

## 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 repellent, 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; HYDROGEN ISOTOPES; WATER; HYDRIDES.....	3/00, 4/00, 5/00, 6/00
SYNTHESIS GAS.....	3/00
HALOGENS OR THEIR COMPOUNDS.....	7/00, 9/00, 11/00
OXYGEN, OXIDES IN GENERAL; PER-COMPOUNDS.....	13/00, 15/00
SULFUR, COMPOUNDS THEREOF.....	17/00
NITROGEN, COMPOUNDS THEREOF.....	21/00
PHOSPHORUS, COMPOUNDS THEREOF.....	25/00
CARBON, COMPOUNDS THEREOF.....	32/00
SILICON, COMPOUNDS THEREOF.....	33/00
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COMPOUNDS HAVING MOLECULAR SIEVE PROPERTIES BUT NOT HAVING BASE-EXCHANGE PROPERTIES.....	37/00
COMPOUNDS HAVING MOLECULAR SIEVE AND BASE-EXCHANGE PROPERTIES.....	39/00

#### 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]	3/08     • • • with metals [3, 2006.01]
3/02	• Production of hydrogen or of gaseous mixtures containing hydrogen [3, 2006.01]	3/10     • • • by reaction of water vapour with metals [3, 2006.01]
3/04	• • by decomposition of inorganic compounds, e.g. ammonia [3, 2006.01]	3/12     • • • by reaction of water vapour with carbon monoxide [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]	3/14     • • • 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.  $\text{NH}_3 + \text{D}_2 \rightarrow \text{NH}_2\text{D} + \text{HD}$  [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.  $4\text{ND}_3 + 7\text{O}_2 \rightarrow 4\text{NO}_2 + 6\text{D}_2\text{O}$ ,  $2\text{D}_2 + \text{O}_2 \rightarrow 2\text{D}_2\text{O}$  [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.  $\text{LiBH}_4 \cdot 2\text{N}_2\text{H}_4$ ,  $\text{NaBH}_7$  [2, 2006.01]
- 6/23 • • • • Preparation of borohydrides of other metals, e.g. aluminium borohydride; Addition complexes thereof, e.g.  $\text{Li}[\text{Al}(\text{BH}_4)_3\text{H}]$  [2, 2006.01]
- 6/24 • Hydrides containing at least two metals, e.g.  $\text{Li}(\text{AlH}_4)$ ; 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]	17/00	<b>Sulfur; Compounds thereof [1, 2006.01]</b>
13/08	• from air with the aid of metal oxides, e.g. barium oxide, manganese oxide [1, 2006.01]	17/02	• Preparation of sulfur; Purification [1, 2006.01]
13/10	• Preparation of ozone [1, 2006.01]	17/027	• • Recovery of sulfur from material containing elemental sulfur, e.g. luxmasses; Purification [3, 2006.01]
13/11	• by electric discharge [2, 2006.01]	17/033	• • • using a liquid extractant [3, 2006.01]
13/14	• Methods for preparing oxides or hydroxides in general (particular individual oxides or hydroxides, <u>see</u> the relevant groups of subclasses C01B-C01G or C25B, according to the element combined with the oxygen or hydroxy group) [1, 2006.01]	17/04	• • from gaseous sulfur compounds including gaseous sulfides [1, 2006.01]
13/16	• • Purification [3, 2006.01]	17/05	• • • by wet processes [3, 2006.01]
13/18	• • by thermal decomposition of compounds, e.g. of salts or hydroxides [3, 2006.01]	17/06	• • from non-gaseous sulfides or materials containing such sulfides, e.g. ores [1, 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]	17/10	• • Finely-divided sulfur, e.g. sublimed sulfur, flowers of sulfur [1, 2006.01]
13/22	• • • of halides or oxyhalides [3, 2006.01]	17/12	• • Insoluble sulfur (mu-sulfur) [1, 2006.01]
13/24	• • • in the presence of hot combustion gases [3, 2006.01]	17/16	• Hydrogen sulfides [1, 2006.01]
13/26	• • • in the presence of a fluidised bed [3, 2006.01]	17/18	• • Hydrogen polysulfides [1, 2006.01]
13/28	• • • using a plasma or an electric discharge [3, 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, <u>see</u> the relevant groups of subclasses C01F or C01G, according to the metal) [1, 2006.01]
13/30	• • • Removal and cooling of the oxide containing suspension [3, 2006.01]	17/22	• Alkali metal sulfides or polysulfides [1, 2006.01]
13/32	• • by oxidation or hydrolysis of elements or compounds in the liquid or solid state [3, 2006.01]	17/24	• • Preparation by reduction [1, 2006.01]
13/34	• • by oxidation or hydrolysis of sprayed or atomised solutions [3, 2006.01]	17/26	• • • with carbon [1, 2006.01]
13/36	• • by precipitation reactions in solutions [3, 2006.01]	17/28	• • • with reducing gases [1, 2006.01]
<b>15/00</b>	<b>Peroxides; Peroxyhydrates; Peroxyacids or salts thereof; Superoxides; Ozonides [1, 2006.01]</b>	17/30	• • Preparation from sodium or potassium amalgam with sulfur or sulfides [1, 2006.01]
15/01	• Hydrogen peroxide [3, 2006.01]	17/32	• • Hydrosulfides of sodium or potassium [1, 2006.01]
15/013	• • Separation; Purification; Concentration [3, 2006.01]	17/34	• • Polysulfides of sodium or potassium [1, 2006.01]
15/017	• • • Anhydrous hydrogen peroxide; Anhydrous solutions or gaseous mixtures containing hydrogen peroxide [3, 2006.01]	17/36	• • Purification [1, 2006.01]
15/022	• • Preparation from organic compounds [2, 2006.01]	17/38	• • Dehydration [1, 2006.01]
15/023	• • • by the alkyl-anthraquinone process [3, 2006.01]	17/40	• • Making shaped products, e.g. granules [1, 2006.01]
15/024	• • • from hydrocarbons [3, 2006.01]	17/42	• Sulfides or polysulfides of magnesium, calcium, strontium, or barium [1, 2006.01]
15/026	• • • from alcohols [3, 2006.01]	17/43	• • from oxides or hydroxides with sulfur or hydrogen sulfide [1, 2006.01]
15/027	• • Preparation from water [3, 2006.01]	17/44	• • by reduction of sulfates [1, 2006.01]
15/029	• • Preparation from hydrogen and oxygen [3, 2006.01]	17/45	• Compounds containing sulfur and halogen, with or without oxygen [1, 2006.01]
15/03	• • Preparation from inorganic peroxy-compounds, e.g. from peroxy sulfates [3, 2006.01]	17/46	• Compounds containing sulfur, halogen, hydrogen, and oxygen [1, 2006.01]
15/032	• • • from metal peroxides [3, 2006.01]	17/48	• Sulfur dioxide; Sulfurous acid [1, 2006.01]
15/037	• • Stabilisation by additives [3, 2006.01]	17/50	• • Preparation of sulfur dioxide [1, 2006.01]
15/04	• Metal peroxides or peroxyhydrates thereof; Superoxides; Ozonides [1, 3, 2006.01]	17/52	• • • by roasting sulfides (preliminary treatment of ores or scrap C22B 1/00) [1, 2006.01]
15/043	• • of alkali metals, alkaline earth metals or of magnesium [2, 3, 2006.01]	17/54	• • • by burning elemental sulfur [1, 2006.01]
15/047	• • of heavy metals [2, 3, 2006.01]	17/56	• • • Separation; Purification [1, 2006.01]
15/055	• Peroxyhydrates (C01B 15/04 takes precedence); Peroxyacids or salts thereof [3, 2006.01]	17/58	• • • Recovery of sulfur dioxide from acid tar or the like [1, 2006.01]
15/06	• • containing sulfur [1, 3, 2006.01]	17/60	• • • Isolation of sulfur dioxide from gases [1, 2006.01]
15/08	• • • Peroxsulfates [1, 3, 2006.01]	17/62	• Methods of preparing sulfites in general (particular individual sulfites, <u>see</u> the relevant groups of subclasses C01B-C01G, according to the cation) [1, 2006.01]
15/10	• • containing carbon [1, 3, 2006.01]	17/64	• Thiosulfates; Dithionites; Polythionates [1, 2006.01]
15/12	• • containing boron [1, 3, 2006.01]	17/66	• • Dithionites [1, 2006.01]
15/14	• • containing silicon [1, 3, 2006.01]	17/69	• Sulfur trioxide; Sulfuric acid [3, 2006.01]
15/16	• • containing phosphorus [1, 3, 2006.01]	17/70	• • Stabilisation of gamma-form sulfur trioxide [1, 2006.01]

