

**CPC****COOPERATIVE PATENT CLASSIFICATION****C01G****COMPOUNDS CONTAINING METALS NOT COVERED BY SUBCLASSES [C01D](#) OR [C01F](#)**

( metal hydrides { monoborane, diborane or addition complexes thereof } [C01B 6/00](#); salts of oxyacids of halogens [C01B 11/00](#); peroxides, salts or 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](#); { compounds containing nitrogen, other non-metals and metal [C01B 21/082](#) }; metal amides [C01B 21/092](#); nitrites [C01B 21/50](#); { compounds of noble gases [C01B 23/0005](#) }; phosphides [C01B 25/08](#); salts of oxyacids of phosphorus [C01B 25/16](#); carbides [C01B 31/30](#); 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 cyanamide [C01C 3/16](#); thiocyanates [C01C 3/20](#) )

**WARNING**

Groups [C01G 51/30](#) to [C01G 51/70](#) and [C01G 53/40](#) to [C01G 53/70](#) do not correspond to former or current IPC-groups. The concordance CPC : IPC is as follows: - [C01G 51/30](#) - 51/70 : [C01G 51/00](#) - [C01G 53/40](#) - 53/70 : [C01G 53/00](#)

**C01G 1/00**

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

[C01G 1/02](#)

. Oxides

[C01G 1/04](#)

. Carbonyls

[C01G 1/06](#)

. Halides

[C01G 1/08](#)

. Nitrates

[C01G 1/10](#)

. Sulfates

[C01G 1/12](#)

. Sulfides

[C01G 1/14](#)

. Sulfites

**C01G 3/00**

**Compounds of copper**

[C01G 3/003](#)

. { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }

[C01G 3/006](#)

. { Compounds containing, besides copper, two or more other elements, with the exception of oxygen or hydrogen }

- C01G 3/02 . Oxides; Hydroxides
- C01G 3/04 . Halides
- C01G 3/05 . . Chlorides
- C01G 3/06 . . Oxychlorides
- C01G 3/08 . Nitrates
- C01G 3/10 . Sulfates
- C01G 3/12 . Sulfides
- C01G 3/14 . Complexes with ammonia
- C01G 5/00           Compounds of silver**
- C01G 5/003 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
- C01G 5/006 . { Compounds containing, besides silver, two or more other elements, with the exception of oxygen or hydrogen }
- C01G 5/02 . Halides
- C01G 7/00           Compounds of gold**
- C01G 7/003 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
- C01G 7/006 . { Compounds containing, besides gold, two or more other elements, with the exception of oxygen or hydrogen }
- C01G 9/00           Compounds of zinc**
- C01G 9/003 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
- C01G 9/006 . { Compounds containing, besides zinc, two or more other elements, with the exception of oxygen or hydrogen }
- C01G 9/02 . Oxides; Hydroxides
- C01G 9/03 . . Processes of production using dry methods, e.g. vapour phase processes
- C01G 9/04 . Halides
- C01G 9/06 . Sulfates
- C01G 9/08 . Sulfides
- C01G 11/00          Compounds of cadmium**
- C01G 11/003 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }

C01G 11/006	. { Compounds containing, besides cadmium, two or more other elements, with the exception of oxygen or hydrogen }
C01G 11/02	. Sulfides
<b>C01G 13/00</b>	<b>Compounds of mercury</b>
C01G 13/003	. { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
C01G 13/006	. { Compounds containing, besides mercury, two or more other elements, with the exception of oxygen or hydrogen }
C01G 13/02	. Oxides
C01G 13/04	. Halides
<b>C01G 15/00</b>	<b>Compounds of gallium, indium or thallium</b>
C01G 15/003	. { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
C01G 15/006	. { Compounds containing, besides gallium, indium, or thallium, two or more other elements, with the exception of oxygen or hydrogen }
<b>C01G 17/00</b>	<b>Compounds of germanium</b>
C01G 17/003	. { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
C01G 17/006	. { Compounds containing, besides germanium, two or more other elements, with the exception of oxygen or hydrogen }
C01G 17/02	. Germanium dioxide
C01G 17/04	. Halides of germanium
<b>C01G 19/00</b>	<b>Compounds of tin</b>
C01G 19/003	. { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
C01G 19/006	. { Compounds containing, besides tin, two or more other elements, with the exception of oxygen or hydrogen }
C01G 19/02	. Oxides
C01G 19/04	. Halides
C01G 19/06	. . Stannous chloride
C01G 19/08	. . Stannic chloride
<b>C01G 21/00</b>	<b>Compounds of lead</b>

