Mining Solutions
Innovative Solutions for Flotation of Industrial Minerals
BASF’s Mining Solutions at a glance

BASF’s Mining Solutions business offers a diverse range of chemicals and technologies for mineral processing to improve process efficiencies and aid the economical extraction of valuable resources.

We offer our products and technology solutions to the global mineral processing industry along with expert advice and technical support. Our global team is driven by a common goal to provide the best sustainable solution to meet our customers’ processing needs. With technical representation in over 100 countries, BASF’s technical support is provided on a global, regional and local basis.

We can provide reagents, equipment, process technologies and expertise, focusing on applications such as flotation, solid liquid separation, solvent extraction, tailings management, grinding, and materials handling.

BASF’s flotation range includes collectors for non-sulfide ores, frothers, dispersants, and modifiers. BASF’s expertise in surfactant chemistry has resulted in a long history of innovation allowing us to provide innovative, sustainable solutions to ensure our customers’ operations run more efficiently by delivering operational and financial benefits.
Innovation is at the heart of BASF’s Mining Solutions business as our aim is to develop novel and innovative chemistries and technologies to effectively meet the evolving challenges that the mining industry continues to face. BASF is committed to working in close collaboration with our customers, academia, and global industry organizations.

BASF’s extensive backward integration into the building blocks of product chemistries for mineral processing enables us to effectively apply our knowledge and chemical experience to develop both conventional and novel chemistries to meet the technical and commercial challenges faced by the industry, both today and in the future.

Our Product Development and Technical Support personnel are located around the globe and are complemented by three BASF Global Competence Centers, based in Tucson (North America), Ludwigshafen (Europe), and Perth (Australia) and supported by Flotation laboratories in Jacareí (Brazil) and Moscow (Russia).

With our chemistry, equipment, process and application technologies, industry experience, and customer commitment, BASF can uniquely package competencies and expert offerings to effectively support the diversity of mineral processing technology developments and process challenges.
We offer solutions for the flotation of non-sulfide minerals

Phosphate

The Lupromin® FP A anionic collectors range is recommended for apatite flotation where the percentage of silicates or calcium oxide/phosphorous pentoxide ratio is high.

Lupromin® FP A 711 is an anionic collector recommended for apatite flotation where the percentage of silicates or calcium oxide/phosphorous pentoxide ratio is high. These products ensure the necessary hydrophilic/lipophilic balance for effective flotation selectivity. The combination of the foaming power of the Lupromin® FP A 711 and its chemistry promotes the necessary selectivity for the flotation process. Collector is supplied as a viscous liquid at room temperature.

Lupromin® FP A 212 is a fatty acid based collector applied for oxidized phosphate ore flotation. The formula of Lupromin® FP A 212 provides high selectivity and metallurgical recovery at lower dosage in comparison with typical vegetal collectors.

Barite

Lupromin® FP B 715 and Lupromin® FP B 251 are neutral fatty alcohol sulfate collectors supplied as a viscous liquid that promotes high-selectivity barite flotation.

Lupromin® FP 199 is a collector for direct barite flotation based on sodium alkyl ether sulfate salt modified with further additives to improve selectivity and dose efficiency.

Lupromin® FP E is a granulated solid product based on high molecular weight fatty alcohol sulfates.

Calcite

Lupromin® FP 18 AS is a novel liquid polymeric esterquat applied as a reverse calcite flotation collector for the selective removal of silicaceous minerals. Apart from the ecological benefits gained from using esterquats, it also offers potential economic advantages due to the faster flotation kinetics of this collector system.
BASF helps you to achieve the most profitable operational curve

For specific flotation challenges, BASF is continuously developing tailor-made solutions in collaboration with customers via test work in laboratories, pilot plants and industrial operations. Please contact our sales team for further information.

**Concentrate grade**

**Recovery**

---

**Fluorspar**

*Lupromin® FP 308C* is a collector based on anionic and non-ionic molecules that allows the concentration of fluorspar to produce a commercial-grade product. Further tailor-made novel formulations are available on request (ask your local sales partner).

**Pyrochlore**

*Lupromin® FP N 315* is a mixture of polyglycol esters, which associated to cationic collectors, acts as an adjuvant in niobium flotation. The use of *Lupromin® FP N 315* therefore significantly increases the efficiency of the pyrochlore flotation process.

**Frothers**

The BASF range of frothers allows a faster and more selective flotation. We offer custom-made solutions to improve flotation performance.

---

**Mineral** | **BASF Solution**
--- | ---
Phosphate | Direct flotation using *Lupromin® FP A* range. Tailor-made formulations are available for inverse carbonate flotation from phosphate ores.
Barite | Direct flotation using *Lupromin® FP B 715, Lupromin® FP B 251, Lupromin® FP 199 or Lupromin® FP E* granulate.
Calcite | Silica removal through reverse flotation with *Lupromin® FP 18 AS*.
Fluorspar | Direct flotation using *Lupromin® FP 308C*.
Pyrochlore | Direct flotation associating *Lupromin® FP N 315* to cationic collectors.

---

BASF helps you to achieve the most profitable operational curve.
The descriptions, designs, data and information contained herein are presented in good faith, and are based on BASF’s current knowledge and experience. They are provided for guidance only, and do not constitute the agreed contractual quality of the product or a part of BASF’s terms and conditions of sale. Because many factors may affect processing or application/use of the product, BASF recommends that the reader carry out its own investigations and tests to determine the suitability of a product for its particular purpose prior to use. It is the responsibility of the recipient of product to ensure that any proprietary rights and existing laws and legislation are observed. No warranties of any kind, either express or implied, including, but not limited to, warranties of merchantability or fitness for a particular purpose, are made regarding products described or designs, data or information set forth herein, or that the products, descriptions, designs, data or information may be used without infringing the intellectual property rights of others. Any descriptions, designs, data and information given in this publication may change without prior information. The descriptions, designs, data, and information furnished by BASF hereunder are given gratis and BASF assumes no obligation or liability for the descriptions, designs, data or information given or results obtained, all such being given and accepted at the reader’s risk. (04/2018)

TM = Trademark of BASF SE
® = registered trademark of BASF SE

For further information:
miningsolutions@basf.com
www.mining-solutions.basf.com