17/765	• • • • Multi-stage SO <sub>3</sub> -conversion [3, 2006.01]	21/14	• • Hydroxylamine; Salts thereof [1, 2006.01]
17/77	• • • • Fluidised-bed processes [3, 2006.01]	21/16	• • Hydrazine; Salts thereof [1, 2006.01]
17/775	• • • • Liquid phase contacting processes or wet catalysis processes [3, 2006.01]	21/20	• Nitrogen oxides; Oxyacids of nitrogen; Salts thereof [1, 2006.01]
17/78	• • • characterised by the catalyst used [1, 2006.01]	21/22	• • Nitrous oxide (N <sub>2</sub> O) [1, 2006.01]
17/79	• • • • containing vanadium [3, 2006.01]	21/24	• • Nitric oxide (NO) [1, 2006.01]
17/80	• • • Apparatus [1, 2006.01]	21/26	• • • Preparation by catalytic oxidation of ammonia [1, 2006.01]
17/82	• • • of sulfuric acid using a nitrogen oxide process [1, 2006.01]	21/28	• • • • Apparatus [1, 2006.01]
17/84	• • • Chamber process [1, 2006.01]	21/30	• • • Preparation by oxidation of nitrogen [1, 2006.01]
17/86	• • • Tower process [1, 2006.01]	21/32	• • • • Apparatus [1, 2006.01]
17/88	• • Concentration of sulfuric acid [1, 2006.01]	21/34	• • Nitrogen trioxide (N <sub>2</sub> O <sub>3</sub> ) [1, 2006.01]
17/90	• • Separation; Purification [1, 2006.01]	21/36	• • Nitrogen dioxide (NO <sub>2</sub> , N <sub>2</sub> O <sub>4</sub> ) (C01B 21/26, C01B 21/30 take precedence) [1, 2006.01]
17/92	• • • Recovery from acid tar or the like [1, 2006.01]	21/38	• • Nitric acid [1, 2006.01]
17/94	• • • Recovery from nitration acids [1, 2006.01]	21/40	• • • Preparation by absorption of oxides of nitrogen [1, 2006.01]
17/96	• Methods for the preparation of sulfates in general (particular individual sulfates, <u>see</u> the relevant groups of subclasses C01B-C01G, according to the cation) [1, 2006.01]	21/42	• • • Preparation from nitrates [1, 2006.01]
17/98	• Other compounds containing sulfur and oxygen (persulfuric acids C01B 15/06; persulfates C01B 15/08) [1, 2006.01]	21/44	• • • Concentration [1, 2006.01]
<b>19/00</b>	<b>Selenium; Tellurium; Compounds thereof [1, 2006.01]</b>	21/46	• • • Purification; Separation [1, 2006.01]
19/02	• Elemental selenium or tellurium [3, 2006.01]	21/48	• • Methods for the preparation of nitrates in general (particular individual nitrates, <u>see</u> the relevant groups of subclasses C01B-C01G, according to the cation) [1, 2006.01]
19/04	• Binary compounds [3, 2006.01]	21/50	• • Nitrous acid; Salts thereof [1, 2006.01]
<b>21/00</b>	<b>Nitrogen; Compounds thereof [1, 2006.01]</b>	<b>23/00</b>	<b>Noble gases; Compounds thereof (liquefying F25J) [1, 2006.01]</b>
21/02	• Preparation of nitrogen (by decomposition of ammonia C01B 3/04) [1, 2006.01]	<b>25/00</b>	<b>Phosphorus; Compounds thereof</b> (C01B 21/00, C01B 23/00 take precedence; perphosphates C01B 15/16) [1, 3, 2006.01]
21/04	• Purification or separation of nitrogen (by liquefying F25J) [1, 2006.01]	25/01	• Treating phosphate ores or other raw phosphate materials to obtain phosphorus or phosphorus compounds [2, 2006.01]
21/06	• Binary compounds of nitrogen with metals, with silicon, or with boron [1, 2006.01]	25/02	• Preparation of phosphorus [1, 2006.01]
21/064	• • with boron [3, 2006.01]	25/023	• • of red phosphorus [2, 2006.01]
21/068	• • with silicon [3, 2006.01]	25/027	• • of yellow phosphorus [2, 2006.01]
21/072	• • with aluminium [3, 2006.01]	25/04	• Purification of phosphorus [1, 2006.01]
21/076	• • with titanium or zirconium [3, 2006.01]	25/043	• • of red phosphorus [2, 2006.01]
21/08	• Hydrazoic acid; Azides; Halogen azides [1, 2006.01]	25/047	• • of yellow phosphorus [2, 2006.01]
21/082	• Compounds containing nitrogen and non-metals (C01B 21/06, C01B 21/08 take precedence) [3, 2006.01]	25/06	• Hydrogen phosphides [1, 2006.01]
21/083	• • containing one or more halogen atoms [3, 2006.01]	25/08	• Other phosphides [1, 2006.01]
21/084	• • • containing also one or more oxygen atoms, e.g. nitrosyl halides [3, 2006.01]	25/10	• Halides or oxyhalides of phosphorus [1, 2, 2006.01]
21/086	• • containing one or more sulfur atoms [3, 2006.01]	25/12	• Oxides of phosphorus [1, 2006.01]
21/087	• • containing one or more hydrogen atoms [3, 2006.01]	25/14	• Sulfur, selenium, or tellurium compounds of phosphorus [1, 2006.01]
21/088	• • • containing also one or more halogen atoms [3, 2006.01]	25/16	• Oxyacids of phosphorus; Salts thereof (peroxyacids or salts thereof C01B 15/00) [1, 2006.01]
21/09	• • • • Halogeno-amines, e.g. chloramine [3, 2006.01]	25/163	• • Phosphorous acid; Salts thereof [2, 2006.01]
21/092	• • • containing also one or more metal atoms [3, 2006.01]	25/165	• • Hypophosphorous acid; Salts thereof [2, 2006.01]
21/093	• • • containing also one or more sulfur atoms [3, 2006.01]	25/168	• • Pyrophosphorous acid; Salts thereof [2, 2006.01]
21/094	• • • • Nitrosyl containing acids [3, 2006.01]	25/18	• • Phosphoric acid [1, 2006.01]
21/096	• • • • Amidosulfonic acid; Salts thereof [3, 2006.01]	25/20	• • • Preparation from elemental phosphorus or phosphoric anhydride [1, 2006.01]
21/097	• • containing phosphorus atoms [3, 2006.01]	25/22	• • • Preparation by reacting phosphate containing material with an acid, e.g. wet process [1, 2006.01]
21/098	• • • Phosphonitrilic dihalides; Polymers thereof [3, 2006.01]	25/222	• • • • with sulfuric acid, a mixture of acids mainly consisting of sulfuric acid or a mixture of compounds forming it <i>in situ</i> , e.g. a mixture of sulfur dioxide, water and oxygen [3, 2006.01]
21/12	• • • Carbamic acid; Salts thereof [1, 2006.01]	25/223	• • • • only one form of calcium sulfate being formed [3, 2006.01]

