

**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 1/02 C](#), see also [B03D 1/02 B03D 1/02 F](#), see also [B03D 1/02 B03D 1/02 L](#), see also [B03D 1/02 B03D 1/02 R](#), see also [B03D 1/02 B03D 1/08 D](#), see also [B03D 1/08 B03D 1/08 F](#), see also [B03D 1/08 B03D 1/08 T](#), see also [B03D 1/08 B03D 1/14 A](#), see also [B03D 1/14 B03D 1/14 F](#), 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 1/14 M](#), see also [B03D 1/14 B03D 1/14 S](#), see also [B03D 1/14 B03D 1/24 N](#), see also [B03D 1/24 B03D 1/24 R](#), 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 B01D 19/02](#) )
- 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 B01D](#) )
  
- B03D 1/12           .     Agent recovery
  
- B03D 1/14           .     Flotation machines ( [devices for feeding measured quantities of reagents B01J 4/02](#) ; [flotation apparatus for enzymology or microbiology C12M 1/09](#) )
- 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 C02F 1/465](#) ) }
- B03D 1/1443          ..     { Feed or discharge mechanisms for flotation tanks }
- B03D 1/145           ...     { Feed mechanisms for reagents ( [devices for feeding measured quantities of reagents B01J 4/02](#) ) }
- 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 B01F 3/04](#) ) }
- 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 B01F 3/04](#) ) }
- 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
  
- B03D 3/00           Differential sedimentation**

|                     |  |
|---------------------|--|
| B03D 3/02           | . Coagulation  |
| B03D 3/04           | . . assisted by vibrations   |
| B03D 3/06           | . Flocculation   |
| <b>B03D 2201/00</b> | <b>Specified effects produced by the flotation agents ( use of substances as emulsifying, wetting, dispersing or foam-producing agents <a href="#">B01F 17/00</a> )</b>                      |
| 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  |
| <b>B03D 2203/00</b> | <b>Specified materials treated by the flotation agents ; specified applications ( paper pulp processing <a href="#">D21F 1/70</a> , de-inking of paper pulp <a href="#">D21B 1/325</a> )</b> |
| 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 <a href="#">C02F 1/24</a> )   |
| 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   |