 • Phosphates, e.g. APO or SAPO compounds **[6, 2006.01]**

C01C **AMMONIA; CYANOGEN; COMPOUNDS THEREOF** (salts of oxyacids of halogens C01B 11/00; peroxides, salts of peroxyacids C01B 15/00; thiosulfates, dithionites, polythionates C01B 17/64; compounds containing selenium or tellurium C01B 19/00; azides C01B 21/08; metal amides C01B 21/092; nitrites C01B 21/50; phosphides C01B 25/08; salts of oxyacids of phosphorus C01B 25/16; compounds containing silicon C01B 33/00; compounds containing boron C01B 35/00; fermentation or enzyme-using processes for the preparation of elements or inorganic compounds except carbon dioxide C12P 3/00; production of non-metallic elements or inorganic compounds by electrolysis or electrophoresis C25B)

Note(s) [7, 2006.01]

1. Attention is drawn to Note (1) after class C01, which defines the last place priority rule applied in this class, i.e. in the range of subclasses C01B-C01G and within these subclasses.
2. Therapeutic activity of compounds is further classified in subclass A61P.

1/00 **Ammonia; Compounds thereof [1, 2006.01]**

1/02 • Preparation or separation of ammonia **[1, 2006.01]**

1/04 • • Preparation of ammonia by synthesis (preparation or purification of gas mixtures for ammonia synthesis C01B 3/02) **[1, 2006.01]**

1/08 • • Preparation of ammonia from nitrogenous organic substances **[1, 2006.01]**

1/10 • • Separation of ammonia from ammonia liquors, e.g. gas liquors **[1, 2006.01]**

1/12 • • Separation of ammonia from gases and vapours **[1, 2006.01]**

1/14 • • • Saturators **[1, 2006.01]**

1/16 • Halides of ammonium **[1, 2006.01]**

1/18 • Nitrates of ammonium **[1, 2006.01]**

1/20 • Sulfides; Polysulfides **[1, 2006.01]**

1/22 • Sulfites of ammonium **[1, 2006.01]**

1/24 • Sulfates of ammonium (C01C 1/14 takes precedence) **[1, 2006.01]**

1/242 • • Preparation from ammonia and sulfuric acid or sulfur trioxide **[2, 2006.01]**

1/244 • • Preparation by double decomposition of ammonium salts with sulfates **[2, 2006.01]**

1/245 • • Preparation from compounds containing nitrogen and sulfur **[2, 2006.01]**

1/246 • • • from sulfur-containing ammonium compounds **[2, 2006.01]**

1/247 • • • • by oxidation with free oxygen **[2, 2006.01]**

1/248 • • Preventing coalescing or controlling form or size of crystals **[2, 2006.01]**

1/249 • • Deacidifying the crystals **[2, 2006.01]**

1/26 • Carbonates or bicarbonates of ammonium **[1, 2006.01]**

1/28 • Methods of preparing ammonium salts in general **[1, 2006.01]**

Note(s)

1. This group does not cover ammonium salts of complex acids (other than complex cyanides) containing a metal in the anion, which are covered by the relevant groups of subclasses C01D-C01G, according to the metal.
2. Salts of polybasic acids with ammonium and a metal as cations are classified as though the ammonium were hydrogen.
3. Complex ammine salts are classified in the relevant groups of subclasses C01D-C01G, according to the metal.

3/00 **Cyanogen; Compounds thereof [1, 2006.01]**

3/02 • Preparation of hydrogen cyanide **[1, 2006.01]**

3/04 • • Separation from gases **[1, 2006.01]**

3/06 • Stabilisation of hydrogen cyanide **[1, 2006.01]**

3/08 • Simple or complex cyanides of metals **[1, 2006.01]**

3/10 • • Simple alkali metal cyanides **[1, 3, 2006.01]**

3/11 • • Complex cyanides **[3, 2006.01]**

3/12 • • Simple or complex iron cyanides **[1, 2, 2006.01]**

3/14 • Cyanic acid; Salts thereof **[1, 2006.01]**

3/16 • Cyanamide; Salts thereof **[1, 2006.01]**

3/18 • • Calcium cyanamide **[1, 2006.01]**

3/20 • Thiocyanic acid; Salts thereof **[1, 2006.01]**

C01D **COMPOUNDS OF ALKALI METALS, i.e. LITHIUM, SODIUM, POTASSIUM, RUBIDIUM, CAESIUM, OR FRANCIUM** (metal hydrides C01B 6/00; salts of oxyacids of halogens C01B 11/00; peroxides, salts of peroxyacids C01B 15/00; sulfides or polysulfides C01B 17/22; thiosulfates, dithionites, polythionates C01B 17/64; compounds containing selenium or tellurium C01B 19/00; binary compounds of nitrogen with metals C01B 21/06; azides C01B 21/08; metal amides C01B 21/092; nitrites C01B 21/50; phosphides C01B 25/08; salts of oxyacids of phosphorus C01B 25/16; carbides C01B 32/90; compounds containing silicon C01B 33/00; compounds containing boron C01B 35/00; cyanides C01C 3/08; salts of cyanic acid C01C 3/14; salts of cyanamide C01C 3/16; thiocyanates C01C 3/20; fermentation or enzyme-using processes for the preparation of elements or inorganic compounds except carbon dioxide C12P 3/00; obtaining metal compounds from mixtures, e.g. ores, which are intermediate compounds in a metallurgical process for obtaining a free metal C22B; production of non-metallic elements or inorganic compounds by electrolysis or electrophoresis C25B)

Note(s) [7, 2006.01]

1. Attention is drawn to Note (1) after class C01, which defines the last place priority rule applied in this class, i.e. in the range of subclasses C01B-C01G and within these subclasses.
2. Therapeutic activity of compounds is further classified in subclass A61P.