25/225	• • • • • Dihydrate process [3, 2006.01]	32/17	• • • • Purification [2017.01]
25/226	• • • • • Hemihydrate process [3, 2006.01]	32/172	• • • • Sorting [2017.01]
25/228	• • • • one form of calcium sulfate being formed and then converted to another form [3, 2006.01]	32/174	• • • • Derivatisation; Solubilisation; Dispersion in solvents [2017.01]
25/229	• • • • • Hemihydrate-dihydrate process [3, 2006.01]	32/176	• • • • Cutting [2017.01]
25/231	• • • • • Dihydrate-hemihydrate process [3, 2006.01]	32/178	• • • • Opening; Filling [2017.01]
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]	32/18	• • Nanoonions; Nanoscrolls; Nanohorns; Nanocones; Nanowalls [2017.01]
25/234	• • • Purification; Stabilisation; Concentration (purification concomitant with preparation C01B 25/22; preparation involving solvent-solvent extraction C01B 25/46) [3, 2006.01]	32/182	• • Graphene [2017.01]
25/235	• • • Clarification; Stabilisation to prevent post-precipitation of dissolved impurities [3, 2006.01]	32/184	• • • Preparation [2017.01]
25/237	• • • Selective elimination of impurities [3, 2006.01]	32/186	• • • by chemical vapour deposition [CVD] [2017.01]
25/238	• • • • Cationic impurities [3, 2006.01]	32/188	• • • by epitaxial growth [2017.01]
25/24	• • Condensed phosphoric acids [1, 2006.01]	32/19	• • • by exfoliation [2017.01]
25/26	• • Phosphates (perphosphates C01B 15/16) [1, 2006.01]	32/192	• • • • starting from graphitic oxides [2017.01]
25/28	• • • Ammonium phosphates [1, 2006.01]	32/194	• • • After-treatment [2017.01]
25/30	• • • Alkali metal phosphates [1, 2006.01]	32/196	• • • • Purification [2017.01]
25/32	• • • Phosphates of magnesium, calcium, strontium, or barium [1, 2006.01]	32/198	• • • Graphene oxide [2017.01]
25/34	• • • Magnesium phosphates [1, 2006.01]	32/20	• • Graphite [2017.01]
25/36	• • • Aluminium phosphates [1, 2006.01]	32/205	• • Preparation [2017.01]
25/37	• • • Phosphates of heavy metals [2, 2006.01]	32/21	• • After-treatment [2017.01]
25/38	• • • Condensed phosphates [1, 2006.01]	32/215	• • • Purification; Recovery or purification of graphite formed in iron making, e.g. kish graphite [2017.01]
25/39	• • • of alkali metals [3, 2006.01]	32/22	• • • Intercalation [2017.01]
25/40	• • • Polyphosphates [2, 2006.01]	32/225	• • • Expansion; Exfoliation [2017.01]
25/41	• • • • of alkali metals [3, 2006.01]	32/23	• • • Oxidation [2017.01]
25/42	• • • Pyrophosphates [2, 2006.01]	32/25	• • Diamond [2017.01]
25/44	• • • Metaphosphates [2, 2006.01]	32/26	• • Preparation (by using ultra-high pressure B01J 3/06; by crystal growth C30B 29/04) [2017.01]
25/445	• • • • of alkali metals [3, 2006.01]	32/28	• • After-treatment, e.g. purification, irradiation, separation or recovery [2017.01]
25/45	• • • containing plural metal, or metal and ammonium [3, 2006.01]	32/30	• Active carbon [2017.01]
25/455	• • • containing halogen [3, 2006.01]	32/306	• • with molecular sieve properties [2017.01]
25/46	• • Preparation involving solvent-solvent extraction [2, 2006.01]	32/312	• • Preparation [2017.01]
32/00	<b>Carbon; Compounds thereof</b> (C01B 21/00, C01B 23/00 take precedence; percarbonates C01B 15/10; carbon black C09C 1/48) [2017.01]	32/318	• • • characterised by the starting materials [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]	32/324	• • • from waste materials, e.g. tyres or spent sulfite pulp liquor [2017.01]
32/10	• Carbon fluorides, e.g. $[CF]_n$ or $[C_2F]_n$ (graphite intercalation thereof C01B 32/22) [2017.01]	32/33	• • • from distillation residues of coal or petroleum; from petroleum acid sludge [2017.01]
32/15	• Nanosized carbon materials [2017.01]	32/336	• • • characterised by gaseous activating agents [2017.01]
32/152	• • Fullerenes [2017.01]	32/342	• • • characterised by non-gaseous activating agents [2017.01]
32/154	• • • Preparation [2017.01]	32/348	• • • Metallic compounds [2017.01]
32/156	• • • After-treatment [2017.01]	32/354	• • After-treatment [2017.01]
32/158	• • Carbon nanotubes [2017.01]	32/36	• • • Reactivation or regeneration [2017.01]
32/159	• • • single-walled [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]
32/16	• • • Preparation [2017.01]	32/372	• • • Coating; Grafting; Microencapsulation [2017.01]
32/162	• • • characterised by catalysts [2017.01]	32/378	• • • Purification [2017.01]
32/164	• • • involving continuous processes [2017.01]	32/384	• • • Granulation [2017.01]
32/166	• • • in liquid phase [2017.01]		
32/168	• • • After-treatment [2017.01]		
			<b>Note(s) [2017.01]</b>
			In this group, the term “granulation” also covers methods of preparation of active carbon using carbonaceous precursors <i>per se</i> 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]	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]
32/55	• • Solidifying [2017.01]	33/037	• • Purification (by zone-melting C30B 13/00) [5, 2006.01]
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]	33/039	• • • by conversion of the silicon into a compound, optional purification of the compound, and reconversion into silicon [5, 2006.01]
32/70	• Compounds containing carbon and sulfur, e.g. thiophosgene [2017.01]	33/04	• Hydrides of silicon [1, 2006.01]
32/72	• • Carbon disulfide [2017.01]	33/06	• Metal silicides [1, 2006.01]
32/75	• • • Preparation by reacting sulfur or sulfur compounds with hydrocarbons [2017.01]	33/08	• Compounds containing halogen [1, 2006.01]
32/77	• • Carbon oxysulfide [2017.01]	33/10	• • Compounds containing silicon, fluorine, and other elements [1, 2006.01]
