

SPECIALISED PRODUCTS FOR **PHOSPHATE**



PHOSPHATE PROCESSING

The Axis House phosphate product range includes reagents for the beneficiation of phosphate rock through to production of phosphoric acid. These include; our specialised collectors for both direct and reverse flotation, depressants, frothers, heavy metal removal agent and defoaming agents for phosphoric acid production.

FLOTATION

Common gangue minerals which forms part of the typical mineralogy of phosphate ores requires the selective flotation of phosphate minerals (apatite, monazite, etc). Depending on the type or concentration of the gangue minerals present, anionic or cationic collectors are applied during the flotation upgrade process.

In general, phosphate ore is processed by flotation to reduce the content of the gangue minerals, which typically consists of quartz, feldspar, mica, calcite, dolomite, etc. The Axis House phosphate reagent range can be successfully applied to efficiently separate phosphate and gangue mineral during the flotation process.

Direct flotation:

Collectors:

Axis House Rinkalore range are selective anionic collectors applied in the direct flotation of phosphate minerals. Collectors are typically applied at basic pH and can be applied with or without fuel oil such as diesel.

Reagent Type: Anionic collector

Product Line: Rinkalore Series

Application: Direct phosphate flotation
Reverse carbonate flotation
Oxide flotation

Benefits:

- Maximised grade recovery
- Optimise collector application
- Improved selectivity against unwanted minerals

Reverse flotation:

The concentration of phosphate ores through the reverse flotation of silicate, dolomitic and calcitic minerals are achieved by applying the Axis House cationic collector range.

Reagent Type: Cationic collector

Product Line: Rinkalore D-19 Series

Application: Reverse flotation of silicates,
Carbonates oxide mineral flotation

Axis House is a major supplier and distributor of chemicals to the mining industry, servicing clients across the globe.

Axis House has manufactured a range of products specifically for the phosphate industry namely:

- Anionic collectors
- Cationic collectors
- Frothers
- Depressants
- Defoamers
- Flocculants
- Decadmiation

These products ensure optimal ore recovery.

Our Technical Capabilities

- Fully equipped laboratory
- Accurate benchmarking of reagent suites
- Global footprint

Frothers:

HydroFroth™ range of alcohol, glycol and oil based frothers. Frother blends are customised for specific operations to ensure that frother selectivity, stability and mobility is at an optimum.

Product Line: HydroFroth™

Application: Rougher/Cleaner flotation
All mineral types

Benefits:

- Improved selectivity
- Stability and mobility
- Reduced dosage

Flocculants:

The Brontë range includes non-ionic, anionic and cationic polymeric flocculants as well as coagulants. Flocculant selection is done by detailed on-site testing to ensure the appropriate flocculant is applied to achieve improved underflow densities and clear overflows.

Product Line: Brontë

Application: Solid liquid separation
density improvement

Benefits:

- Improvement of water/acid recycling
- More efficient control of slurry densities

Depressant Range:

In direct flotation of phosphate minerals, depressants are applied to reduce the recovery of unwanted gangue minerals such as calcite, silicates and clays. The Axis House range of depressants for phosphate ores are selected through detailed test work and by mineralogy.

Product Line: Revadep

Application: Depression of silicates, clays, carbonates. Depression of all phosphate associated gangue minerals

Benefits:

- Selective depression
- Improved grade
- More efficient dosing

Decadmiation:

Efficient decadmiation by precipitation is possible with Axis House cadmium removal reagents. Cadmium removal with Axis House organic reagents are more efficient and lower operating and capital costs compared to ion exchange, crystallisation and calcination.

Product Line: Cad^d

Application: Cadmium removal from phosphate products

Benefits:

- Efficient Cd removal during phosphoric acid production
- Lower operating costs compared to other methods

Defoamers:

Axis House defoamers are applied in the phosphoric acid production process. During the reaction of Phosphate concentrate and sulphuric acid, CO₂ is generated, which causes excessive foaming. Defoamer application significantly decreases the foam formation, thereby increasing the efficiency of the process.

The defoamer range consists of silicon based, silicon free, water based, oil based and powder based. Through laboratory testing, a suitable defoamer can be selected for specific phosphoric acid producers.

Product Line: Foam^{Ax}

Application: Foam reduction in phosphoric acid process.

Benefits:

- Improved phosphate leach efficiency
- Improved phosphoric acid production