- C01G 21/003 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
- C01G 21/006 . { Compounds containing, besides lead, two or more other elements, with the exception of oxygen or hydrogen }
- C01G 21/02 . Oxides
- C01G 21/04 . . Lead suboxide ( $\text{Pb}_2\text{O}$ )
- C01G 21/06 . . Lead monoxide ( $\text{PbO}$ )
- C01G 21/08 . . Lead dioxide ( $\text{PbO}_2$ )
- C01G 21/10 . . Red lead ( $\text{Pb}_3\text{O}_4$ )
- C01G 21/12 . Hydroxides
- C01G 21/14 . Carbonates
- C01G 21/16 . Halides
- C01G 21/18 . Nitrates
- C01G 21/20 . Sulfates
- C01G 21/21 . Sulfides
- C01G 21/22 . Plumbates; Plumbites
- C01G 23/00** **Compounds of titanium** ({ preparation of Ti-compounds from ores or scraps [C22B 34/12](#) })
- C01G 23/001 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
- C01G 23/002 . { Compounds containing, besides titanium, two or more other elements, with the exception of oxygen or hydrogen ( [C01G 23/001](#) takes precedence ) }
- C01G 23/003 . { Titanates, e.g. titanates of two or more metals other than titanium ( [C01G 23/001](#) takes precedence ) }
- C01G 23/005 . . { Alkali titanates }
- C01G 23/006 . . { Alkaline earth titanates }
- C01G 23/007 . { Titanium sulfides ( [C01G 23/001](#) takes precedence ) }
- C01G 23/008 . { Titanium- and titanyl sulfate ( [C01G 23/001](#) takes precedence ) }
- C01G 23/02 . Halides of titanium
- C01G 23/022 . . { Titanium tetrachloride }
- C01G 23/024 . . . { Purification of tetrachloride }
- C01G 23/026 . . { Titanium trichloride }
- C01G 23/028 . . { Titanium fluoride }
- C01G 23/04 . Oxides; Hydroxides

- C01G 23/043 . . { Titanium sub-oxides }
- C01G 23/047 . . Titanium dioxide
- C01G 23/0475 . . . { Purification }
- C01G 23/053 . . . Producing by wet processes, e.g. hydrolysing titanium salts
- C01G 23/0532 . . . . { by hydrolysing sulfate-containing salts }
- C01G 23/0534 . . . . . { in the presence of seeds }
- C01G 23/0536 . . . . { by hydrolysing chloride-containing salts }
- C01G 23/0538 . . . . . { in the presence of seeds }
- C01G 23/07 . . . Producing by vapour phase processes, e.g. halide oxidation
- C01G 23/075 . . . . { Evacuation and cooling of the gaseous suspension containing the oxide;  
Desacidification and elimination of gases occluded in the separated oxide }
- C01G 23/08 . . . Drying; Calcining; { After treatment of titanium oxide }

## **C01G 25/00      Compounds of zirconium**

- C01G 25/003 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
- C01G 25/006 . { Compounds containing, besides zirconium, two or more other elements, with the exception of oxygen or hydrogen }
- C01G 25/02 . Oxides
- C01G 25/04 . Halides
- C01G 25/06 . Sulfates

## **C01G 27/00      Compounds of hafnium**

- C01G 27/003 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
- C01G 27/006 . { Compounds containing, besides hafnium, two or more other elements, with the exception of oxygen or hydrogen }
- C01G 27/02 . Oxides
- C01G 27/04 . Halides
- C01G 27/06 . Sulfates

## **C01G 28/00      Compounds of arsenic**

- C01G 28/001 . { Preparation involving a solvent-solvent extraction, an adsorption or an ion-exchange }
- C01G 28/002 . { Compounds containing, besides arsenic, two or more other elements, with the exception of oxygen or hydrogen ( [C01G 28/001](#) takes precedence ) }
- C01G 28/004 . . { containing halogen }

C01G 28/005 . { Oxides; Hydroxides; Oxyacids ( [C01G 28/001](#) takes precedence ) }