32/80	• Phosgene [2017.01]	33/107	• • Halogenated silanes [3, 2006.01]
32/90	• Carbides [2017.01]	33/113	• Silicon oxides; Hydrates thereof [3, 2006.01]
32/907	• • Oxycarbides; Sulfocarbides; Mixture of carbides [2017.01]	33/12	• • Silica; Hydrates thereof, e.g. lepidioic silicic acid [1, 3, 2006.01]
32/914	• • • Carbides of single elements [2017.01]	33/14	• • • Colloidal silica, e.g. dispersions, gels, sols [1, 3, 2006.01]
32/921	• • • Titanium carbide [2017.01]	33/141	• • • • Preparation of hydrosols or aqueous dispersions [3, 2006.01]
32/928	• • • Carbides of actinides [2017.01]	33/142	• • • • by acidic treatment of silicates [3, 2006.01]
32/935	• • • Carbides of alkali metals, strontium, barium or magnesium [2017.01]	33/143	• • • • of aqueous solutions of silicates [3, 2006.01]
32/942	• • • Calcium carbide [2017.01]	33/145	• • • • Preparation of hydroorganosols, organosols or dispersions in an organic medium [3, 2006.01]
32/949	• • • Tungsten or molybdenum carbides [2017.01]	33/146	• • • • After-treatment of sols (preparation of hydroorganosols, organosols or dispersions in an organic medium from hydrosols C01B 33/145) [3, 2006.01]
32/956	• • • Silicon carbide [2017.01]	33/148	• • • • Concentration; Drying; Dehydration; Stabilisation; Purification [3, 2006.01]
32/963	• • • • Preparation from compounds containing silicon [2017.01]	33/149	• • • • Coating [3, 2006.01]
32/97	• • • • Preparation from SiO or SiO <sub>2</sub> [2017.01]	33/151	• • • • by progressively adding a sol to a different sol, i.e. "build up" of particles using a "heel" [3, 2006.01]
32/977	• • • • Preparation from organic compounds containing silicon [2017.01]	33/152	• • • • Preparation of hydrogels [3, 2006.01]
32/984	• • • • Preparation from elemental silicon [2017.01]	33/154	• • • • by acidic treatment of aqueous silicate solutions [3, 2006.01]
32/991	• • • Boron carbide [2017.01]	33/155	• • • • Preparation of hydroorganogels or organogels [3, 2006.01]
<b>33/00</b>	<b>Silicon; Compounds thereof</b> (C01B 21/00, C01B 23/00 take precedence; persilicates C01B 15/14; carbides C01B 32/956) [1, 3, 2006.01]	33/157	• • • • After-treatment of gels [3, 2006.01]
33/02	• Silicon (forming single crystals or homogeneous polycrystalline material with defined structure C30B) [1, 5, 2006.01]	33/158	• • • • Purification; Drying; Dehydrating [3, 2006.01]
33/021	• • Preparation (chemical coating from the vapour phase C23C 16/00) [5, 2006.01]	33/159	• • • • Coating or hydrophobisation [3, 2006.01]
33/023	• • • by reduction of silica or silica-containing material [5, 2006.01]	33/16	• • • Preparation of silica xerogels [1, 3, 2006.01]
33/025	• • • with carbon or a solid carbonaceous material, i.e. carbo-thermal process [5, 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]
33/027	• • • by decomposition or reduction of gaseous or vaporised silicon compounds other than silica or silica-containing material [5, 2006.01]	33/187	• • • • by acidic treatment of silicates [3, 2006.01]
33/029	• • • by decomposition of monosilane [5, 2006.01]	33/193	• • • • of aqueous solutions of silicates [3, 2006.01]
33/03	• • • by decomposition of silicon halides or halosilanes or reduction thereof with hydrogen as the only reducing agent [5, 2006.01]	33/20	• Silicates (persilicates C01B 15/14) [1, 2006.01]
33/031	• • • • by decomposition of silicon tetraiodide [5, 2006.01]	33/22	• • Magnesium silicates [1, 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]	33/24	• • 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	<ul style="list-style-type: none"> <li>• having base-exchange properties but not having molecular sieve properties [6, 2006.01]</li> </ul>	
33/38	<ul style="list-style-type: none"> <li>• Layered base-exchange silicates, e.g. clays, micas or alkali metal silicates of kenyaite or magadiite type [6, 2006.01]</li> </ul>	
33/40	<ul style="list-style-type: none"> <li>• Clays [6, 2006.01]</li> </ul>	
33/42	<ul style="list-style-type: none"> <li>• Micas [6, 2006.01]</li> </ul>	
33/44	<ul style="list-style-type: none"> <li>• 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]</li> </ul>	
33/46	<ul style="list-style-type: none"> <li>• Amorphous silicates, e.g. so-called "amorphous zeolites" [6, 2006.01]</li> </ul>	
<b>35/00 Boron; Compounds thereof</b> (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	<ul style="list-style-type: none"> <li>• Boron; Borides [2, 2006.01]</li> </ul>	
35/04	<ul style="list-style-type: none"> <li>• Metal borides [2, 2006.01]</li> </ul>	
35/06	<ul style="list-style-type: none"> <li>• Boron halogen compounds [2, 2006.01]</li> </ul>	
35/08	<ul style="list-style-type: none"> <li>• Compounds containing boron and nitrogen, phosphorus, oxygen, sulfur, selenium or tellurium [2, 2006.01]</li> </ul>	
35/10	<ul style="list-style-type: none"> <li>• Compounds containing boron and oxygen (C01B 35/06 takes precedence) [2, 2006.01]</li> </ul>	
35/12	<ul style="list-style-type: none"> <li>• Borates [2, 2006.01]</li> </ul>	
35/14	<ul style="list-style-type: none"> <li>• Compounds containing boron and nitrogen, phosphorus, sulfur, selenium or tellurium [2, 2006.01]</li> </ul>	
35/16	<ul style="list-style-type: none"> <li>• Compounds containing direct bonding between two boron atoms, e.g. <math>\text{Cl}_2\text{B}-\text{BCl}_2</math> [2, 2006.01]</li> </ul>	
35/18	<ul style="list-style-type: none"> <li>• Compounds containing three or more boron atoms, e.g. <math>\text{NaB}_3\text{H}_8</math>, <math>\text{MgB}_{10}\text{Br}_{10}</math> (borazoles C01B 35/14) [2, 2006.01]</li> </ul>	