1/00 Oxides or hydroxides of sodium, potassium, or alkali metals in general [1, 2, 2006.01]
1/02 • Oxides **[1, 2006.01]**
1/04 • Hydroxides **[1, 2006.01]**
1/20 • • Preparation by reacting oxides or hydroxides with alkali metal salts **[1, 2006.01]**
1/22 • • • with carbonates or bicarbonates **[1, 2006.01]**
1/24 • • • from or via fluorides or silico-fluorides **[1, 2006.01]**
1/26 • • Preparation from or via cyano compounds, e.g. cyanides, cyanamides **[1, 2006.01]**
1/28 • • Purification; Separation **[1, 2006.01]**
1/30 • • • by crystallisation **[1, 2006.01]**
1/32 • • • by adsorption or precipitation **[1, 2006.01]**
1/34 • • • with selective solvents **[1, 2006.01]**
1/36 • • • by oxidation **[1, 2006.01]**
1/38 • • • by dialysis **[1, 2006.01]**
1/40 • • • by electrolysis **[1, 2006.01]**
1/42 • • Concentration; Dehydration **[1, 2006.01]**
1/44 • • Preparation in the form of granules, pieces, or other shaped products **[1, 2006.01]**

3/00 Halides of sodium, potassium, or alkali metals in general [1, 2, 2006.01]
3/02 • Fluorides **[1, 2006.01]**
3/04 • Chlorides **[1, 2006.01]**
3/06 • • Preparation by working up brines, seawater or spent lyes **[1, 2006.01]**
3/08 • • Preparation by working up natural or industrial salt mixtures or siliceous minerals **[1, 2006.01]**
3/10 • Bromides **[1, 2006.01]**
3/12 • Iodides **[1, 2006.01]**
3/14 • Purification **[1, 2006.01]**
3/16 • • by precipitation or adsorption **[1, 2006.01]**
3/18 • • with selective solvents **[1, 2006.01]**
3/20 • • by melting **[1, 2006.01]**
3/22 • Preparation in the form of granules, pieces, or other shaped products **[1, 2006.01]**
3/24 • • Influencing the crystallisation process **[1, 2006.01]**
3/26 • Preventing the absorption of moisture or caking of the crystals **[1, 2006.01]**

5/00 Sulfates or sulfites of sodium, potassium, or alkali metals in general [1, 2, 2006.01]
5/02 • Preparation of sulfates from alkali metal salts and sulfuric acid or bisulfates; Preparation of bisulfates **[1, 2006.01]**
5/04 • Preparation of sulfates with the aid of sulfurous acid or sulfites, e.g. Hargreaves process **[1, 2006.01]**
5/06 • Preparation of sulfates by double decomposition **[1, 2006.01]**
5/08 • • with each other or with ammonium sulfate **[1, 2006.01]**
5/10 • • with sulfates of magnesium, calcium, strontium, or barium **[1, 2006.01]**
5/12 • Preparation of double sulfates of magnesium with sodium or potassium **[1, 2, 2006.01]**
5/14 • Preparation of sulfites (C01D 5/04 takes precedence) **[1, 2006.01]**
5/16 • Purification **[1, 2006.01]**
5/18 • Dehydration **[1, 2006.01]**

7/00 Carbonates of sodium, potassium, or alkali metals in general [1, 2, 2006.01]
7/02 • Preparation by double decomposition **[1, 2006.01]**
7/04 • • with a fluoride or silico-fluoride (C01D 1/24 takes precedence) **[1, 2006.01]**
7/06 • Preparation via sodium or potassium magnesium carbonate **[1, 2006.01]**
7/07 • Preparation from the hydroxides **[2, 2006.01]**
7/08 • Preparation from or via cyano compounds of sodium or potassium (C01D 1/26 takes precedence) **[1, 2006.01]**
7/10 • Preparation of bicarbonates from carbonates (ammonia-soda process C01D 7/18) **[1, 2006.01]**
7/12 • Preparation of carbonates from bicarbonates **[1, 2006.01]**
7/14 • Preparation of sesquicarbonates **[1, 2006.01]**
7/16 • Preparation from compounds of sodium or potassium with amines and carbon dioxide **[1, 2006.01]**
7/18 • Preparation by the ammonia-soda process **[1, 2006.01]**
7/22 • Purification **[1, 2006.01]**
7/24 • • Crystallisation **[1, 2006.01]**
7/26 • • by precipitation or adsorption **[1, 2006.01]**
7/28 • • with selective solvents **[1, 2006.01]**
7/30 • • by oxidation **[1, 2006.01]**
7/32 • • by dialysis **[1, 2006.01]**
7/34 • • by electrolysis **[1, 2006.01]**
7/35 • Varying the content of water of crystallisation or the specific gravity **[2, 2006.01]**
7/37 • • Densifying sodium carbonate **[2, 2006.01]**
7/38 • Preparation in the form of granules, pieces, or other shaped products **[1, 2006.01]**
7/40 • • Influencing the crystallisation process **[1, 2006.01]**
7/42 • Preventing the absorption of moisture or caking **[1, 2006.01]**