C01G 28/007 . { Halides ( [C01G 28/001](#) takes precedence ) }

C01G 28/008 . { Sulfides ( [C01G 28/001](#) takes precedence ) }

C01G 28/02 . Arsenates; Arsenites {( [C01G 28/001](#) takes precedence ) }

C01G 28/023 . . { of ammonium, alkali or alkaline-earth metals or magnesium }

C01G 28/026 . . { containing at least two metals }

## **C01G 29/00 Compounds of bismuth**

C01G 29/003 . { Preparations involving a liquid-liquid extraction, an adsorption or an ion-exchange }

C01G 29/006 . { Compounds containing, besides bismuth, two or more other elements, with the exception of oxygen or hydrogen }

## **C01G 30/00 Compounds of antimony**

C01G 30/001 . { Preparation involving a solvent-solvent extraction, an adsorption or an ion-exchange }

C01G 30/002 . { Compounds containing, besides antimony, two or more other elements, with the exception of oxygen or hydrogen ( [C01G 30/001](#) takes precedence ) }

C01G 30/003 . . { containing halogen }

C01G 30/004 . { Oxides; Hydroxides; Oxyacids ( [C01G 30/001](#) takes precedence ) }

C01G 30/005 . . { Oxides }

C01G 30/006 . { Halides ( [C01G 30/001](#) takes precedence ) }

C01G 30/007 . . { of binary type  $\text{SbX}_3$  or  $\text{SbX}_5$  with X representing a halogen, or mixed of the type  $\text{SbX}_3\text{X}'_2$  with X, X' representing different halogens }

C01G 30/008 . { Sulfides ( [C01G 30/001](#) takes precedence ) }

C01G 30/02 . Antimonates; Antimonites {( [C01G 30/001](#) takes precedence ) }

C01G 30/023 . . { of ammonium, alkali or alkaline-earth metals or magnesium }

C01G 30/026 . . { containing at least two metals }

## **C01G 31/00 Compounds of vanadium**

C01G 31/003 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }

C01G 31/006 . { Compounds containing, besides vanadium, two or more other elements, with the exception of oxygen or hydrogen }

C01G 31/02 . Oxides

C01G 31/04 . Halides

**C01G 33/00**      **Compounda of niobium**

- C01G 33/003      . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
- C01G 33/006      . { Compounds containing, besides niobium, two or more other elements, with the exception of oxygen or hydrogen }

**C01G 35/00**      **Compounds of tantalum**

- C01G 35/003      . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
- C01G 35/006      . { Compounds containing, besides tantalum, two or more other elements, with the exception of oxygen or hydrogen }
- C01G 35/02      . Halides

**C01G 37/00**      **Compounds of chromium**

- C01G 37/003      . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
- C01G 37/006      . { Compounds containing, besides chromium, two or more other elements, with the exception of oxygen or hydrogen }
- C01G 37/02      . Oxides or hydrates thereof
- C01G 37/027      . . Chromium dioxide
- C01G 37/033      . . Chromium trioxide; Chromic acid
- C01G 37/04      . Chromium halides
- C01G 37/06      . . Chromylhalides
- C01G 37/08      . Chromium sulfates
- C01G 37/10      . . Chrome alum
- C01G 37/14      . Chromates; Bichromates

**C01G 39/00**      **Compounds of molybdenum**

- C01G 39/003      . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
- C01G 39/006      . { Compounds containing, besides molybdenum, two or more other elements, with the exception of oxygen or hydrogen }
- C01G 39/02      . Oxides; Hydroxides
- C01G 39/04      . Halides
- C01G 39/06      . Sulfides

**C01G 41/00****Compounds of tungsten**

- C01G 41/003 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
- C01G 41/006 . { Compounds containing, besides tungsten, two or more other elements, with the exception of oxygen or hydrogen }
- C01G 41/02 . Oxides; Hydroxides
- C01G 41/04 . Halides

**C01G 43/00****Compounds of uranium**

- C01G 43/003 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
- C01G 43/006 . { Compounds containing, besides uranium, two or more other elements, with the exception of oxygen or hydrogen }
- C01G 43/01 . Oxides; Hydroxides
- C01G 43/025 .. Uranium dioxide
- C01G 43/04 . Halides of uranium
- C01G 43/06 .. Fluorides
- C01G 43/063 ... { Hexafluoride (UF<sub>6</sub>) }
- C01G 43/066 .... { Preparation }
- C01G 43/08 .. Chlorides
- C01G 43/10 .. Bromides
- C01G 43/12 .. Iodides