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

<b>37/00</b>	<b>Compounds having molecular sieve properties but not having base-exchange properties [6, 2006.01]</b>
37/02	<ul style="list-style-type: none"> <li>• Crystalline silica-polymorphs, e.g. silicalites [6, 2006.01]</li> </ul>
37/04	<ul style="list-style-type: none"> <li>• Aluminophosphates (APO compounds) [6, 2006.01]</li> </ul>
37/06	<ul style="list-style-type: none"> <li>• Aluminophosphates containing other elements, e.g. metals, boron [6, 2006.01]</li> </ul>
37/08	<ul style="list-style-type: none"> <li>• Silicoaluminophosphates (SAPO compounds) [6, 2006.01]</li> </ul>
<b>39/00</b>	<b>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]</b>

**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	<ul style="list-style-type: none"> <li>• 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]</li> </ul>
39/04	<ul style="list-style-type: none"> <li>• using at least one organic template directing agent, e.g. an ionic quaternary ammonium compound or an aminated compound [6, 2006.01]</li> </ul>
39/06	<ul style="list-style-type: none"> <li>• 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]</li> </ul>
39/08	<ul style="list-style-type: none"> <li>• the aluminium atoms being wholly replaced [6, 2006.01]</li> </ul>
39/10	<ul style="list-style-type: none"> <li>• the replacing atoms being phosphorus atoms [6, 2006.01]</li> </ul>
39/12	<ul style="list-style-type: none"> <li>• the replacing atoms being boron atoms [6, 2006.01]</li> </ul>
39/14	<ul style="list-style-type: none"> <li>• Type A [6, 2006.01]</li> </ul>
39/16	<ul style="list-style-type: none"> <li>• 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]</li> </ul>
39/18	<ul style="list-style-type: none"> <li>• 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]</li> </ul>
39/20	<ul style="list-style-type: none"> <li>• Faujasite type, e.g. type X or Y [6, 2006.01]</li> </ul>
39/22	<ul style="list-style-type: none"> <li>• Type X [6, 2006.01]</li> </ul>
39/24	<ul style="list-style-type: none"> <li>• Type Y [6, 2006.01]</li> </ul>
39/26	<ul style="list-style-type: none"> <li>• Mordenite type [6, 2006.01]</li> </ul>
39/28	<ul style="list-style-type: none"> <li>• Phillipsite or harmotome type, e.g. type B [6, 2006.01]</li> </ul>
39/30	<ul style="list-style-type: none"> <li>• Erionite or offretite type, e.g. zeolite T [6, 2006.01]</li> </ul>
39/32	<ul style="list-style-type: none"> <li>• Type L [6, 2006.01]</li> </ul>
39/34	<ul style="list-style-type: none"> <li>• Type ZSM-4 or type Ω [6, 2006.01]</li> </ul>
39/36	<ul style="list-style-type: none"> <li>• Pentasil type, e.g. types ZSM-5, ZSM-8 or ZSM-11 [6, 2006.01]</li> </ul>
39/38	<ul style="list-style-type: none"> <li>• Type ZSM-5 [6, 2006.01]</li> </ul>
39/40	<ul style="list-style-type: none"> <li>• using at least one organic template directing agent [6, 2006.01]</li> </ul>
39/42	<ul style="list-style-type: none"> <li>• Type ZSM-12 [6, 2006.01]</li> </ul>
39/44	<ul style="list-style-type: none"> <li>• Ferrierite type, e.g. types ZSM-21, ZSM-35 or ZSM-38 [6, 2006.01]</li> </ul>
39/46	<ul style="list-style-type: none"> <li>• Other types characterised by their X-ray diffraction pattern and their defined composition [6, 2006.01]</li> </ul>
39/48	<ul style="list-style-type: none"> <li>• using at least one organic template directing agent [6, 2006.01]</li> </ul>
39/50	<ul style="list-style-type: none"> <li>• Zeolites wherein inorganic bases or salts occlude channels in the lattice framework, e.g. sodalite, cancrinite, nosean, hauynite [6, 2006.01]</li> </ul>