9/00 Nitrates of sodium, potassium, or alkali metals in general [1, 2, 2006.01]
9/02 • Preparation by working-up natural salt mixtures **[1, 2006.01]**
9/04 • Preparation with liquid nitric acid **[1, 2006.01]**
9/06 • Preparation with gaseous nitric acid or nitrogen oxides **[1, 2006.01]**
9/08 • Preparation by double decomposition **[1, 2006.01]**
9/10 • • with ammonium nitrate **[1, 2006.01]**
9/12 • • with nitrates of magnesium, calcium, strontium, or barium **[1, 2006.01]**
9/14 • • of salts of potassium with sodium nitrate **[1, 2006.01]**
9/16 • Purification **[1, 2006.01]**
9/18 • Preparation in the form of shaped products, e.g. granules **[1, 2006.01]**
9/20 • Preventing the absorption of moisture or caking **[1, 2006.01]**

13/00 Compounds of sodium or potassium not provided for elsewhere [2, 2006.01]

15/00 Lithium compounds [2, 2006.01]
15/02 • Oxides; Hydroxides **[2, 2006.01]**
15/04 • Halides **[2, 2006.01]**
15/06 • Sulfates; Sulfites **[2, 2006.01]**
15/08 • Carbonates; Bicarbonates **[2, 2006.01]**
15/10 • Nitrates **[2, 2006.01]**

17/00 Rubidium, caesium, or francium compounds [2, 2006.01]

C01F **COMPOUNDS OF THE METALS BERYLLIUM, MAGNESIUM, ALUMINIUM, CALCIUM, STRONTIUM, BARIUM, RADIUM, THORIUM, OR OF THE RARE EARTH METALS** (metal hydrides C01B 6/00; salts of oxyacids of halogens C01B 11/00; peroxides, salts of peroxyacids C01B 15/00; sulfides or polysulfides of magnesium, calcium, strontium, or barium C01B 17/42; thiosulfates, dithionites, polythionates C01B 17/64; compounds containing selenium or tellurium C01B 19/00; binary compounds of nitrogen with metals C01B 21/06; azides C01B 21/08; metal amides C01B 21/092; nitrites C01B 21/50; phosphides C01B 25/08; salts of oxyacids of phosphorus C01B 25/16; carbides C01B 32/90; compounds containing silicon C01B 33/00; compounds containing boron C01B 35/00; compounds having molecular sieve properties but not having base-exchange properties C01B 37/00; compounds having molecular sieve and base-exchange properties, e.g. crystalline zeolites, C01B 39/00; cyanides C01C 3/08; salts of cyanic acid C01C 3/14; salts of cyanamide C01C 3/16; thiocyanates C01C 3/20; fermentation or enzyme-using processes for the preparation of elements or inorganic compounds except carbon dioxide C12P 3/00; obtaining metal compounds from mixtures, e.g. ores, which are intermediate compounds in a metallurgical process for obtaining a free metal C22B; production of non-metallic elements or inorganic compounds by electrolysis or electrophoresis C25B)

Note(s) [7, 2006.01]

1. Attention is drawn to Note (1) after class C01, which defines the last place priority rule applied in this class, i.e. in the range of subclasses C01B-C01G and within these subclasses.
2. Therapeutic activity of compounds is further classified in subclass A61P.

1/00 **Methods of preparing compounds of the metals beryllium, magnesium, aluminium, calcium, strontium, barium, radium, thorium, or the rare earths, in general [1, 2006.01]**

3/00 **Compounds of beryllium [1, 2006.01]**

3/02 • Oxides; Hydroxides **[3, 2006.01]**

5/00 **Compounds of magnesium [1, 2006.01]**

5/02 • Magnesia **[1, 2006.01]**

5/04 • • by oxidation of metallic magnesium **[1, 2006.01]**

5/06 • • by thermal decomposition of magnesium compounds (calcining magnesite or dolomite C04B 2/10) **[1, 2006.01]**

5/08 • • • by calcining magnesium hydroxide **[1, 2006.01]**

5/10 • • • by thermal decomposition of magnesium chloride with water vapour **[1, 2006.01]**

5/12 • • • by thermal decomposition of magnesium sulfate, with or without reduction **[1, 2006.01]**

5/14 • Magnesium hydroxide **[1, 2006.01]**

5/16 • • by treating magnesia, e.g. calcined dolomite, with water or solutions of salts not containing magnesium **[1, 2006.01]**

5/20 • • by precipitation from solutions of magnesium salts with ammonia **[1, 2006.01]**

5/22 • • from magnesium compounds with alkali hydroxides or alkaline earth oxides or hydroxides **[1, 2006.01]**

