



Mining product portfolio



Mineral processing solutions
to maximize performance

Nouryon

Maximize Your Mineral Processing

Mineral processing solutions by type of ore

| Ore type | Function | Product | Key benefits | |
|--|------------------------|---|--|--|
| Potash | Sylvite flotation | Armeen® HT | Performs at ambient to slightly elevated temperatures (approx 18-30°C) | |
| | | Armeen® M | Coarse recovery collector at elevated brine temperatures (>28°C) | |
| | | Armac® HT | Water-soluble, performs at ambient to slightly elevated brine temperatures (approx 18-30°C) | |
| | | Lilafлот® FAB53 | Suitable for systems with elevated brine temperatures (>30°C) | |
| | Flotation depressants | Celect® SD | CMC blinding agent for clays, added robustness in saline systems | |
| | | Finnfix® 300 | CMC blinding agent for clays | |
| | Slime flotation | Ethomeen® HT/40, Phospholan® PE 65 | Slime flotation collector | |
| | Halite flotation | Armoфлоте® 619 | Effective collector for reverse flotation of carnallite | |
| | Anticaking | Armeen® HT, Armeen® T | Anticaking agent suitable for load out, storage and/or transport | |
| | | Armac® HT | Water-soluble anticaking agent suitable for load out, storage and/or transport | |
| | | | | |
| Iron ores (magnetite, hematite, itabirite) | Silica flotation | Armoфлоте® 940, Armoфлоте® 945 | New chemistry for silicate removal from iron ores, readily biodegradable with improved ecotoxicity profile | |
| | | Lilafлот® 811M | Ethermonoamine suitable for silicate removal from hematite and magnetite ores, readily biodegradable | |
| | | Lilafлот® 919 | Ethermonoamine for silicate removal from iron ores | |
| | | Lilafлот® D817M | Etherdiamine suitable for mixed silicate removal from magnetite ores | |
| | | Lilafлот® D826M | Low foaming etherdiamine suitable for mixed silicate removal from magnetite ores | |
| | Dephosphorization | Atrac® 1563 | For the removal of apatite from iron oxides in hard process water | |
| | | Atrac® 2600 | For the removal of apatite from iron oxides | |
| | Phosphate | Direct flotation | Atrac® 1563 | For apatite removal from iron oxides in hard process water |
| | | | Atrac® 2600 | Anionic collector for improved selectivity in rich siliceous phosphate ore |
| | | | Atrac® 922, Berol® 912L | Primary collector for igneous apatite with high selectivity against carbonates |
| Berol® 8305 | | | Formulation for complex, difficult to float ores and/or hard process water | |
| Phospholan® PE65 | | Fatty acid booster for complex, difficult to float ores and/or hard process water, performs over wide temperature range | | |
| Silica flotation | | Armoфлоте® 465 | For use over a wide range of process water qualities | |
| Carbonate flotation | Atrac® 1650 | Suitable for low pH systems | | |
| Calcite | Silica flotation | ACD® 82808-N | Fine particle tolerant | |
| | | Armoфлоте® 18 | For less complex, easy to float systems | |
| | | Armoфлоте® ECO | Ecofriendly collector for silicate removal | |
| | | Lilafлот® 730 | Effective for flotation of coarse particles | |
| | | Lilafлот® 1400 | Booster for Armoфлоте® 18 and Lilafлот® 1590 | |
| | Decolorizing flotation | Armoфлоте® GS13 | For reverse flotation of hydrophobic minerals such as graphite and talc | |
| Lilafлот® 1597 | | For reverse flotation of iron containing minerals such as pyrite | | |
| Feldspar | Feldspar flotation | Armeen® T, Lilafлот® OT55 | Effective for fluoride systems | |
| | | Duomeen® TDO | Suitable for fluoride and non-fluoride systems | |
| Rare earth minerals | Flotation collector | Berol® 8313 | Effective collector to improve grade and recovery | |

Working with you from lab to full scale, we help enhance your recovery and improve your environmental profile without compromising on quality. For more than 80 years, we have been focused on maximizing your performance by designing innovative flotation collectors and depressants for specific ore types plus other mineral processing aids for general applications.

| Ore type | Function | Product | Key benefits |
|--|-----------------------|--------------------------------------|---|
| Sulfides | Flotation collector | Tecflote® S11 | High selectivity to copper, lead, zinc, and platinum group metals (PGMs), strong pyrite rejection |
| PGM, copper/nickel sulfides, gold, and base metal sulfides | Flotation depressants | Celect® HPD | Efficient CMC depressant, minimal impact on downstream water treatment |
| | | Finnfix® 300 | Medium strength CMC depressant, medium dispersant |
| | | Celect® SD | Optimized CMC dispersant, robust in low purity waters |
| | | Celect® BDR | Highly selective medium strength CMC depressant, medium dispersant, enables wide dosage range |
| Barite | Barite flotation | Celect® CRD | Optimized CMC for chromite reduction |
| | | Atrac® 2600 | Label-free readily biodegradable collector |
| | Silica flotation | Armoфлоте® 17 | Performs in reverse flotation where impurities are silicates |
| Magnesite | Silica flotation | Armoфлоте® 18 | Performs in reverse flotation of less complex ores where impurities are silicates |
| | | Lilafлот® 1873 | Non-flammable collector for reverse flotation where impurities are silicates |
| | | Lilafлот® 20193L | Performs in reverse flotation of complex ores where impurities are silicates |
| Spodumene | Mica flotation | Armeen® T | Performs in reverse flotation to remove mica and feldspar |
| | Spodumene flotation | Atrac® 2600 | Booster or collector in the direct flotation of spodumene |
| Wollastonite | Direct flotation | Armoфлоте® 18, Duomeen® T | Performs in direct flotation where impurities are carbonates |
| Zinc oxide | Flotation collector | Armac® C, Armeen® C, Lilafлот® D817M | Effective collector for zinc flotation, especially smithsonite and willemite |
| Kaolin | Flotation collector | Armeen® C, Armeen® OL | Cationic collector for direct flotation of kaolin |
| Fluorspar | Flotation collector | Berol® 8305 | Collector for direct flotation of fluorspar |
| Pyrochlore | Flotation collector | Armacflote® 109, Lilafлот® 1400 | Suitable for direct flotation of pyrochlore |
| Scheelite | Flotation collector | Berol® 8313 | Collector for direct flotation of scheelite |

Mineral processing solutions for general applications

| Function | Product | Key benefits |
|----------------------|------------------------------|---|
| Dewatering aids | Berol® 1007, Berol® 1040 | Increases filtration rate, reduces moisture content |
| Dispersants | Alcosperse® 240 | Sulfonated copolymer, excellent iron oxide dispersant |
| | Alcosperse® 602N | Anionic polymer for general purpose mineral dispersant |
| | Alcosperse® 747 | Copolymer suitable for dispersion of hydrophobic minerals |
| Flocculants | Aquatreat® 7H, Alcogum® 1370 | Anionic polymer for neutral to slightly cationic minerals |
| | Floc Aid® 19 | Amphoteric polymer for flocculation of neutral to slightly anionic minerals |
| Frothers | Lilafлот® SB12 | Effective for phosphate and potash ores |
| | Lilafлот® SB13 | Applicable for sulfide minerals, mainly copper sulfide |
| Fertilizer additives | Armoфлоте® AC-59P | Anticaking additive for potassium nitrate |
| | Petro® AGS | Anticaking agent for potassium nitrate, ammonium nitrate, ammonium sulfate and urea |
| | Petro® P | Increases granular integrity for SSP, TSP and ammonium nitrate |

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Nouryon

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