

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

The following groups are not complete: [B03D 1/023](#), see also [B03D 1/02](#)[B03D 1/025](#), see also [B03D 1/02](#)[B03D 1/026](#), see also [B03D 1/02](#)[B03D 1/028](#), see also [B03D 1/02](#)[B03D 1/082](#), see also [B03D 1/08](#)[B03D 1/085](#), see also [B03D 1/08](#)[B03D 1/087](#), see also [B03D 1/08](#)[B03D 1/1406](#), see also [B03D 1/14](#)[B03D 1/1443](#), see also [B03D 1/14](#)[B03D 1/145](#), see also [B03D 1/14](#)[B03D 1/1456](#), see also [B03D 1/14](#)[B03D 1/1462](#), see also [B03D 1/14](#)[B03D 1/1468](#), see also [B03D 1/14](#)[B03D 1/1475](#), see also [B03D 1/14](#)[B03D 1/1487](#), see also [B03D 1/14](#)[B03D 1/1493](#), see also [B03D 1/14](#)[B03D 1/242](#), see also [B03D 1/24](#)[B03D 1/247](#), see also [B03D 1/24](#) ]

**B03D 1/00**

**Flotation** (conditioning for flotation, general arrangement of plan [B03B](#))

**NOTE**

In groups [B03D 1/001](#) to [B03D 1/018](#) , in the absence of an indication to the contrary, classification is made in the last appropriate place.

- [B03D 1/001](#) . Flotation agents (conditioners [B03B 1/00](#))
- [B03D 1/002](#) . . Inorganic compounds
- [B03D 1/004](#) . . Organic compounds
- [B03D 1/0043](#) . . . {modified so as to contain a polyether group}
- [B03D 1/0046](#) . . . {containing silicon}
- [B03D 1/006](#) . . . Hydrocarbons
- [B03D 1/008](#) . . . containing oxygen
- [B03D 1/01](#) . . . containing nitrogen
- [B03D 1/011](#) . . . . {Quaternary ammonium compounds}
- [B03D 1/012](#) . . . containing sulfur
- [B03D 1/014](#) . . . containing phosphorus
- [B03D 1/016](#) . . . Macromolecular compounds
- [B03D 1/018](#) . . Mixtures of inorganic and organic compounds
- [B03D 1/02](#) . Froth-flotation processes
- [B03D 1/021](#) . . {for treatment of phosphate ores}
- [B03D 1/023](#) . . {Carrier flotation; Flotation of a carrier material to which the target material attaches}
- [B03D 1/025](#) . . {adapted for the flotation of fines}
- [B03D 1/026](#) . . {Using an immiscible liquid in place of a gas for flotation}

B03D 1/028	.. {Control and monitoring of flotation processes; computer models therefor}
B03D 1/04	.. by varying ambient atmospheric pressure
B03D 1/06	.. differential
B03D 1/08	. Subsequent treatment of concentrated product (froth dispersion <a href="#">B01D 19/02</a> )
B03D 1/082	.. {of the froth product, e.g. washing}
B03D 1/085	.. {of the feed, e.g. conditioning, de-sliming}
B03D 1/087	.. {of the sediment, e.g. regrinding}
B03D 1/10	.. Removing adhering liquid from separated materials (processes or devices capable of general use <a href="#">B01D</a> )
B03D 1/12	. Agent recovery
B03D 1/14	. Flotation machines (devices for feeding measured quantities of reagents <a href="#">B01J 4/02</a> ; flotation apparatus for enzymology or microbiology <a href="#">C12M 1/09</a> )
B03D 1/1406	.. {with special arrangement of a plurality of flotation cells, e.g. positioning a flotation cell inside another}
B03D 1/1412	.. {with baffles, e.g. at the wall for redirecting settling solids}
B03D 1/1418	.. {using centrifugal forces}
B03D 1/1425	... {air-sparged hydrocyclones}
B03D 1/1431	.. {Dissolved air flotation machines}
B03D 1/1437	.. {using electroflotation (waste water treatment using electroflotation <a href="#">C02F 1/465</a> )}
B03D 1/1443	.. {Feed or discharge mechanisms for flotation tanks}
B03D 1/145	... {Feed mechanisms for reagents (devices for feeding measured quantities of reagents <a href="#">B01J 4/02</a> )}
B03D 1/1456	... {Feed mechanisms for the slurry}
B03D 1/1462	... {Discharge mechanisms for the froth}
B03D 1/1468	... {Discharge mechanisms for the sediments}
B03D 1/1475	... {Flotation tanks having means for discharging the pulp, e.g. as a bleed stream}
B03D 1/1481	.. {with a plurality of parallel plates}
B03D 1/1487	.. {Means for cleaning or maintenance}
B03D 1/1493	.. {with means for establishing a specified flow pattern}
B03D 1/16	.. with impellers; Subaeration machines {(mixing gases or vapours with liquids <a href="#">B01F 3/04</a> )}
B03D 1/18	... without air supply
B03D 1/20	... with internal air pumps
B03D 1/22	... with external blowers
B03D 1/24	.. Pneumatic {(mixing gases or vapours with liquids <a href="#">B01F 3/04</a> )}
B03D 1/242	... {Nozzles for injecting gas into the flotation tank}
B03D 1/245	... {Injecting gas through perforated or porous area}
B03D 1/247	... {Mixing gas and slurry in a device separate from the flotation tank, i.e. reactor-separator type}
B03D 1/26	... Air lift machines
<b>B03D 3/00</b>	<b>Differential sedimentation</b>

- B03D 3/02 . Coagulation
- B03D 3/04 . . assisted by vibrations
- B03D 3/06 . Flocculation

**B03D 2201/00 Specified effects produced by the flotation agents** (use of substances as emulsifying, wetting, dispersing or foam-producing agents [B01F 17/00](#))

- B03D 2201/002 . Coagulants and Flocculants
- B03D 2201/005 . Dispersants
- B03D 2201/007 . Modifying reagents for adjusting pH or conductivity
- B03D 2201/02 . Collectors
- B03D 2201/04 . Frothers
- B03D 2201/06 . Depressants

**B03D 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](#))

- B03D 2203/001 . Agricultural products, food, biogas, algae
- B03D 2203/003 . Biotechnological applications, e.g. separation or purification of enzymes, hormones, vitamins, viruses
- B03D 2203/005 . Fine and commodity chemicals
- B03D 2203/006 . Oil well fluids, oil sands, bitumen
- B03D 2203/008 . Water purification, e.g. for process water recycling ([waste water treatment C02F 1/24](#))
- B03D 2203/02 . Ores
  - B03D 2203/025 . . Precious metal ores
  - B03D 2203/04 . . Non-sulfide ores
    - B03D 2203/06 . . . Phosphate ores
    - B03D 2203/08 . . . Coal ores, fly ash or soot
    - B03D 2203/10 . . . Potassium ores