5/24 • Magnesium carbonates **[1, 2006.01]**

5/26 • Magnesium halides **[1, 2006.01]**

5/28 • • Fluorides **[1, 2006.01]**

5/30 • • Chlorides **[1, 2006.01]**

5/32 • • • Preparation of anhydrous magnesium chloride by chlorinating magnesium compounds **[1, 2006.01]**

5/34 • • • Dehydrating magnesium chloride containing water of crystallisation **[1, 2006.01]**

5/36 • • Bromides **[1, 2006.01]**

5/38 • Magnesium nitrates **[1, 2006.01]**

5/40 • Magnesium sulfates (double sulfates of magnesium with sodium or potassium C01D 5/12, with other alkali metals C01D 15/06, C01D 17/00) **[1, 3, 2006.01]**

5/42 • Magnesium sulfites **[1, 2006.01]**

7/00 **Compounds of aluminium [1, 2006.01, 2022.01]**

7/02 • Aluminium oxide; Aluminium hydroxide; Aluminates **[1, 2006.01, 2022.01]**

7/021 • • After-treatment of oxides or hydroxides **[2022.01]**

7/022 • • • Classification **[2022.01]**

7/023 • • • Grinding, deagglomeration or disintegration **[2022.01]**

7/025 • • • Granulation or agglomeration **[2022.01]**

7/026 • • • Making or stabilising dispersions **[2022.01]**

7/027 • • • Treatment involving fusion or vaporisation **[2022.01]**

7/028 • • Beta-aluminas **[2022.01]**

7/04 • • Preparation of alkali metal aluminates; Aluminium oxide or hydroxide therefrom (C01F 7/028 takes precedence) **[1, 2006.01, 2022.01]**

7/043 • • • Lithium aluminates **[2022.01]**

7/046 • • • Stabilisation of aluminates **[2022.01]**

7/06 • • • by treating aluminous minerals or waste-like raw materials with alkali hydroxide, e.g. leaching of bauxite according to the Bayer process (obtaining aluminium oxide or hydroxide from the resulting aluminate solution C01F 7/14) **[1, 2006.01, 2022.01]**

7/0606 • • • • Making-up the alkali hydroxide solution from recycled spent liquor **[2022.01]**

7/0613 • • • • Pretreatment of the minerals, e.g. grinding **[2022.01]**

7/062 • • • • Digestion **[2022.01]**

7/0626 • • • • • Processes making use of tube digestion only **[2022.01]**

7/0633 • • • • • characterised by the use of additives **[2022.01]**

7/064 • • • • • Apparatus for digestion, e.g. digestor vessels or heat exchangers **[2022.01]**

7/0646 • • • • Separation of the insoluble residue, e.g. of red mud **[2022.01]**

7/0653 • • • • • characterised by the flocculant added to the slurry (final clarification of the aluminate solution C01F 7/47) **[2022.01]**

7/066 • • • • Treatment of the separated residue **[2022.01]**

7/0666 • • • • Process control or regulation **[2022.01]**

7/0673 • • • • from phosphate-containing minerals **[2022.01]**

7/068 • • • • from carbonate-containing minerals, e.g. dawsonite **[2022.01]**

7/0686 • • • • from sulfate-containing minerals, e.g. alunite **[2022.01]**

7/0693 • • • • from waste-like raw materials, e.g. fly ash or Bayer calcination dust **[2022.01]**

7/08 • • • by treating aluminous minerals with sodium carbonate, e.g. sinter processes (C01F 7/0613, C01F 7/066 take precedence) **[1, 2006.01, 2022.01]**

7/085 • • • • according to the lime-sinter process **[2022.01]**

7/10 • • • by treating aluminous minerals with alkali sulfates and reducing agents **[1, 2006.01]**

7/12 • • • Alkali metal aluminates from alkaline earth metal aluminates **[1, 2006.01]**

7/14 • • • Aluminium oxide or hydroxide from alkali metal aluminates **[1, 2006.01, 2022.01]**

7/141 • • • • from aqueous aluminate solutions by neutralisation with an acidic agent **[2022.01]**

7/142 • • • • • with carbon dioxide **[2022.01]**

7/144 • • • • from aqueous aluminate solutions by precipitation due to cooling, e.g. as part of the Bayer process **[2022.01]**

7/145 • • • • • characterised by the use of a crystal growth modifying agent other than aluminium hydroxide seed **[2022.01]**

7/147 • • • • • Apparatus for precipitation **[2022.01]**

7/148 • • • • • Separation of the obtained hydroxide, e.g. by filtration or dewatering **[2022.01]**

7/16 • • Preparation of alkaline-earth metal aluminates or magnesium aluminates; Aluminium oxide or hydroxide therefrom (C01F 7/028 takes precedence) **[1, 2006.01, 2022.01]**

7/162 • • • Magnesium aluminates **[2022.01]**

7/164 • • • Calcium aluminates **[2022.01]**

7/166 • • • Strontium aluminates **[2022.01]**

7/168 • • • Barium aluminates **[2022.01]**

7/18 • • • Aluminium oxide or hydroxide from alkaline earth metal aluminates **[1, 2006.01]**

7/20 • • Preparation of aluminium oxide or hydroxide from aluminous ores using acids or salts **[1, 2006.01]**