**C01G 45/00****Compounds of manganese**

- C01G 45/003 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
- C01G 45/006 . { Compounds containing, besides manganese, two or more other elements, with the exception of oxygen or hydrogen ( manganates, manganites or permanganates [C01G 45/12](#) ) }
- C01G 45/02 . Oxides; Hydroxides
- C01G 45/04 . Carbonyls
- C01G 45/06 . Halides
- C01G 45/08 . Nitrates
- C01G 45/10 . Sulfates
- C01G 45/12 . Manganates { manganites or } permanganates

- C01G 45/1207 .. { Permanganates ([MnO<sub>4</sub>]<sup>-</sup>) or manganates ([MnO<sub>4</sub>]<sup>2-</sup>)
- C01G 45/1214 ... { containing alkali metals }
- C01G 45/1221 .. { Manganates or manganites with a manganese oxidation state of Mn(III), Mn(IV) or mixtures thereof }
- C01G 45/1228 ... { of the type [MnO<sub>2</sub>]<sup>n-</sup>, e.g. LiMnO<sub>2</sub>, Li[MxMn<sub>1-x</sub>]O<sub>2</sub> }
- C01G 45/1235 ... { of the type [Mn<sub>2</sub>O<sub>4</sub>]<sup>2-</sup>, e.g. Li<sub>2</sub>Mn<sub>2</sub>O<sub>4</sub>, Li<sub>2</sub>[MxMn<sub>2-x</sub>]O<sub>4</sub> }
- C01G 45/1242 ... { of the type [Mn<sub>2</sub>O<sub>4</sub>]<sup>-</sup>, e.g. LiMn<sub>2</sub>O<sub>4</sub>, Li[MxMn<sub>2-x</sub>]O<sub>4</sub> }
- C01G 45/125 ... { of the type [MnO<sub>3</sub>]<sup>n-</sup>, e.g. Li<sub>2</sub>MnO<sub>3</sub>, Li<sub>2</sub>[MxMn<sub>1-x</sub>]O<sub>3</sub>, (La,Sr)MnO<sub>3</sub> }
- C01G 45/1257 .... { containing lithium, e.g. Li<sub>2</sub>MnO<sub>3</sub>, Li<sub>2</sub>[MxMn<sub>1-x</sub>]O<sub>3</sub> }
- C01G 45/1264 .... { containing rare earth, e.g. La<sub>1-x</sub>CaxMnO<sub>3</sub>, LaMnO<sub>3</sub> }
- C01G 45/1271 ... { of the type [Mn<sub>2</sub>O<sub>8</sub>]<sup>n-</sup>, e.g. (LaSr<sub>3</sub>)Mn<sub>2</sub>O<sub>8</sub> }
- C01G 45/1278 ... { of the type [Mn<sub>2</sub>O<sub>7</sub>]<sup>n-</sup>, e.g. (Sr<sub>2-x</sub>Ndx)Mn<sub>2</sub>O<sub>7</sub>, Ti<sub>2</sub>Mn<sub>2</sub>O<sub>7</sub> }
- C01G 45/1285 ... { of the type [Mn<sub>2</sub>O<sub>5</sub>]<sup>n-</sup> }
- C01G 45/1292 ... { of the type [Mn<sub>5</sub>O<sub>12</sub>]<sup>n-</sup> }

## **C01G 47/00**      **Compounds of rhenium**

- C01G 47/003 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
- C01G 47/006 . { Compounds containing, besides rhenium, two or more other elements, with the exception of oxygen or hydrogen }

## **C01G 49/00**      **Compounds of iron**

- C01G 49/0009 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
- C01G 49/0018 . { Mixed oxides or hydroxides, e.g. ferrites ( [C01G 49/0009](#) takes precedence ) }
- C01G 49/0027 .. { containing one alkali metal }
- C01G 49/0036 .. { containing one alkaline earth metal, magnesium or lead }
- C01G 49/0045 .. { containing aluminium }
- C01G 49/0054 .. { containing one rare earth metal, yttrium or scandium }
- C01G 49/0063 .. { containing zinc }
- C01G 49/0072 .. { containing manganese }
- C01G 49/0081 .. { containing iron in unusual valence state ( IV, V, VI ), e.g. ferrates }
- C01G 49/009 . { Compounds containing, besides iron, two or more other elements, with the exception of oxygen or hydrogen }
- C01G 49/02 . Oxides; Hydroxides {( [C01G 49/0018](#) takes precedence ) }
- C01G 49/04 .. Ferrous oxide (FeO)
- C01G 49/06 .. Ferric oxide (Fe<sub>2</sub>O<sub>3</sub>)
- C01G 49/08 .. Ferroso-ferric oxide (Fe<sub>3</sub>O<sub>4</sub>)
- C01G 49/10 . Halides {( [C01G 49/0018](#) takes precedence ) }
- C01G 49/12 . Sulfides {( [C01G 49/0018](#) takes precedence ) }