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	<b>Oxides or hydroxides of sodium, potassium, or alkali metals in general [1, 2, 2006.01]</b>	7/02	• Preparation by double decomposition [1, 2006.01]
1/02	• Oxides [1, 2006.01]	7/04	• • with a fluoride or silico-fluoride (C01D 1/24 takes precedence) [1, 2006.01]
1/04	• Hydroxides [1, 2006.01]	7/06	• Preparation via sodium or potassium magnesium carbonate [1, 2006.01]
1/20	• Preparation by reacting oxides or hydroxides with alkali metal salts [1, 2006.01]	7/07	• Preparation from the hydroxides [2, 2006.01]
1/22	• • with carbonates or bicarbonates [1, 2006.01]	7/08	• Preparation from or via cyano compounds of sodium or potassium (C01D 1/26 takes precedence) [1, 2006.01]
1/24	• • from or via fluorides or silico-fluorides [1, 2006.01]	7/10	• Preparation of bicarbonates from carbonates (ammonia-soda process C01D 7/18) [1, 2006.01]
1/26	• Preparation from or via cyano compounds, e.g. cyanides, cyanamides [1, 2006.01]	7/12	• Preparation of carbonates from bicarbonates [1, 2006.01]
1/28	• Purification; Separation [1, 2006.01]	7/14	• Preparation of sesquicarbonates [1, 2006.01]
1/30	• • by crystallisation [1, 2006.01]	7/16	• Preparation from compounds of sodium or potassium with amines and carbon dioxide [1, 2006.01]
1/32	• • by adsorption or precipitation [1, 2006.01]	7/18	• Preparation by the ammonia-soda process [1, 2006.01]
1/34	• • with selective solvents [1, 2006.01]	7/22	• Purification [1, 2006.01]
1/36	• • by oxidation [1, 2006.01]	7/24	• • Crystallisation [1, 2006.01]
1/38	• • by dialysis [1, 2006.01]	7/26	• • by precipitation or adsorption [1, 2006.01]
1/40	• • by electrolysis [1, 2006.01]	7/28	• • with selective solvents [1, 2006.01]
1/42	• Concentration; Dehydration [1, 2006.01]	7/30	• • by oxidation [1, 2006.01]
1/44	• Preparation in the form of granules, pieces, or other shaped products [1, 2006.01]	7/32	• • by dialysis [1, 2006.01]
3/00	<b>Halides of sodium, potassium, or alkali metals in general [1, 2, 2006.01]</b>	7/34	• • by electrolysis [1, 2006.01]
3/02	• Fluorides [1, 2006.01]	7/35	• Varying the content of water of crystallisation or the specific gravity [2, 2006.01]
3/04	• Chlorides [1, 2006.01]	7/37	• Densifying sodium carbonate [2, 2006.01]
3/06	• Preparation by working up brines, seawater or spent lyes [1, 2006.01]	7/38	• Preparation in the form of granules, pieces, or other shaped products [1, 2006.01]
3/08	• Preparation by working up natural or industrial salt mixtures or siliceous minerals [1, 2006.01]	7/40	• Influencing the crystallisation process [1, 2006.01]
3/10	• Bromides [1, 2006.01]	7/42	• Preventing the absorption of moisture or caking [1, 2006.01]
3/12	• Iodides [1, 2006.01]	9/00	<b>Nitrates of sodium, potassium, or alkali metals in general [1, 2, 2006.01]</b>
3/14	• Purification [1, 2006.01]	9/02	• Preparation by working-up natural salt mixtures [1, 2006.01]
3/16	• • by precipitation or adsorption [1, 2006.01]	9/04	• Preparation with liquid nitric acid [1, 2006.01]
3/18	• • with selective solvents [1, 2006.01]	9/06	• Preparation with gaseous nitric acid or nitrogen oxides [1, 2006.01]
3/20	• • by melting [1, 2006.01]	9/08	• Preparation by double decomposition [1, 2006.01]
3/22	• Preparation in the form of granules, pieces, or other shaped products [1, 2006.01]	9/10	• • with ammonium nitrate [1, 2006.01]
3/24	• • Influencing the crystallisation process [1, 2006.01]	9/12	• • with nitrates of magnesium, calcium, strontium, or barium [1, 2006.01]
3/26	• Preventing the absorption of moisture or caking of the crystals [1, 2006.01]	9/14	• • of salts of potassium with sodium nitrate [1, 2006.01]
5/00	<b>Sulfates or sulfites of sodium, potassium, or alkali metals in general [1, 2, 2006.01]</b>	9/16	• Purification [1, 2006.01]
5/02	• Preparation of sulfates from alkali metal salts and sulfuric acid or bisulfates; Preparation of bisulfates [1, 2006.01]	9/18	• Preparation in the form of shaped products, e.g. granules [1, 2006.01]
5/04	• Preparation of sulfates with the aid of sulfurous acid or sulfites, e.g. Hargreaves process [1, 2006.01]	9/20	• Preventing the absorption of moisture or caking [1, 2006.01]
5/06	• Preparation of sulfates by double decomposition [1, 2006.01]	13/00	<b>Compounds of sodium or potassium not provided for elsewhere [2, 2006.01]</b>
5/08	• • with each other or with ammonium sulfate [1, 2006.01]	15/00	<b>Lithium compounds [2, 2006.01]</b>
5/10	• • with sulfates of magnesium, calcium, strontium, or barium [1, 2006.01]	15/02	• Oxides; Hydroxides [2, 2006.01]
5/12	• Preparation of double sulfates of magnesium with sodium or potassium [1, 2, 2006.01]	15/04	• Halides [2, 2006.01]
5/14	• Preparation of sulfites (C01D 5/04 takes precedence) [1, 2006.01]	15/06	• Sulfates; Sulfites [2, 2006.01]
5/16	• Purification [1, 2006.01]	15/08	• Carbonates; Bicarbonates [2, 2006.01]
5/18	• Dehydration [1, 2006.01]	15/10	• Nitrates [2, 2006.01]
7/00	<b>Carbonates of sodium, potassium, or alkali metals in general [1, 2, 2006.01]</b>	17/00	<b>Rubidium, caesium, or francium compounds [2, 2006.01]</b>

**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.

<b>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]</b>	7/02	• Aluminium oxide; Aluminium hydroxide; Aluminates [1, 2006.01]
	7/04	• Preparation of alkali metal aluminates; Aluminium oxide or hydroxide therefrom [1, 2006.01]
	7/06	• • by treating aluminous minerals with alkali hydroxide [1, 2006.01]
	7/08	• • by treating aluminous minerals with sodium carbonate [1, 2006.01]
	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]
	7/16	• Preparation of alkaline earth metal aluminates; Aluminium oxide or hydroxide therefrom [1, 2006.01]
	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 with acids or salts [1, 2006.01]
	7/22	• • with halides [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 of aluminium compounds [1, 2006.01]
	7/32	• • of sulfates [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]
	7/44	• Dehydration of aluminium hydroxide [1, 2006.01]
	7/46	• Purification of aluminium oxide, aluminium hydroxide or aluminates [1, 5, 2006.01]
	7/47	• • of aluminates [5, 2006.01]
	7/48	• Aluminium halides [1, 2006.01]
	7/50	• • Fluorides [1, 2006.01]
<b>3/00 Compounds of beryllium [1, 2006.01]</b>		
3/02		• Oxides; Hydroxides [3, 2006.01]
<b>5/00 Compounds of magnesium [1, 2006.01]</b>		
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]
<b>7/00 Compounds of aluminium [1, 2006.01]</b>		

