



Exploring



Experimenting



Evolving

## AREA FUNCTION

In mineral processing, the Bain-Marie Water bath is used for heating of solution during leaching. The flotation process is a method used to separate valuable minerals from gangue minerals based on their differences in surface properties. During flotation, air bubbles are introduced into a mixture of finely ground ore and water, attaching to hydrophobic particles and lifting them to the surface, forming a froth. The froth containing the desired minerals is then skimmed off and collected, while the gangue minerals sink to the bottom. This process is widely used in the mining industry to concentrate valuable minerals such as copper, lead, zinc, and gold from ores.

### Method:

- 1- Finely ground ore is mixed with water to form a slurry.
- 2- Collectors and frothers are added to enhance the hydrophobic properties.
- 3- Depressants are added to prevent the flotation of unwanted minerals.
- 4- Air is then introduced into the slurry.
- 5- Buble rises to the surface and forms a froth layer, allowing for the selective recovery of valuable minerals.

## TECHNICAL SPECIFICATIONS

No.	Equipment Name	Type	Specifications	Supplier
1	Denver Flotation	Lab scale	Cell Volume: 1, 2, 4, 8 Liters Mixed Speed: Up to 2800 rpm	Iran
2	Bain-Marie Water Bath	Lab scale	Volume: 14 liters, Temperature Range: 10 - 95 °C, Usable Bath Volume: 75 Liters	Memmert Germany
3	Stirrer	Lab scale	Mixed Speed: Up to 1500 rpm	England



Do not operate this equipment unsupervised



Chemical materials.  
Wear required protection



High-visibility jackets must be worn



Eye protection must be worn



Face mask must be worn

