

**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.

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| <a href="#">B03D 1/001</a>  | . Flotation agents (conditioners <a href="#">B03B 1/00</a> ) |
| <a href="#">B03D 1/002</a>  | . . Inorganic compounds                                      |
| <a href="#">B03D 1/004</a>  | . . Organic compounds  |
| <a href="#">B03D 1/0043</a> | . . . {modified so as to contain a polyether group}          |
| <a href="#">B03D 1/0046</a> | . . . {containing silicon}                                   |
| <a href="#">B03D 1/006</a>  | . . . Hydrocarbons   |
| <a href="#">B03D 1/008</a>  | . . . containing oxygen                                      |
| <a href="#">B03D 1/01</a>   | . . . containing nitrogen                                    |
| <a href="#">B03D 1/011</a>  | . . . . {Quaternary ammonium compounds}                      |
| <a href="#">B03D 1/012</a>  | . . . 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 <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
<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 ( <a href="#">waste water treatment 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