7/22 • • • with halides or halogen acids **[1, 2006.01]**

7/24 • • • with nitric acid or nitrogen oxides **[1, 2006.01]**

7/26 • • • with sulfuric acids or sulfates **[1, 2006.01]**

7/28 • • • with sulfurous acid **[1, 2006.01]**

7/30 • • Preparation of aluminium oxide or hydroxide by thermal decomposition or by hydrolysis or oxidation of aluminium compounds **[1, 2006.01, 2022.01]**

7/302 • • • Hydrolysis or oxidation of gaseous aluminium compounds in the gaseous phase **[2022.01]**

7/304 • • • • of organic aluminium compounds **[2022.01]**

7/306 • • • Thermal decomposition of hydrated chlorides, e.g. of aluminium trichloride hexahydrate **[2022.01]**

7/308 • • • Thermal decomposition of nitrates **[2022.01]**

7/32 • • • Thermal decomposition of sulfates including complex sulfates, e.g. alums **[1, 2006.01]**

7/34 • • Preparation of aluminium hydroxide by precipitation from solutions containing aluminium salts **[1, 2006.01]**

7/36 • • • from organic aluminium salts **[1, 2006.01]**

7/38 • • Preparation of aluminium oxide by thermal reduction of aluminous minerals **[1, 2006.01]**

7/40 • • • in the presence of aluminium sulfide **[1, 2006.01]**

7/42 • • Preparation of aluminium oxide or hydroxide from metallic aluminium, e.g. by oxidation **[1, 2006.01, 2022.01]**

7/422 • • • by oxidation with a gaseous oxidator at a high temperature **[2022.01]**

7/424 • • • • using a plasma **[2022.01]**

7/426 • • • by applying mechanical energy to solid aluminium at a low temperature **[2022.01]**

7/428 • • • by oxidation in an aqueous solution **[2022.01]**

7/44 • • Dehydration of aluminium oxide or hydroxide, i.e. all conversions of one form into another involving a loss of water **[1, 2006.01, 2022.01]**

7/441 • • • by calcination **[2022.01]**

7/442 • • • • in presence of a calcination additive **[2022.01]**

7/444 • • • • Apparatus therefor **[2022.01]**

7/445 • • • • making use of a fluidised bed **[2022.01]**

7/447 • • • by wet processes **[2022.01]**

7/448 • • • • using superatmospheric pressure, e.g. hydrothermal conversion of gibbsite into boehmite **[2022.01]**

7/46 • • Purification of aluminium oxide, aluminium hydroxide or aluminates (C01F 7/028 takes precedence) **[1, 5, 2006.01]**

7/47 • • • of aluminates, e.g. removal of compounds of Si, Fe, Ga or of organic compounds from Bayer process liquors **[5, 2006.01, 2022.01]**

7/473 • • • • Removal of organic compounds, e.g. sodium oxalate **[2022.01]**

7/476 • • • • • by oxidation **[2022.01]**

7/48 • Halides, with or without other cations besides aluminium **[1, 2006.01]**

7/50 • • Fluorides **[1, 2006.01]**

7/52 • • • Double compounds containing both fluorine and other halide groups **[1, 2006.01]**

7/54 • • • Double compounds containing both aluminium and alkali metals or alkaline earth metals **[1, 2006.01]**

7/56 • • Chlorides (containing fluorine C01F 7/52) **[1, 3, 2006.01, 2022.01]**

7/57 • • • Basic aluminium chlorides, e.g. polyaluminium chlorides **[2022.01]**

7/58 • • • Preparation of anhydrous aluminium chloride **[1, 2006.01]**

7/60 • • • • from oxygen-containing aluminium compounds **[1, 2006.01]**

7/62 • • • Purification **[1, 2006.01]**

7/64 • • Bromides (containing fluorine C01F 7/52) **[1, 3, 2006.01]**

7/66 • Nitrates, with or without other cations besides aluminium **[1, 3, 2006.01]**

7/68 • Aluminium compounds containing sulfur **[1, 3, 2006.01]**

7/70 • • Sulfides **[1, 2006.01]**

7/72 • • Sulfites **[1, 2006.01]**

7/74 • • Sulfates **[1, 2006.01, 2022.01]**

7/741 • • • Preparation from elemental aluminium or elemental aluminium containing materials, e.g. foil or dross **[2022.01]**

7/743 • • • Preparation from silicoaluminious materials, e.g. clays or bauxite **[2022.01]**

7/745 • • • Preparation from alums, e.g. alunite **[2022.01]**

7/746 • • • After-treatment, e.g. dehydration or stabilisation **[2022.01]**

7/748 • • • • Purification **[2022.01]**

7/76 • • • Double salts, i.e. compounds containing, besides aluminium and sulfate ions, only other cations, e.g. alums **[1, 2006.01, 2022.01]**

7/762 • • • • Ammonium or alkali metal aluminium sulfates **[2022.01]**

7/765 • • • • • Ammonium aluminium sulfates **[2022.01]**

7/767 • • • • Alkaline earth metal aluminium sulfates **[2022.01]**

7/77 • Aluminium carbonates **[2022.01]**

7/78 • Compounds containing aluminium and two or more other elements, with the exception of oxygen and hydrogen (aluminates C01F 7/02; compounds containing aluminium, fluorine and alkali or alkaline earth metals C01F 7/54; nitrates containing other cations besides aluminium C01F 7/66; sulfides, sulfites or sulfates containing other cations besides aluminium C01F 7/70-C01F 7/74) **[2022.01]**