C01G 49/14 . Sulfates {( [C01G 49/0018](#) takes precedence )}

C01G 49/16 . Carbonyls {( [C01G 49/0018](#) takes precedence )}

## **C01G 51/00 Compounds of cobalt**

C01G 51/003 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }

C01G 51/006 . { Compounds containing, besides cobalt, two or more other elements, with the exception of oxygen or hydrogen ( cobaltates [C01G 51/40](#) )}

C01G 51/02 . Carbonyls

C01G 51/04 . Oxides; Hydroxides

C01G 51/06 . Carbonates

C01G 51/08 . Halides

C01G 51/085 .. { Chlorides }

C01G 51/10 . Sulfates

C01G 51/12 . Complexes with ammonia

C01G 51/30 . { Sulfides }

C01G 51/40 . { Cobaltates }

C01G 51/42 .. { containing alkali metals, e.g.  $\text{LiCoO}_2$  }

C01G 51/44 ... { containing manganese }

C01G 51/50 .... { of the type  $[\text{MnO}_2]_n^-$ , e.g.  $\text{Li}(\text{Co}_x\text{Mn}_{1-x})\text{O}_2$ ,  $\text{Li}(\text{MyCo}_x\text{Mn}_{1-x-y})\text{O}_2$  }

C01G 51/52 .... { of the type  $[\text{Mn}_2\text{O}_4]^{2-}$ , e.g.  $\text{Li}_2(\text{Co}_x\text{Mn}_{2-x})\text{O}_4$ ,  $\text{Li}_2(\text{MyCo}_x\text{Mn}_{2-x-y})\text{O}_4$  }

C01G 51/54 .... { of the type  $[\text{Mn}_2\text{O}_4]^-$ , e.g.  $\text{Li}(\text{Co}_x\text{Mn}_{2-x})\text{O}_4$ ,  $\text{Li}(\text{MyCo}_x\text{Mn}_{2-x-y})\text{O}_4$  }

C01G 51/56 .... { of the type  $[\text{MnO}_3]^{2-}$ , e.g.  $\text{Li}_2[\text{Co}_x\text{Mn}_{1-x}\text{O}_3]$ ,  $\text{Li}_2[\text{MyCo}_x\text{Mn}_{1-x-y}\text{O}_3]$  }

C01G 51/58 .... { of the type  $[\text{Mn}_2\text{O}_8]_n^-$  }

C01G 51/60 .... { of the type  $[\text{Mn}_2\text{O}_7]_n^-$  }

C01G 51/62 .... { of the type  $[\text{Mn}_2\text{O}_5]_n^-$  }

C01G 51/64 .... { of the type  $[\text{Mn}_5\text{O}_{12}]_n^-$  }

C01G 51/66 .. { containing alkaline earth metals, e.g.  $\text{SrCoO}_3$  }

C01G 51/68 ... { containing rare earth, e.g.  $\text{La}_{0.3}\text{Sr}_{0.7}\text{CoO}_3$  }

C01G 51/70 .. { containing rare earth, e.g.  $\text{LaCoO}_3$  ( [C01G 51/68](#) takes precedence )}

## **C01G 53/00 Compounds of nickel**

C01G 53/003 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }

C01G 53/006 . { Compounds containing, besides nickel, two or more other elements, with the exception of oxygen or hydrogen ( nickelates [C01G 53/40](#) )}

- C01G 53/02 . Carbonyls
- C01G 53/04 . Oxides; Hydroxides
- C01G 53/06 . Carbonates
- C01G 53/08 . Halides
- C01G 53/09 . . Chlorides
- C01G 53/10 . Sulfates
- C01G 53/11 . Sulfides
- C01G 53/12 . Complexes with ammonia
- C01G 53/40 . { Nickelates }