7/52	• • • Double compounds containing both fluorine and other acid groups [1, 2006.01]	11/48	• Sulfites [1, 2006.01]
7/54	• • • Double compounds containing both aluminium and alkali metals or alkaline earth metals [1, 2006.01]	13/00	<b>Compounds of radium [1, 2006.01]</b>
7/56	• • Chlorides (containing fluorine C01F 7/52) [1, 3, 2006.01]	15/00	<b>Compounds of thorium [1, 2006.01]</b>
7/58	• • • Preparation of anhydrous aluminium chloride [1, 2006.01]	17/00	<b>Compounds of rare earth metals [1, 2006.01, 2020.01]</b>
7/60	• • • from oxygen-containing aluminium compounds [1, 2006.01]		<b>Note(s) [2020.01]</b>
7/62	• • • Purification [1, 2006.01]	1.	In this group, the following expression is used with the meaning indicated:
7/64	• • Bromides (containing fluorine C01F 7/52) [1, 3, 2006.01]		• "rare earth metals" means elements from the group of the lanthanides as well as scandium or yttrium, taken alone or in combination.
7/66	• Aluminium nitrates (containing fluorine C01F 7/52) [1, 3, 2006.01]	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.
7/68	• Aluminium compounds containing sulfur (containing fluorine C01F 7/52) [1, 3, 2006.01]	17/10	• Preparation or treatment, e.g. separation or purification [2020.01]
7/70	• • Sulfides [1, 2006.01]	17/13	• • by using ion exchange resins, e.g. chelate resins [2020.01]
7/72	• • Sulfites [1, 2006.01]	17/17	• • involving a liquid-liquid extraction [2020.01]
7/74	• • Sulfates [1, 2006.01]	17/20	• Compounds containing only rare earth metals as the metal element [2020.01]
7/76	• • • Double salts, e.g. alums [1, 2006.01]	17/206	• • oxide or hydroxide being the only anion [2020.01]
11/00	<b>Compounds of calcium, strontium, or barium (C01F 7/00 takes precedence) [1, 3, 2006.01]</b>	17/212	• • • Scandium oxides or hydroxides [2020.01]
11/02	• Oxides or hydroxides (production of lime C04B 2/00) [1, 2006.01]	17/218	• • • Yttrium oxides or hydroxides [2020.01]
11/04	• • by thermal decomposition [1, 2006.01]	17/224	• • • Oxides or hydroxides of lanthanides [2020.01]
11/06	• • • of carbonates [1, 2006.01]	17/229	• • • Lanthanum oxides or hydroxides [2020.01]
11/08	• • by reduction of sulfates [1, 2006.01]	17/235	• • • Cerium oxides or hydroxides [2020.01]
11/10	• • from sulfides [1, 2006.01]	17/241	• • • containing two or more rare earth metals, e.g. NdPrO <sub>3</sub> or LaNdPrO <sub>3</sub> [2020.01]
11/12	• • from silicates [1, 2006.01]	17/247	• • Carbonates [2020.01]
11/16	• • Purification [1, 2006.01]	17/253	• • Halides [2020.01]
11/18	• Carbonates [1, 2006.01]	17/259	• • • Oxyhalides [2020.01]
11/20	• Halides [1, 2006.01]	17/265	• • • Fluorides [2020.01]
11/22	• • Fluorides [1, 2006.01]	17/271	• • • Chlorides [2020.01]
11/24	• • Chlorides [1, 2006.01]	17/276	• • Nitrates [2020.01]
11/26	• • • from sulfides [1, 2006.01]	17/282	• • Sulfates [2020.01]
11/28	• • • by chlorination of alkaline earth metal compounds [1, 2006.01]	17/288	• • Sulfides [2020.01]
11/30	• • • Concentrating; Dehydrating; Preventing the absorption of moisture or caking [1, 2006.01]	17/294	• • • Oxsulfides [2020.01]
11/32	• • • Purification [1, 2006.01]	17/30	• Compounds containing rare earth metals and at least one element other than a rare earth metal, oxygen or hydrogen, e.g. La <sub>x</sub> S <sub>3</sub> Br <sub>6</sub> (C01F 17/247-C01F 17/294 take precedence) [2020.01]
11/34	• • Bromides [1, 2006.01]	17/32	• • oxide or hydroxide being the only anion, e.g. NaCeO <sub>2</sub> or Mg <sub>x</sub> Ca <sub>y</sub> EuO [2020.01]
11/36	• Nitrates [1, 2006.01]	17/34	• • • Aluminates, e.g. YAlO <sub>3</sub> or Y <sub>3</sub> , <sub>x</sub> Gd <sub>x</sub> Al <sub>5</sub> O <sub>12</sub> [2020.01]
11/38	• • Preparation with nitric acid or nitrogen oxides [1, 2006.01]	17/36	• • halogen being the only anion, e.g. NaYF <sub>4</sub> [2020.01]
11/40	• • Preparation by double decomposition with nitrates [1, 2006.01]	17/38	• • sulfur being the only anion, e.g. CaLa <sub>2</sub> S <sub>4</sub> [2020.01]
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]		

**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]**

- 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.
- Therapeutic activity of compounds is further classified in subclass A61P.

**Subclass index**

GENERAL METHODS OF PREPARATION.....	1/00
METALLIC COMPOUNDS, IN ALPHABETICAL ORDER OF THE SYMBOL FOR THE METAL	
Ag Silver.....	5/00
As Arsenic.....	28/00
Au Gold.....	7/00
Bi Bismuth.....	29/00
Cd Cadmium.....	11/00
Co Cobalt.....	51/00
Cr Chromium.....	37/00
Cu Copper.....	3/00
Fe Iron.....	49/00
Ga Gallium.....	15/00
Ge Germanium.....	17/00
Hf Hafnium.....	27/00
Hg Mercury.....	13/00
In Indium.....	15/00
Ir Iridium.....	55/00
Mn Manganese.....	45/00
Mo Molybdenum.....	39/00
Nb Niobium.....	33/00
Ni Nickel.....	53/00
Os Osmium.....	55/00
Pb Lead.....	21/00
Pd Palladium.....	55/00
Pt Platinum.....	55/00
Re Rhenium.....	47/00
Rh Rhodium.....	55/00
Ru Ruthenium.....	55/00
Sb Antimony.....	30/00
Sn Tin.....	19/00
Ta Tantalum.....	35/00
Ti Titanium.....	23/00
Tl Thallium.....	15/00
U Uranium.....	43/00
V Vanadium.....	31/00
W Tungsten.....	41/00
Zn Zinc.....	9/00
Zr Zirconium.....	25/00
COMPOUNDS OF TRANSURANIC ELEMENTS.....	56/00
COMPOUNDS OF METALS NOT COVERED BY THE PRECEDING GROUPS.....	99/00

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]	1/06	• Halides [1, 2006.01]
		1/08	• Nitrates [1, 2006.01]
		1/10	• Sulfates [1, 2006.01]
		1/12	• Sulfides [1, 2006.01]
1/02	• Oxides [1, 2006.01]	1/14	• Sulfites [1, 2006.01]
1/04	• Carbonyls [1, 2006.01]		

