SECTION B — PERFORMING OPERATIONS; TRANSPORTING

B03 SEPARATION OF SOLID MATERIALS USING LIQUIDS OR USING PNEUMATIC TABLES OR JIGS; MAGNETIC OR ELECTROSTATIC SEPARATION OF SOLID MATERIALS FROM SOLID MATERIALS OR FLUIDS; SEPARATION BY HIGH-VOLTAGE ELECTRIC FIELDS

B03C MAGNETIC OR ELECTROSTATIC SEPARATION OF SOLID MATERIALS FROM SOLID MATERIALS OR FLUIDS; SEPARATION BY HIGH-VOLTAGE ELECTRIC FIELDS (filters making use of electricity or magnetism B01D 35/06; separating isotopes B01D 59/00; combinations of magnetic or electrostatic separation with separation of solids by other means B03B, B07B; separating sheets from piles B65H 3/00; magnets or magnet coils per se H01F) **[5]**

1/00 Magnetic separation

1/005 • Pretreatment specially adapted for magnetic separation **[6]**

1/01 • • by addition of magnetic adjuvants **[6]**

1/015 • • by chemical treatment imparting magnetic properties to the material to be separated, e.g. roasting, reduction, oxidation **[6]**

1/02 • acting directly on the substance being separated **[5]**

1/021 • • Separation using Meissner effect, i.e. deflection of superconductive particles in a magnetic field **[6]**

1/023 • • Separation using Lorentz force, i.e. deflection of electrically charged particles in a magnetic field **[6]**

1/025 • • High gradient magnetic separators **[5]**

1/027 • • • with reciprocating canisters **[6]**

1/029 • • • with circulating matrix or matrix elements (matrix elements B03C 1/034) **[6]**

1/03 • • • • rotating, e.g. of the carousel type **[5, 6]**

1/031 • • • Component parts; Auxiliary operations **[6]**

1/032 • • • • Matrix cleaning systems **[6]**

1/033 • • • • characterised by the magnetic circuit **[6]**

1/034 • • • • • characterised by the matrix elements **[6]**

1/035 • • Open gradient magnetic separators, i.e. separators in which the gap is unobstructed, characterised by the configuration of the gap **[5]**

1/0355 • • • using superconductive coils **[6]**

1/04 • • with the material carriers in the form of trays or with tables

1/06 • • • with magnets moving during operation

1/08 • • • with non-movable magnets

1/10 • • with cylindrical material carriers (B03C 1/247 takes precedence) **[6]**

1/12 • • • with magnets moving during operation; with movable pole pieces

1/14 • • • with non-movable magnets

1/16 • • with material carriers in the form of belts

1/18 • • • with magnets moving during operation

1/20 • • • • in the form of belts, e.g. cross-belt type

1/22 • • • with non-movable magnets

1/23 • • with material carried by oscillating fields; with material carried by travelling fields, e.g. generated by stationary magnetic coils; Eddy-current separators, e.g. sliding ramp **[5]**

1/24 • • • with material carried by travelling fields **[5]**

1/247 • • • • obtained by a rotating magnetic drum **[6]**

1/253 • • • • obtained by a linear motor **[6]**

1/26 • • with free falling material (B03C 1/035 takes precedence) **[5]**

1/28 • • Magnetic plugs and dipsticks

1/30 • • Combinations with other devices, not otherwise provided for

1/32 • acting on the medium containing the substance being separated, e.g. magneto-gravimetric-, magnetohydrostatic-, or magnetohydrodynamic separation **[5]**

3/00 Separating dispersed particles from gases or vapour, e.g. air, by electrostatic effect (exhaust or silencing apparatus for machines or engines having means for removing solid constituents of exhaust, using electric or electrostatic separators F01N 3/01)

3/01 • Pretreatment of the gases prior to electrostatic precipitation

3/011 • • Prefiltering; Flow controlling **[6]**

3/013 • • Conditioning by chemical additives, e.g. with SO_3 **[6]**

3/014 • • Addition of water; Heat exchange, e.g. by condensation **[6]**

3/016 • • by acoustic or electromagnetic energy, e.g. ultra-violet light **[6]**

3/017 • Combinations of electrostatic separation with other processes, not otherwise provided for **[6]**

3/019 • Post-treatment of gases **[6]**

3/02 • Plant or installations having external electricity supply (electrode constructions B03C 3/40)

3/04 • • dry type

3/06 • • • characterised by presence of stationary tube electrodes

3/08 • • • characterised by presence of stationary flat electrodes arranged with their flat surfaces parallel to the gas stream

3/09 • • • characterised by presence of stationary flat electrodes arranged with their flat surfaces at right angles to the gas stream

3/10 • • • characterised by presence of electrodes moving during separating action

3/12 • • • characterised by separation of ionising and collecting stations

3/14 • • • characterised by the additional use of mechanical effects, e.g. gravity (B03C 3/32 takes precedence)

3/145 • • • • Inertia **[6]**

3/15 • • • • Centrifugal forces **[6]**

3/155 • • • • Filtration **[6]**

3/16 • • wet type
3/28 • Plant or installations without electricity supply, e.g. using electrets
3/30 • • in which electrostatic charge is generated by passage of the gases, i.e. tribo-electricity
3/32 • Transportable units, e.g. for cleaning room air (room air-conditioners having an electrostatic separating stage F24F)
3/34 • Constructional details or accessories or operation thereof
3/36 • • Controlling flow of gases or vapour
3/38 • • Particle charging or ionising stations, e.g. using electric discharge, radioactive radiation, flames (electrode constructions B03C 3/40; ionising gases H05H)
3/40 • • Electrode constructions
3/41 • • • Ionising-electrodes
3/43 • • • • radioactive
3/45 • • • Collecting-electrodes
3/47 • • • • flat, e.g. plates, discs, gratings
3/49 • • • • tubular
3/51 • • • • Catch-space electrodes, e.g. slotted-box form
3/53 • • • • Liquid, or liquid-film, electrodes
3/60 • • • Use of special materials other than liquids
3/62 • • • • ceramics
3/64 • • • • synthetic resins
3/66 • • Applications of electricity supply techniques
3/68 • • • Control systems therefor
3/70 • • • insulating in electric separators (B03C 3/53 takes precedence)
3/72 • • Emergency control systems
3/74 • • Cleaning the electrodes
3/76 • • • by using a mechanical vibrator, e.g. rapping gear
3/78 • • • by washing
3/80 • • • by gas or solid particle blasting
3/82 • • Housings
3/84 • • • Protective coatings
3/86 • • Electrode-carrying means (B03C 3/40 takes precedence)
3/88 • • Cleaning-out collected particles

5/00 Separating dispersed particles from liquids by electrostatic effect (combined with centrifuges B04B 5/10) **[2]**
5/02 • Separators

7/00 Separating solids from solids by electrostatic effect
7/02 • Separators
7/04 • • with material carriers in the form of trays, troughs, or tables
7/06 • • with cylindrical material carriers
7/08 • • with material carriers in the form of belts
7/10 • • with material falling in cascades
7/12 • • with material falling free

9/00 Electrostatic separation not provided for in any single one of the other main groups of this subclass

11/00 Separation by high-voltage electrical fields, not provided for in other groups of this subclass [2006.01]