CPC COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING
(NOTES omitted)

SEPARATING; MIXING

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

B03D FLOTATION; DIFFERENTIAL SEDIMENTATION (sedimentation in general B01D 21/00; in combination with other separation of solids B03B; sink-float separation B03B 5/28; detergents, soaps C11D)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00	**Flotation** (conditioning for flotation, general arrangement of plan B03B)
1/001	. Flotation agents (conditioners B03B 1/00)

NOTES

1. In this group, the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place.
2. In this group, it is desirable to add the appropriate indexing code(s) from each of groups B03D 2201/00 or B03D 2203/00.

1/002	. . Inorganic compounds
1/004	. . Organic compounds
1/0043	. . . {modified so as to contain a polyether group}
1/0046	. . . {containing silicon}
1/006	. . . Hydrocarbons
1/008	. . . containing oxygen
1/01	. . . containing nitrogen
1/011	. . . . {Quaternary ammonium compounds}
1/012	. . . containing sulfur
1/014	. . . containing phosphorus
1/016	. . . Macromolecular compounds
1/018	. . Mixtures of inorganic and organic compounds
1/02	. Froth-flotation processes
1/021	. . {for treatment of phosphate ores}
1/023	. . {Carrier flotation; Flotation of a carrier material to which the target material attaches}
1/025	. . {adapted for the flotation of fines}
1/026	. . {Using an immiscible liquid in place of a gas for flotation}
1/028	. . {Control and monitoring of flotation processes; computer models therefor}
1/04	. . by varying ambient atmospheric pressure
1/06	. . differential
1/08	. Subsequent treatment of concentrated product (froth dispersion B01D 19/02)

1/082	. . {of the froth product, e.g. washing}
1/085	. . {of the feed, e.g. conditioning, de-sliming}
1/087	. . {of the sediment, e.g. regrinding}
1/10	. . Removing adhering liquid from separated materials (processes or devices capable of general use B01D)
1/12	. Agent recovery
1/14	. Flotation machines (devices for feeding measured quantities of reagents B01J 4/02; flotation apparatus for enzymology or microbiology C12M 1/09)
1/1406	. . {with special arrangement of a plurality of flotation cells, e.g. positioning a flotation cell inside another}
1/1412	. . {with baffles, e.g. at the wall for redirecting settling solids}
1/1418	. . {using centrifugal forces}
1/1425	. . . {air-sparged hydrocyclones}
1/1431	. . {Dissolved air flotation machines}
1/1437	. . {using electroflotation (waste water treatment using electroflotation C02F 1/465)}
1/1443	. . {Feed or discharge mechanisms for flotation tanks}
1/145	. . . {Feed mechanisms for reagents (devices for feeding measured quantities of reagents B01J 4/02)}
1/1456	. . . {Feed mechanisms for the slurry}
1/1462	. . . {Discharge mechanisms for the froth}
1/1468	. . . {Discharge mechanisms for the sediments}
1/1475	. . . {Flotation tanks having means for discharging the pulp, e.g. as a bleed stream}
1/1481	. . {with a plurality of parallel plates}
1/1487	. . {Means for cleaning or maintenance}
1/1493	. . {with means for establishing a specified flow pattern}
1/16	. . with impellers; Subaeration machines {(mixing gases or vapours with liquids B01F 23/20)}
1/18	. . . without air supply
1/20	. . . with internal air pumps
1/22	. . . with external blowers

1/24	. .	Pneumatic {(mixing gases or vapours with liquids B01F 23/20)}
1/242	. . .	{Nozzles for injecting gas into the flotation tank}
1/245	. . .	{Injecting gas through perforated or porous area}
1/247	. . .	{Mixing gas and slurry in a device separate from the flotation tank, i.e. reactor-separator type}
1/26	. . .	Air lift machines

3/00		**Differential sedimentation**
3/02	.	Coagulation
3/04	. .	assisted by vibrations
3/06	.	Flocculation

2201/00		**Specified effects produced by the flotation agents** (use of substances as emulsifying, wetting, dispersing or foam-producing agents C09K 23/00)
2201/002	.	Coagulants and Flocculants
2201/005	.	Dispersants
2201/007	.	Modifying reagents for adjusting pH or conductivity
2201/02	.	Collectors
2201/04	.	Frothers
2201/06	.	Depressants

2203/00		**Specified materials treated by the flotation agents; specified applications** (paper pulp processing D21F 1/70, de-inking of paper pulp D21B 1/325)
2203/001	.	Agricultural products, food, biogas, algae
2203/003	.	Biotechnological applications, e.g. separation or purification of enzymes, hormones, vitamins, viruses
2203/005	.	Fine and commodity chemicals
2203/006	.	Oil well fluids, oil sands, bitumen
2203/008	.	Water purification, e.g. for process water recycling (waste water treatment C02F 1/24)
2203/02	.	Ores
2203/025	. .	Precious metal ores
2203/04	. .	Non-sulfide ores
2203/06	. . .	Phosphate ores
2203/08	. . .	Coal ores, fly ash or soot
2203/10	. . .	Potassium ores