Flotation—Collectors

Flotation collectors play a critical role in enabling selective mineral separation. By promoting controlled attachment of target minerals to air bubbles, they support efficient recovery in the froth while limiting unwanted gangue.

Advanced collector chemistries are designed to perform reliably across varying ore types, water qualities, and reagent regimes, helping operations maintain consistent flotation performance and integrate smoothly into existing plant circuits.

Selective flotation for controlled mineral separation of non-sulfide ores

What our chemistry delivers

Targeted hydrophobation for selective separation

Collectors selectively adsorb onto specific mineral surfaces, such as iron ore, potash, phosphate, etc. This enables attachment to air bubbles maximizing recovery of valuables while limiting unintended flotation of gangue minerals in both direct and reverse flotation schemes.

Designed for complex ores and operating conditions

Collector chemistry functions across variable ore types and water chemistries, with stability and compatibility across the reagent suite.

Applicable across mineral systems

Applied across metallic, non-metallic, and industrial minerals requiring selective separation.

Why it matters to flotation circuits

Controlled selectivity in mineral separation

Strong enough to enhance recovery but weak enough to enhance selectivity, higher control supports the separation of valuable minerals from gangue.

Stable performance across varying water conditions

Consistent collector performance across changes in water quality, including pH, salinity, and temperature, helps maintain flotation efficiency and process stability.

Operational outcomes

- Improved grade-recovery balance through controlled mineral attachment rather than aggressive reagent action
- More predictable circuit behavior through stable reagent interaction
- More consistent flotation performance under variable ore mineralogy and water chemistry

How this works in practice

Across different ore types and flotation systems, these chemistries deliver consistent performance in application-specific operating conditions.

The example on page 2 shows how our solutions deliver results in real conditions. Evaluate your flotation circuits and start a technical discussion at nouryon.com/mining/collectors

Our core brands include:

Armeen®, Armoflote®, Atrac®, Berol®, Lilaflot®, and Phospholan® collectors

Case Example: Stable flotation performance in saline water conditions

Challenge

Saline water (high Ca/Mg, sulfates) reduces collector efficiency—impacting grade and process stability.

Solution

Lilaflot® collectors maintain selectivity and performance under adverse water chemistry.

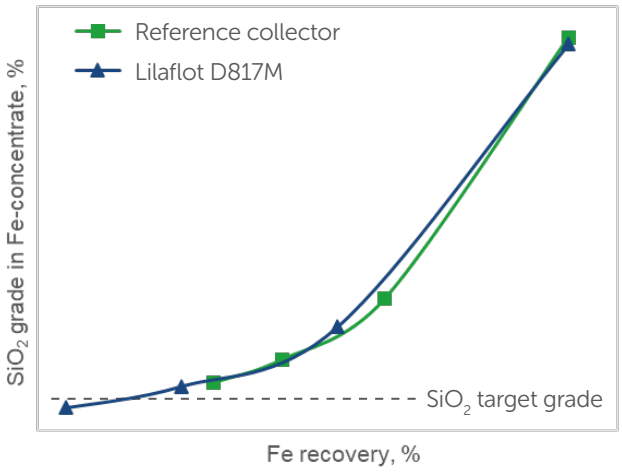
Proven performance

- Improves silica flotation in saline water conditions
- Reaches target grade requirements
- Resistant to Ca/Mg and sulfate interference

Impact

- Improved grade-recovery balance
- Reduced process variability
- Reliable flotation under challenging conditions

Performance that holds—even when water conditions don't.



Stepwise flotation

Reagent addition of 60+30+30 g/t (120 g/t in total)

Review your flotation circuit conditions — request technical guidance at nouryon.com/mining/collectors

Nouryon

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