

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 SO₃ [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]

B03C

- 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]**