ECLA EUROPEAN CLASSIFICATION

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 B01D35/06; separating isotopes B01D59/00; combinations of magnetic or electrostatic separation with separation of solids by other means B03B, B07B; separating sheets from piles B65H3/00; magnets or magnet coil per se H01F) [C9409]

B03C1/00 **Magnetic separation** [C9409]

B03C1/00B . [N: High gradient magnetic separation]

B03C1/005 . Pretreatment specially adapted for magnetic separation [N9409]
B03C1/01 . . by addition of magnetic adjuvants [N9409]
B03C1/015 . . by chemical treatment imparting magnetic properties to the material to be separated, e.g. roasting, reduction, oxidation [N9409]

B03C1/02 . acting directly on the substance being separated
B03C1/021 . . Separation using Meissner effect, i.e. deflection of superconductive particles in a magnetic field [N9409]
B03C1/023 . . Separation using Lorentz force, i.e. deflection of electrically charged particles in a magnetic field [N9409]
B03C1/025 . . High gradient magnetic separators
B03C1/027 . . . with reciprocating canisters [N9409]
B03C1/029 . . . with circulating matrix or matrix elements (matrix elements B03C1/034) [N9409]
B03C1/03 . . . . rotating, e.g. of the carousel type [C9409]
B03C1/031 . . . Component parts; Auxiliary operations [N9409]
B03C1/032 . . . . Matrix cleaning systems [N9409]
B03C1/033 . . . . characterised by the magnetic circuit [N9409]
B03C1/033B . . . . . [N: using permanent magnets] [N9409]
B03C1/033C . . . . . [N: using coils] [N9409]
B03C1/033C2 . . . . . [N: superconductive] [N9409]
B03C1/034 . . . . . characterised by the matrix elements [N9409]
B03C1/035 . . Open gradient magnetic separators, i.e. separators in which the gap is unobstructed, characterised by the configuration of the gap
B03C1/0355 . . . using superconductive coils [N9409]
B03C1/04 . . with the material carriers in the form of trays or with tables
B03C1/06 . . . with magnets moving during operation
B03C1/08 . . . with non-movable magnets
B03C1/10 . . with cylindrical material carriers (B03C1/247 takes precedence) [C9409]
B03C1/12 . . . with magnets moving during operation; with movable pole pieces
B03C1/14 . . . with non-movable magnets
B03C1/14B . . . . [N: with rotating annular or disc-shaped material carriers]

B03C1/16 . . with material carriers in the form of belts

B03C1/18 . . . with magnets moving during operation

B03C1/20 . . . . in the form of belts, e.g. cross-belt type

B03C1/22 . . . with non-movable magnets

B03C1/23 . . 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 [C9409]

B03C1/24 . . . with material carried by travelling fields

B03C1/247 . . . . obtained by a rotating magnetic drum [N9409]

B03C1/253 . . . . obtained by a linear motor [N9409]

B03C1/26 . . with free falling material (B03C1/035 takes precedence)

B03C1/28 . . Magnetic plugs and dipsticks

B03C1/28B . . . [N: with associated accumulation indicator, e.g. Hall sensor]

B03C1/28C . . . [N: with associated cleaning means, e.g. retractable non-magnetic sleeve]

B03C1/28H . . . [N: disposed at the inner circumference of a recipient, e.g. magnetic drain bolt] [N9611]

B03C1/28K . . . [N: disposed at the outer circumference of a recipient] [N9611]

B03C1/30 . . Combinations with other devices, not otherwise provided for

B03C1/32 . acting on the medium containing the substance being separated, e.g. magnetogravimetric-, magnetohydrostatic-, or magnetohydrodynamic separation [N: (sink-float separation using heavy liquids or suspensions B03B5/30)]

B03C3/00 **Separating dispersed particles from gases or vapour, e.g. air, by electrostatic effect** [N: (use of electrostatic separators in combination with exhausts of machines or internal combustion machines F01N3/01)] [C0007]

B03C3/01 . Pretreatment of the gases prior to electrostatic precipitation

B03C3/011 . . Prefiltering; Flow controlling [N9409]

B03C3/013 . . Conditioning by chemical additives, e.g. with SO3 [N9409]

B03C3/014 . . Addition of water; Heat exchange, e.g. by condensation [N9409]

B03C3/016 . . by acoustic or electromagnetic energy, e.g. ultra-violet light [N9409]

B03C3/017 . Combinations of electrostatic separation with other processes, not otherwise provided for [N9409]

B03C3/017B . . [N: Amassing particles by electric fields, e.g. agglomeration] [N9409]

B03C3/019 . Post-treatment of gases [N9409]

B03C3/02 . Plant or installations having external electricity supply (electrode constructions B03C3/40)

B03C3/02B . . [N: Combinations of electrostatic separators, e.g. in parallel or in series, stacked separators, dry-wet separator combinations]

B03C3/04 . . dry type

B03C3/06 . . . characterised by presence of stationary tube electrodes

B03C3/08 . . . characterised by presence of stationary flat electrodes arranged with their flat surfaces parallel to the gas stream

B03C3/09 . . . characterised by presence of stationary flat electrodes arranged with their flat surfaces at right angles to the gas stream

B03C3/10 . . . characterised by presence of electrodes moving during separating action

B03C3/12 . . . characterised by separation of ionising and collecting stations

B03C3/14 . . . characterised by the additional use of mechanical effects, e.g. gravity (B03C3/32 takes precedence) [C9409]

B03C3/145 . . . . Inertia [N9409]

B03C3/15 . . . . Centrifugal forces [N9409]