**WARNING**

Groups [C01G 53/40](#) to [C01G 53/70](#) are not complete pending a reorganisation, see also [C01G 53/006](#) and [C01G 53/00](#)

- C01G 53/42 . . { containing alkali metals, e.g.  $\text{LiNiO}_2$  }
- C01G 53/44 . . . { containing manganese }
- C01G 53/50 . . . . { of the type  $[\text{MnO}_2]^{n-}$ , e.g.  $\text{Li}(\text{Ni}_x\text{Mn}_{1-x})\text{O}_2$ ,  $\text{Li}(\text{MyNi}_x\text{Mn}_{1-x-y})\text{O}_2$  }
- C01G 53/52 . . . . { of the type  $[\text{Mn}_2\text{O}_4]^{2-}$ , e.g.  $\text{Li}_2(\text{Ni}_x\text{Mn}_{2-x})\text{O}_4$ ,  $\text{Li}_2(\text{MyNi}_x\text{Mn}_{2-x-y})\text{O}_4$  }
- C01G 53/54 . . . . { of the type  $[\text{Mn}_2\text{O}_4]^-$ , e.g.  $\text{Li}(\text{Ni}_x\text{Mn}_{2-x})\text{O}_4$ ,  $\text{Li}(\text{MyNi}_x\text{Mn}_{2-x-y})\text{O}_4$  }
- C01G 53/56 . . . . { of the type  $[\text{MnO}_3]^{2-}$ , e.g.  $\text{Li}_2[\text{Ni}_x\text{Mn}_{1-x}\text{O}_3]$ ,  $\text{Li}_2[\text{MyNi}_x\text{Mn}_{1-x-y}\text{O}_3]$  }
- C01G 53/58 . . . . { of the type  $[\text{Mn}_2\text{O}_8]^{n-}$  }
- C01G 53/60 . . . . { of the type  $[\text{Mn}_2\text{O}_7]^{n-}$  }
- C01G 53/62 . . . . { of the type  $[\text{Mn}_2\text{O}_5]^{n-}$  }
- C01G 53/64 . . . . { of the type  $[\text{Mn}_5\text{O}_{12}]^{n-}$  }
- C01G 53/66 . . { containing alkaline earth metals, e.g.  $\text{SrNiO}_3$ ,  $\text{SrNiO}_2$  }
- C01G 53/68 . . . { containing rare earth, e.g.  $\text{La}_{1.62}\text{Sr}_{0.38}\text{NiO}_4$  }
- C01G 53/70 . . { containing rare earth, e.g.  $\text{LaNiO}_3$  ( [C01G 53/68](#) takes precedence ) }

**C01G 55/00 Compounds of ruthenium, rhodium, palladium, osmium, iridium, or platinum**

- C01G 55/001 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }
- C01G 55/002 . { Compounds containing, besides ruthenium, rhodium, palladium, osmium, iridium, or platinum, two or more other elements, with the exception of oxygen or hydrogen ( [C01G 55/007](#) takes precedence ) }
- C01G 55/004 . { Oxides; Hydroxides }
- C01G 55/005 . { Halides }
- C01G 55/007 . { Compounds containing at least one carbonyl group }

C01G 55/008 . . { Carbonyls }

**C01G 56/00 Compounds of transuranic elements**

C01G 56/001 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }

C01G 56/002 . . { by adsorption or by ion-exchange on a solid support }

C01G 56/003 . { Compounds comprising, besides transuranic elements, two or more other elements, with the exception of oxygen or hydrogen ( [C01G 56/001](#) takes precedence ) }

C01G 56/004 . { Compounds of plutonium ( [C01G 56/001](#) takes precedence ) }

C01G 56/005 . . { Oxides; Hydroxides }

C01G 56/006 . . { Halides }

C01G 56/007 . { Compounds of transuranic elements ( [C01G 56/001](#) and [C01G 56/004](#) take precedence ) }

C01G 56/008 . . { Compounds of neptunium }

C01G 56/009 . . { Compounds of americium }

**C01G 99/00 Subject matter not provided for in other groups of this subclass**

C01G 99/003 . { Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange }

C01G 99/006 . { Compounds containing, besides a metal not provided for elsewhere in this subclass, two or more other elements other than oxygen or hydrogen ( [C01G 99/003](#) takes precedence ) }