

FreeFlote™

Clay Dispersants for Sulphide Flotation

Declining grades of sulphide minerals have led operators to extract copper from increasingly mineralogically complex deposits. Processing low-grade transitional and sulphide ores through flotation requires the use of dispersants to counteract the negative effects caused by clay minerals. Clays in flotation feeds can cause slurry rheology issues, increased reagent use, and coating of sulphide minerals, leading to poor flotation hydrodynamics and reduced recovery of valuable metals.

Nalco Water understands that clay-related issues in flotation cannot be solved with a single solution. Our program starts with a site-specific clay mineralogy analysis to determine the right FreeFlote technology to deliver a customised dispersant chemistry solution that improves flotation performance and minimises clay-related losses.

Why FreeFlote is the Smarter Choice for Sulphide Flotation

- Nalco Water's dispersant solutions are appropriate for various non-swelling clays such as kaolinite and muscovite.
- Industry-leading R&D enables Nalco Water to formulate variations in molecular weight and functional groups, allowing for adaptability to dynamic mineralogies.
- Reduce chemistry consumption by >50% compared to sodium silicate without compromising flotation performance.
- Nalco Water's robust global supply chain helps ensure consistent, sustainable reagent availability—wherever and whenever it's needed.

Application of FreeFlote™



Flexible deployment across the circuit

FreeFlote can be applied at multiple points to align with customer KPIs and circuit operating philosophies.

Boosts copper recovery and grade

Enhanced performance when dosed in the cleaner circuit of copper sulphide operations; post mill dosing recommended for bulk flotation.

Improves Molybdenum recovery even in degrading water conditions

FreeFlote maintains flotation performance in challenging water quality.

Effective across pH 9-10

FreeFlote chemistry performs reliably within this operational range.

Dual-function chemistry for higher throughput and grade

Acts as both a dispersant and depressant of insoluble gangue for a higher concentrate grade. FreeFlote can also reduce slurry viscosity for better gas dispersion and increased throughput.