B03C3/155 . . . . Filtration [N9409]

B03C3/16 . . wet type

B03C3/28 . Plant or installations without electricity supply, e.g. using electrets

B03C3/30 . . in which electrostatic charge is generated by passage of the gases, i.e. tribo-electricity

B03C3/32 . Transportable units, e.g. for cleaning room air (room air-conditioners having an electrostatic separating stage F24F)

B03C3/34 . Constructional details or accessories or operation thereof

B03C3/36 . . Controlling flow of gases or vapour

B03C3/36A . . . [N: by static mechanical means, e.g. deflector] [N0501]

B03C3/36A1 . . . . [N: located before the filter] [N0501]

B03C3/36A2 . . . . [N: located after the filter] [N0501]

B03C3/36A3 . . . . [N: located in the filter, e.g. special shape of the electrodes] [N0501]

B03C3/36C . . . [N: by other than static mechanical means, e.g. internal ventilator or recycler] [N0501]

B03C3/38 . . Particle charging or ionising stations, e.g. using electric discharge, radioactive radiation, flames (electrode constructions B03C3/40; ionising gases H05H)

B03C3/38C . . . [N: using radiation]

B03C3/38D . . . [N: using flames]

B03C3/40 . . Electrode constructions

B03C3/41 . . . Ionising-electrodes

B03C3/43 . . . . radioactive

B03C3/45 . . . Collecting-electrodes

B03C3/45B . . . . [N: specially adapted for heat exchange with the gas stream (B03C3/53 takes precedence)]

B03C3/47 . . . . flat, e.g. plates, discs, gratings

B03C3/49 . . . . tubular [N: (B03C3/45B takes precedence)]

B03C3/51 . . . . Catch- space electrodes, e.g. slotted-box form

B03C3/53 . . . . Liquid, or liquid-film, electrodes

B03C3/60 . . . Use of special materials other than liquids

B03C3/62 . . . . ceramics

B03C3/64 . . . . synthetic resins

B03C3/66 . . Applications of electricity supply techniques

B03C3/68 . . . Control systems therefor

B03C3/70 . . . insulating in electric separators (B03C3/53 takes precedence)
B03C3/72 . . Emergency control systems
B03C3/74 . . Cleaning the electrodes
B03C3/74D . . . [N: by using friction, e.g. by brushes or sliding elements]
B03C3/74D2 . . . . [N: Electricity supply or control systems therefor]
B03C3/76 . . . by using a mechanical vibrator, e.g. rapping gear; [N: by using impact] [C9506]
B03C3/76A . . . . [N: Drive-transmitting devices therefor, e.g. insulated shafts] [N9506]
B03C3/76B . . . . [N: Electricity supply or control systems therefor]
B03C3/76C . . . . [N: with electromagnetic rappers]
B03C3/76D . . . . [N: with pneumatic rappers]
B03C3/76E . . . . [N: with free falling masses, e.g. dropped metal balls] [N9506]
B03C3/78 . . . by washing
B03C3/80 . . . by gas or solid particle blasting
B03C3/82 . . Housings
B03C3/84 . . . Protective coatings
B03C3/86 . . Electrode-carrying means (B03C3/40 takes precedence)
B03C3/88 . . Cleaning-out collected particles
B03C3/88B . . . [N: by travelling or oscillating electric fields, e.g. electric field curtains (electrostatic non-mechanical conveyers in general B65G54/02)]

B03C5/00 **Separating dispersed particles from liquids by electrostatic effect** ([N: flocculation or agglomeration of electric particles induced by electric field B01D21/00E; microreactors B01J19/00R]; combined with centrifuges B04B5/10; [N: treatment of microorganisms and apparatus therefor C12M1/42, C12N13/00, C12Q1/24; analysis of biomaterial by electrical means G01N33/487B]) [C9804]

[N: **Note**
In this group, the following term is used with the meaning indicated:

- "separating" means dimensional modifications of particle-liquid distributions, e.g. particle immobilisation, caging, translational or rotational motion
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B03C5/00B . [N: Dielectrophoresis, i.e. dielectric particles migrating towards the region of highest field strength (B03C5/02 takes precedence; electrophoresis B01D57/02)]

B03C5/02 . Separators
B03C5/02B . . [N: Non-uniform field separators]
B03C5/02B2 . . . [N: using high-gradient differential dielectric separation, i.e. using a dielectric matrix polarised by an external field]
B03C5/02B4 . . . [N: using open-gradient differential dielectric separation, i.e. using electrodes of special shapes for non-uniform field creation, e.g. Fluid Integrated Circuit (FIC)] [C9804]
B03C5/02B6 . . . [N: using travelling electric fields, i.e. travelling wave dielectrophoresis (TWD)] [N9608] [C9804]

B03C7/00 **Separating solids from solids by electrostatic effect**

B03C7/00A . [N: Pretreatment of the solids prior to electrostatic separation]

B03C7/00D . [N: Charging without electricity supply, e.g. by tribo-electricity, pyroelectricity]

B03C7/02 . Separators
B03C7/02B . . [N: Non-uniform field separators] [N9610]
B03C7/02B6 . . . [N: using travelling or oscillating electric fields] [N9610]
B03C7/04 . . with material carriers in the form of trays, troughs, or tables
B03C7/06 . . with cylindrical material carriers
B03C7/08 . . with material carriers in the form of belts
B03C7/10 . . with material falling in cascades
B03C7/12 . . with material falling free

B03C9/00 **Electrostatic separation not provided for in a single preceding main group**

B03C11/00 **Separation by high-voltage electrical fields, not provided for in other groups of this subclass** [N0703]