7/782 • • containing carbonate ions, e.g. dawsonite **[2022.01]**

7/784 • • Layered double hydroxide, e.g. comprising nitrate, sulfate or carbonate ions as intercalating anions **[2022.01]**

7/785 • • • Hydrotalcite **[2022.01]**

7/786 • • containing, besides aluminium, only anions, e.g. $Al[OH]_xCl_y[SO_4]_z$ (mixed halides C01F 7/48) **[2022.01]**

7/788 • • Ammonium aluminium fluorides, e.g. ammonium hexafluoroaluminate **[2022.01]**

11/00 Compounds of calcium, strontium, or barium (C01F 7/00 takes precedence) **[1, 3, 2006.01]**

11/02 • Oxides or hydroxides (production of lime C04B 2/00) **[1, 2006.01]**

11/04 • • by thermal decomposition **[1, 2006.01]**

11/06 • • • of carbonates **[1, 2006.01]**

11/08 • • by reduction of sulfates **[1, 2006.01]**

11/10 • • from sulfides **[1, 2006.01]**

11/12 • • from silicates **[1, 2006.01]**

11/16 • • Purification **[1, 2006.01]**

11/18 • Carbonates **[1, 2006.01]**

11/20 • Halides **[1, 2006.01]**

11/22 • • Fluorides **[1, 2006.01]**

11/24 • • Chlorides **[1, 2006.01]**

11/26 • • • from sulfides **[1, 2006.01]**

11/28 • • • by chlorination of alkaline earth metal compounds **[1, 2006.01]**

11/30 • • • Concentrating; Dehydrating; Preventing the absorption of moisture or caking **[1, 2006.01]**

11/32 • • • Purification **[1, 2006.01]**

11/34 • • Bromides **[1, 2006.01]**

11/36 • Nitrates **[1, 2006.01]**

11/38 • • Preparation with nitric acid or nitrogen oxides **[1, 2006.01]**

11/40 • • Preparation by double decomposition with nitrates **[1, 2006.01]**

11/42 • • Double salts (with magnesium C01F 5/38) **[1, 2006.01]**

11/44 • • Concentrating; Crystallising; Dehydrating; Preventing the absorption of moisture or caking **[1, 2006.01]**

11/46 • Sulfates (dehydration of gypsum C04B 11/02) **[1, 2006.01]**

11/48 • Sulfites **[1, 2006.01]**

13/00 Compounds of radium [1, 2006.01]

15/00 Compounds of thorium [1, 2006.01]

17/00 Compounds of rare earth metals [1, 2006.01, 2020.01]

Note(s) [2020.01]

1. In this group, the following expression is used with the meaning indicated:
   - "rare earth metals" means elements from the group of the lanthanides as well as scandium or yttrium, taken alone or in combination.
2. When classifying a compound in groups C01F 17/20-C01F 17/38, then its specific preparation or treatment must also be classified in groups C01F 17/10-C01F 17/17 as long as the compound is characterised by its preparation or treatment, and vice versa.

17/10 • Preparation or treatment, e.g. separation or purification **[2020.01]**

17/13 • • by using ion exchange resins, e.g. chelate resins **[2020.01]**

17/17 • • involving a liquid-liquid extraction **[2020.01]**

17/20 • Compounds containing only rare earth metals as the metal element **[2020.01]**

17/206 • • oxide or hydroxide being the only anion **[2020.01]**

17/212 • • • Scandium oxides or hydroxides **[2020.01]**

17/218 • • • Yttrium oxides or hydroxides **[2020.01]**

17/224 • • • Oxides or hydroxides of lanthanides **[2020.01]**

17/229 • • • • Lanthanum oxides or hydroxides **[2020.01]**

17/235 • • • • Cerium oxides or hydroxides **[2020.01]**

17/241 • • • containing two or more rare earth metals, e.g. $NdPrO_3$ or $LaNdPrO_3$ **[2020.01]**

17/247 • • Carbonates **[2020.01]**

17/253 • • Halides **[2020.01]**

17/259 • • • Oxyhalides **[2020.01]**

17/265 • • • Fluorides **[2020.01]**

17/271 • • • Chlorides **[2020.01]**

17/276 • • Nitrates **[2020.01]**

17/282 • • Sulfates **[2020.01]**

17/288 • • Sulfides **[2020.01]**

17/294 • • • Oxysulfides **[2020.01]**

17/30 • Compounds containing rare earth metals and at least one element other than a rare earth metal, oxygen or hydrogen, e.g. $La_4S_3Br_6$ (C01F 17/247-C01F 17/294 take precedence) **[2020.01]**

17/32 • • oxide or hydroxide being the only anion, e.g. $NaCeO_2$ or Mg_xCa_yEuO **[2020.01]**

