

**CPC****COOPERATIVE PATENT CLASSIFICATION****C01D**

**COMPOUNDS OF ALKALI METALS, i.e. LITHIUM, SODIUM, POTASSIUM, RUBIDIUM, CAESIUM, OR FRANCIUM** (metal hydrides { monoborane, diborane or addition complexes thereof} [C01B 6/00](#); salts of oxyacids of halogens [C01B 11/00](#); peroxides, salts of peroxyacids [C01B 15/00](#); sulfides [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](#); { compounds other than ammonia and cyanogen, containing nitrogen and other non-metals [C01B 21/082](#)}; metal amides [C01B 21/092](#); nitrites [C01B 21/50](#); phosphides [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](#); cyanides [C01C 3/08](#); salts of cyanic acid [C01C 3/14](#); salts of cyanamide [C01C 3/16](#); thiocyanates [C01C 3/20](#))

**C01D 1/00****Oxides or hydroxides of sodium, potassium or alkali metals in general**

C01D 1/02

. Oxides

C01D 1/04

. Hydroxides

C01D 1/20

.. Preparation by reacting oxides or hydroxides with alkali metal salts

C01D 1/22

... with carbonates or bicarbonates

C01D 1/24

... from or via fluorides or silico-fluorides

C01D 1/26

.. Preparation from or via cyano compounds, e.g. cyanides, cyanamides

C01D 1/28

.. Purification; Separation

C01D 1/30

... by crystallisation

C01D 1/32

... by absorption or precipitation

C01D 1/34

... with selective solvents

C01D 1/36

... by oxidation

C01D 1/38

... by dialysis

C01D 1/40

... by electrolysis

C01D 1/42

.. Concentration; Dehydration

C01D 1/44

.. Preparation in the form of granules, pieces, or other shaped products

**C01D 3/00****Halides of sodium, potassium or alkali metals in general** {(halides in general [C01B 9/00](#))}

C01D 3/02

. Fluorides

C01D 3/04

. Chlorides

C01D 3/06

.. Preparation by working up brines; seawater or spent lyes

C01D 3/08

.. Preparation by working up natural or industrial salt mixtures or siliceous minerals

C01D 3/10

. Bromides

C01D 3/12

. Iodides

C01D 3/14

. Purification

- C01D 3/145 . . {by solid ion-exchangers or solid chelating agents}
- C01D 3/16 . . by precipitation or adsorption {(C01D 3/145 takes precedence)}
- C01D 3/18 . . with selective solvents
- C01D 3/20 . . by melting
- C01D 3/22 . Preparation in the form of granules, pieces, or other shaped products
- C01D 3/24 . . Influencing the crystallisation process
- C01D 3/26 . Preventing the absorption of moisture or caking of the crystals

**C01D 5/00****Sulfates or sulfites of sodium, potassium or alkali metals in general {(sulfites in general C01B 17/62)}**

- C01D 5/002 . {Preventing the absorption of moisture or caking of the crystals by additives}
- C01D 5/004 . {Preparation in the form of granules, pieces or other shaped products}
- C01D 5/006 . {Recovery of sodium sulfate from coagulation baths for the spinning of viscose}
- C01D 5/008 . {Preparation of potassium sulfate from alunite}
- C01D 5/02 . Preparation of sulfates from alkali metal salts and sulfuric acid or bisulfates; Preparation of bisulfates
- C01D 5/04 . Preparation of sulfates with the aid of sulfurous acid or sulfites, e.g. Hargreaves process {(pyrosulfites or metabisulfites C01D 5/145)}
- C01D 5/06 . Preparation of sulfates by double decomposition
- C01D 5/08 . . with each other or with ammonium sulfate
- C01D 5/10 . . with sulfates of magnesium, calcium, strontium, or barium
- C01D 5/12 . Preparation of double sulfates of magnesium with sodium or potassium
- C01D 5/14 . Preparation of sulfites (C01D 5/04 takes precedence)
- C01D 5/145 . . {Pyrosulfites or metabisulfites}
- C01D 5/16 . Purification {(C01D 5/145 takes precedence)}
- C01D 5/18 . Dehydration {(C01D 5/145 takes precedence)}

**C01D 7/00****Carbonates of sodium, potassium or alkali metals in general**

- C01D 7/02 . Preparation by double decomposition
- C01D 7/04 . . with a fluoride or silico-fluoride (C01D 1/24 takes precedence)
- C01D 7/06 . Preparation via sodium or potassium magnesium carbonate
- C01D 7/07 . Preparation from the hydroxides
- C01D 7/08 . Preparation from or via cyano compounds of sodium or potassium (C01D 1/26 takes precedence)
- C01D 7/10 . Preparation of bicarbonates from carbonates (ammonia soda process C01D 7/18)
- C01D 7/12 . Preparation of carbonates from bicarbonates {or bicarbonate-containing product}
- C01D 7/123 . . {by thermal decomposition of solids in the absence of a liquid medium}
- C01D 7/126 . . {Multi-step processes, e.g. from trona to soda ash}
- C01D 7/14 . Preparation of sesquicarbonates
- C01D 7/16 . Preparation from compounds of sodium or potassium with amines and carbon dioxide
- C01D 7/18 . Preparation by the ammonia-soda process {(C01D 7/12 takes precedence)}
- C01D 7/22 . Purification

C01D 7/24	.. Crystallisation
C01D 7/26	.. by precipitation or adsorption
C01D 7/28	.. with selective solvents
C01D 7/30	.. by oxidation
C01D 7/32	.. by dialysis
C01D 7/34	.. by electrolysis
C01D 7/35	. Varying the content of water of crystallisation or the specific gravity {(calcination <a href="#">B01J 6/00</a> , <a href="#">F27B</a> )}
C01D 7/37	.. Densifying sodium carbonate
C01D 7/38	. Preparation in the form of granules, pieces or other shaped products
C01D 7/40	.. influencing the crystallisation process
C01D 7/42	. Preventing the absorption of moisture or caking
<b>C01D 9/00</b>	<b>Nitrates of sodium, potassium or alkali metals in general</b> {(preparation as fertilizers or of fertilizers containing them <a href="#">C05D 5/00</a> )}
C01D 9/02	. Preparation by working-up natural salt mixtures
C01D 9/04	. Preparation with liquid nitric acid
C01D 9/06	. Preparation with gaseous nitric acid or nitrogen oxides
C01D 9/08	. Preparation by double decomposition
C01D 9/10	.. with ammonium nitrate
C01D 9/12	.. with nitrates or magnesium, calcium, strontium, or barium
C01D 9/14	.. of salts of potassium with sodium nitrate
C01D 9/16	. Purification
C01D 9/18	. Preparation in the form of shaped products, e.g. granules
C01D 9/20	. Preventing the absorption of moisture or caking
<b>C01D 13/00</b>	<b>Compounds of sodium or potassium not provided for elsewhere</b>
<b>C01D 15/00</b>	<b>Lithium compounds</b>
C01D 15/005	. {Lithium hexafluorophosphate}
C01D 15/02	. Oxides; Hydroxides
C01D 15/04	. Halides
C01D 15/06	. Sulfates; Sulfites
C01D 15/08	. Carbonates; Bicarbonates
C01D 15/10	. Nitrates
<b>C01D 17/00</b>	<b>Rubidium, caesium or francium compounds</b>
C01D 17/003	. {Compounds of alkali metals}
C01D 17/006	.. {Preparation of potassium compounds comprising precipitating potassium ions by an organic reagent or extracting them by a liquid organic phase}