<b>3/00</b>	<b>Compounds of copper [1, 2006.01]</b>	<b>25/00</b>	<b>Compounds of zirconium [1, 2006.01]</b>
3/02	• Oxides; Hydroxides [1, 2006.01]	25/02	• Oxides [1, 2006.01]
3/04	• Halides [1, 2006.01]	25/04	• Halides [1, 2006.01]
3/05	• • Chlorides [3, 2006.01]	25/06	• Sulfates [1, 2006.01]
3/06	• • Oxychlorides [1, 2006.01]	<b>27/00</b>	<b>Compounds of hafnium [1, 2006.01]</b>
3/08	• Nitrates [1, 2006.01]	27/02	• Oxides [1, 2006.01]
3/10	• Sulfates [1, 2006.01]	27/04	• Halides [1, 2006.01]
3/12	• Sulfides [1, 2006.01]	27/06	• Sulfates [1, 2006.01]
3/14	• Complexes with ammonia [1, 2006.01]	<b>28/00</b>	<b>Compounds of arsenic [3, 2006.01]</b>
<b>5/00</b>	<b>Compounds of silver [1, 2006.01]</b>	28/02	• Arsenates; Arsenites [3, 2006.01]
5/02	• Halides [3, 2006.01]	<b>29/00</b>	<b>Compounds of bismuth [1, 2006.01]</b>
<b>7/00</b>	<b>Compounds of gold [1, 2006.01]</b>	<b>30/00</b>	<b>Compounds of antimony [3, 2006.01]</b>
<b>9/00</b>	<b>Compounds of zinc [1, 2006.01]</b>	30/02	• Antimonates; Antimonites [3, 2006.01]
9/02	• Oxides; Hydroxides [1, 3, 2006.01]	<b>31/00</b>	<b>Compounds of vanadium [1, 2006.01]</b>
9/03	• • Processes of production using dry methods, e.g. vapour phase processes [3, 2006.01]	31/02	• Oxides [3, 2006.01]
9/04	• Halides [1, 2006.01]	31/04	• Halides [3, 2006.01]
9/06	• Sulfates [1, 2006.01]	<b>33/00</b>	<b>Compounds of niobium [1, 2006.01]</b>
9/08	• Sulfides [1, 2006.01]	<b>35/00</b>	<b>Compounds of tantalum [1, 2006.01]</b>
<b>11/00</b>	<b>Compounds of cadmium [1, 2006.01]</b>	35/02	• Halides [3, 2006.01]
11/02	• Sulfides [3, 2006.01]	<b>37/00</b>	<b>Compounds of chromium [1, 2006.01]</b>
<b>13/00</b>	<b>Compounds of mercury [1, 2006.01]</b>	37/02	• Oxides or hydrates thereof [1, 2006.01]
13/02	• Oxides [1, 2006.01]	37/027	• • Chromium dioxide [3, 2006.01]
13/04	• Halides [1, 2006.01]	37/033	• • Chromium trioxide; Chromic acid [3, 2006.01]
<b>15/00</b>	<b>Compounds of gallium, indium, or thallium [1, 2006.01]</b>	37/04	• Chromium halides [1, 2006.01]
<b>17/00</b>	<b>Compounds of germanium [1, 2006.01]</b>	37/06	• • Chromylhalides [1, 2006.01]
17/02	• Germanium dioxide [1, 2006.01]	37/08	• Chromium sulfates [1, 2006.01]
17/04	• Halides of germanium [1, 2006.01]	37/10	• • Chrome alum [1, 2006.01]
<b>19/00</b>	<b>Compounds of tin [1, 2006.01]</b>	37/14	• Chromates; Bichromates [1, 2006.01]
19/02	• Oxides [1, 2006.01]	<b>39/00</b>	<b>Compounds of molybdenum [1, 2006.01]</b>
19/04	• Halides [1, 2006.01]	39/02	• Oxides; Hydroxides [3, 2006.01]
19/06	• • Stannous chloride [1, 2006.01]	39/04	• Halides [3, 2006.01]
19/08	• • Stannic chloride [1, 2006.01]	39/06	• Sulfides [3, 2006.01]
<b>21/00</b>	<b>Compounds of lead [1, 2006.01]</b>	<b>41/00</b>	<b>Compounds of tungsten [1, 2006.01]</b>
21/02	• Oxides [1, 2006.01]	41/02	• Oxides; Hydroxides [3, 2006.01]
21/04	• • Lead suboxide ( $Pb_2O$ ) [1, 2006.01]	41/04	• Halides [3, 2006.01]
21/06	• • Lead monoxide ( $PbO$ ) [1, 2006.01]	<b>43/00</b>	<b>Compounds of uranium [1, 2006.01]</b>
21/08	• • Lead dioxide ( $PbO_2$ ) [1, 2006.01]	43/01	• Oxides; Hydroxides [3, 2006.01]
21/10	• • Red lead ( $Pb_3O_4$ ) [1, 2006.01]	43/025	• • Uranium dioxide [3, 2006.01]
21/12	• Hydroxides [1, 2006.01]	43/04	• Halides of uranium [1, 2006.01]
21/14	• Carbonates [1, 2006.01]	43/06	• • Fluorides [1, 2006.01]
21/16	• Halides [1, 2006.01]	43/08	• • Chlorides [1, 2006.01]
21/18	• Nitrates [1, 2006.01]	43/10	• • Bromides [1, 2006.01]
21/20	• Sulfates [1, 2006.01]	43/12	• • Iodides [1, 2006.01]
21/21	• Sulfides [3, 2006.01]	<b>45/00</b>	<b>Compounds of manganese [1, 2006.01]</b>
21/22	• Plumbates; Plumbites [1, 2006.01]	45/02	• Oxides; Hydroxides [1, 2006.01]
<b>23/00</b>	<b>Compounds of titanium [1, 2006.01]</b>	45/04	• Carbonyls [1, 2006.01]
23/02	• Halides of titanium [1, 2006.01]	45/06	• Halides [1, 2006.01]
23/04	• Oxides; Hydroxides [1, 3, 2006.01]	45/08	• Nitrates [1, 2006.01]
23/047	• • Titanium dioxide [3, 2006.01]	45/10	• Sulfates [1, 2006.01]
23/053	• • • Producing by wet processes, e.g. hydrolysing titanium salts [3, 2006.01]	45/12	• Manganates; Permanganates [1, 2006.01]
23/07	• • • Producing by vapour phase processes, e.g. halide oxidation [3, 2006.01]	<b>47/00</b>	<b>Compounds of rhenium [1, 2006.01]</b>
23/08	• • • Drying; Calcining [1, 3, 2006.01]	<b>49/00</b>	<b>Compounds of iron [1, 2006.01]</b>
		49/02	• Oxides; Hydroxides [1, 2006.01]

49/04	• • Ferrous oxide (FeO) [1, 2006.01]	53/00	<b>Compounds of nickel [1, 2006.01]</b>
49/06	• • Ferric oxide (Fe <sub>2</sub> O <sub>3</sub> ) [1, 2006.01]	53/02	• Carbonyls [1, 2006.01]
49/08	• • Ferroso-ferric oxide (Fe <sub>3</sub> O <sub>4</sub> ) [1, 2006.01]	53/04	• Oxides; Hydroxides [1, 2006.01]
49/10	• Halides [1, 2006.01]	53/06	• Carbonates [1, 2006.01]
49/12	• Sulfides [1, 2006.01]	53/08	• Halides [1, 2006.01]
49/14	• Sulfates [1, 2006.01]	53/09	• • Chlorides [3, 2006.01]
49/16	• Carbonyls [1, 2006.01]	53/10	• Sulfates [1, 2006.01]
<b>51/00</b>	<b>Compounds of cobalt [1, 2006.01]</b>	53/11	• Sulfides [3, 2006.01]
51/02	• Carbonyls [1, 2006.01]	53/12	• Complexes with ammonia [1, 2006.01]
51/04	• Oxides; Hydroxides [1, 2006.01]	<b>55/00</b>	<b>Compounds of ruthenium, rhodium, palladium, osmium, iridium, or platinum [1, 2006.01]</b>
51/06	• Carbonates [1, 2006.01]	<b>56/00</b>	<b>Compounds of transuranic elements [1, 2006.01]</b>
51/08	• Halides [1, 2006.01]	<b>99/00</b>	<b>Subject matter not provided for in other groups of this subclass [2010.01]</b>
51/10	• Sulfates [1, 2006.01]		
51/12	• Complexes with ammonia [1, 2006.01]		