17/34 • • • Aluminates, e.g. $YAlO_3$ or $Y_{3-x}Gd_xAl_5O_{12}$ **[2020.01]**

17/36 • • halogen being the only anion, e.g. $NaYF_4$ **[2020.01]**

17/38 • • sulfur being the only anion, e.g. $CaLa_2S_4$ **[2020.01]**

C01G **COMPOUNDS CONTAINING METALS NOT COVERED BY SUBCLASSES C01D OR C01F** (metal hydrides C01B 6/00; salts of oxyacids of halogens C01B 11/00; peroxides, salts of peroxyacids C01B 15/00; thiosulfates, dithionites, polythionates C01B 17/64; compounds containing selenium or tellurium C01B 19/00; binary compounds of nitrogen with metals C01B 21/06; azides C01B 21/08; metal amides C01B 21/092; nitrites C01B 21/50; phosphides C01B 25/08; salts of oxyacids of phosphorus C01B 25/16; carbides C01B 32/90; compounds containing silicon C01B 33/00; compounds containing boron C01B 35/00; compounds having molecular sieve properties but not having base-exchange properties C01B 37/00; compounds having molecular sieve and base-exchange properties, e.g. crystalline zeolites, C01B 39/00; cyanides C01C 3/08; salts of cyanic acid C01C 3/14; salts of cyanamide C01C 3/16; thiocyanates C01C 3/20; fermentation or enzyme-using processes for the preparation of elements or inorganic compounds except carbon dioxide C12P 3/00; obtaining metal compounds from mixtures, e.g. ores, which are intermediate compounds in a metallurgical process for obtaining a free metal C21B, C22B; production of non-metallic elements or inorganic compounds by electrolysis or electrophoresis C25B)

Note(s) [7, 2006.01]

1. Attention is drawn to Note (1) after class C01, which defines the last place priority rule applied in this class, i.e. in the range of subclasses C01B-C01G and within these subclasses.
2. Therapeutic activity of compounds is further classified in subclass A61P.

Subclass index

1/00 **Methods of preparing compounds of metals not covered by subclasses C01B, C01C, C01D, C01F, in general** (electrolytic production of inorganic compounds C25B 1/00) **[1, 2, 2006.01]**

1/02 • Oxides **[1, 2006.01]**

1/04 • Carbonyls **[1, 2006.01]**

1/06 • Halides **[1, 2006.01]**

1/08 • Nitrates **[1, 2006.01]**

1/10 • Sulfates **[1, 2006.01]**

1/12 • Sulfides **[1, 2006.01]**

1/14 • Sulfites **[1, 2006.01]**

3/00 Compounds of copper [1, 2006.01]
3/02 • Oxides; Hydroxides **[1, 2006.01]**
3/04 • Halides **[1, 2006.01]**
3/05 • • Chlorides **[3, 2006.01]**
3/06 • • Oxychlorides **[1, 2006.01]**
3/08 • Nitrates **[1, 2006.01]**
3/10 • Sulfates **[1, 2006.01]**
3/12 • Sulfides **[1, 2006.01]**
3/14 • Complexes with ammonia **[1, 2006.01]**

5/00 Compounds of silver [1, 2006.01]
5/02 • Halides **[3, 2006.01]**

7/00 Compounds of gold [1, 2006.01]

9/00 Compounds of zinc [1, 2006.01]
9/02 • Oxides; Hydroxides **[1, 3, 2006.01]**
9/03 • • Processes of production using dry methods, e.g. vapour phase processes **[3, 2006.01]**
9/04 • Halides **[1, 2006.01]**
9/06 • Sulfates **[1, 2006.01]**
9/08 • Sulfides **[1, 2006.01]**

11/00 Compounds of cadmium [1, 2006.01]
11/02 • Sulfides **[3, 2006.01]**

13/00 Compounds of mercury [1, 2006.01]
13/02 • Oxides **[1, 2006.01]**
13/04 • Halides **[1, 2006.01]**

15/00 Compounds of gallium, indium, or thallium [1, 2006.01]

17/00 Compounds of germanium [1, 2006.01]
17/02 • Germanium dioxide **[1, 2006.01]**
17/04 • Halides of germanium **[1, 2006.01]**

19/00 Compounds of tin [1, 2006.01]
19/02 • Oxides **[1, 2006.01]**
19/04 • Halides **[1, 2006.01]**
19/06 • • Stannous chloride **[1, 2006.01]**
19/08 • • Stannic chloride **[1, 2006.01]**

21/00 Compounds of lead [1, 2006.01]
21/02 • Oxides **[1, 2006.01]**
21/04 • • Lead suboxide [Pb_2O] **[1, 2006.01]**
21/06 • • Lead monoxide [PbO] **[1, 2006.01]**
21/08 • • Lead dioxide [PbO_2] **[1, 2006.01]**
21/10 • • Red lead [Pb_3O_4] **[1, 2006.01]**
21/12 • Hydroxides **[1, 2006.01]**
21/14 • Carbonates **[1, 2006.01]**
21/16 • Halides **[1, 2006.01]**
21/18 • Nitrates **[1, 2006.01]**
21/20 • Sulfates **[1, 2006.01]**
21/21 • Sulfides **[3, 2006.01]**
21/22 • Plumbates; Plumbites **[1, 2006.01]**

23/00 Compounds of titanium [1, 2006.01]
23/02 • Halides of titanium **[1, 2006.01]**
23/04 • Oxides; Hydroxides **[1, 3, 2006.01]**
23/047 • • Titanium dioxide **[3, 2006.01]**
23/053 • • • Producing by wet processes, e.g. hydrolysing titanium salts **[3, 2006.01]**
23/07 • • • Producing by vapour phase processes, e.g. halide oxidation **[3, 2006.01]**
23/08 • • • Drying; Calcining **[1, 3, 2006.01]**

25/00 Compounds of zirconium [1, 2006.01]
25/02 • Oxides **[1, 2006.01]**
25/04 • Halides **[1, 2006.01]**
25/06 • Sulfates **[1, 2006.01]**

27/00 Compounds of hafnium [1, 2006.01]
27/02 • Oxides **[1, 2006.01]**
27/04 • Halides **[1, 2006.01]**
27/06 • Sulfates **[1, 2006.01]**

28/00 Compounds of arsenic [3, 2006.01]
28/02 • Arsenates; Arsenites **[3, 2006.01]**

29/00 Compounds of bismuth [1, 2006.01]

30/00 Compounds of antimony [3, 2006.01]
30/02 • Antimonates; Antimonites **[3, 2006.01]**

31/00 Compounds of vanadium [1, 2006.01]
31/02 • Oxides **[3, 2006.01]**
31/04 • Halides **[3, 2006.01]**

33/00 Compounds of niobium [1, 2006.01]

35/00 Compounds of tantalum [1, 2006.01]
35/02 • Halides **[3, 2006.01]**

37/00 Compounds of chromium [1, 2006.01]
37/02 • Oxides or hydrates thereof **[1, 2006.01]**
37/027 • • Chromium dioxide **[3, 2006.01]**
37/033 • • Chromium trioxide; Chromic acid **[3, 2006.01]**
37/04 • Chromium halides **[1, 2006.01]**
37/06 • • Chromylhalides **[1, 2006.01]**
37/08 • Chromium sulfates **[1, 2006.01]**
37/10 • • Chrome alum **[1, 2006.01]**
37/14 • Chromates; Bichromates **[1, 2006.01]**

39/00 Compounds of molybdenum [1, 2006.01]
39/02 • Oxides; Hydroxides **[3, 2006.01]**
39/04 • Halides **[3, 2006.01]**
39/06 • Sulfides **[3, 2006.01]**

41/00 Compounds of tungsten [1, 2006.01]
41/02 • Oxides; Hydroxides **[3, 2006.01]**
41/04 • Halides **[3, 2006.01]**

43/00 Compounds of uranium [1, 2006.01]
43/01 • Oxides; Hydroxides **[3, 2006.01]**
43/025 • • Uranium dioxide **[3, 2006.01]**
43/04 • Halides of uranium **[1, 2006.01]**
43/06 • • Fluorides **[1, 2006.01]**
43/08 • • Chlorides **[1, 2006.01]**
43/10 • • Bromides **[1, 2006.01]**
43/12 • • Iodides **[1, 2006.01]**

45/00 Compounds of manganese [1, 2006.01]
45/02 • Oxides; Hydroxides **[1, 2006.01]**
45/04 • Carbonyls **[1, 2006.01]**
45/06 • Halides **[1, 2006.01]**
45/08 • Nitrates **[1, 2006.01]**
45/10 • Sulfates **[1, 2006.01]**
45/12 • Manganates; Permanganates **[1, 2006.01]**

47/00 Compounds of rhenium [1, 2006.01]

49/00 Compounds of iron [1, 2006.01]
49/02 • Oxides; Hydroxides **[1, 2006.01]**

49/04 • • Ferrous oxide [FeO] **[1, 2006.01]**
49/06 • • Ferric oxide [Fe_2O_3] **[1, 2006.01]**
49/08 • • Ferroso-ferric oxide [Fe_3O_4] **[1, 2006.01]**
49/10 • Halides **[1, 2006.01]**
49/12 • Sulfides **[1, 2006.01]**
49/14 • Sulfates **[1, 2006.01]**
49/16 • Carbonyls **[1, 2006.01]**

51/00 Compounds of cobalt [1, 2006.01]
51/02 • Carbonyls **[1, 2006.01]**
51/04 • Oxides; Hydroxides **[1, 2006.01]**
51/06 • Carbonates **[1, 2006.01]**
51/08 • Halides **[1, 2006.01]**
51/10 • Sulfates **[1, 2006.01]**
51/12 • Complexes with ammonia **[1, 2006.01]**

53/00 Compounds of nickel [1, 2006.01]
53/02 • Carbonyls **[1, 2006.01]**
53/04 • Oxides; Hydroxides **[1, 2006.01]**
53/06 • Carbonates **[1, 2006.01]**
53/08 • Halides **[1, 2006.01]**
53/09 • • Chlorides **[3, 2006.01]**
53/10 • Sulfates **[1, 2006.01]**
53/11 • Sulfides **[3, 2006.01]**
53/12 • Complexes with ammonia **[1, 2006.01]**

55/00 Compounds of ruthenium, rhodium, palladium, osmium, iridium, or platinum [1, 2006.01]

56/00 Compounds of transuranic elements [1, 2006.01]

99/00 Subject matter not provided for in other groups of this subclass [2010.01]