

Nouryon

Tecflote™ Sulfide Collectors

Mining Chemicals

Nouryon, formerly AkzoNobel Specialty Chemicals, has more than 50 years of experience in the field of flotation collectors for phosphate, potash, calcite and iron ores. Tecflote is a novel, proprietary family of collectors developed for sulfide flotation and associated gold, silver and platinum group metals.

Tecflote is suitable for all sulfides: Cu, CuZn, CuPbZn, PbZn, CuMo and Ni

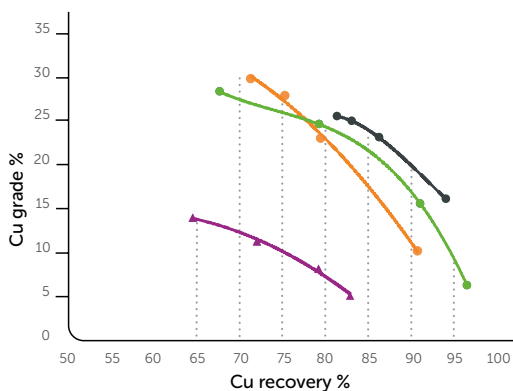
Tecflote - based on nitrile chemistry

Tecflote is designed for flotation of sulfide ore and has a number of unique features vs. traditional collectors:

- A completely different particle/bubble attachment mechanism compared to conventional thiol collectors
- Significantly better performance (selectivity and recovery) for Au and Ag compared to current thiol collectors as nitriles have an affinity to Au and PGM elements
- Excellent discrimination against pyrite (i.e. pyrite is suppressed to tails) at natural pH without lime for many ore types
- Cu flotation: a distinguishing feature is the steep grade recovery curve
- Excellent performance in particular for hypogene ore type

In addition Tecflote is suitable for all sulfides: Cu, CuZn, CuPbZn, PbZn, CuMo and Ni. The stable chemistry allows mixing with other collectors. For some ores the best recovery is obtained with the addition of a conventional scavenger collector. The excellent performance shown in lab test has been confirmed in multiple plant trials.

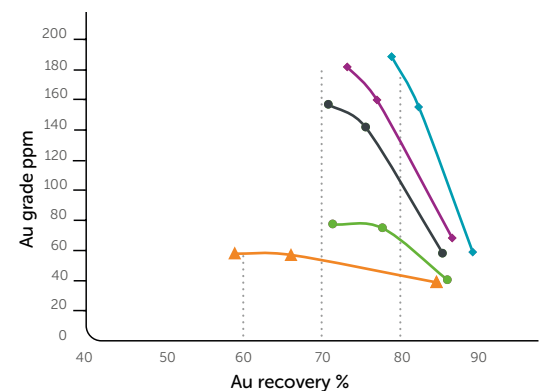
Cu



Feed: Cu as chalcopyrite 1.3%, Fe as pyrite 8.5%
Collector 20g/t, frother: MIBC, lime = pH 10,3

- Tecflote S10 + lime
- Tecflote S10, no lime
- Thiocarbonate/dithiophosphate + lime
- Thiocarbonate/dithiophosphate, no lime

Au



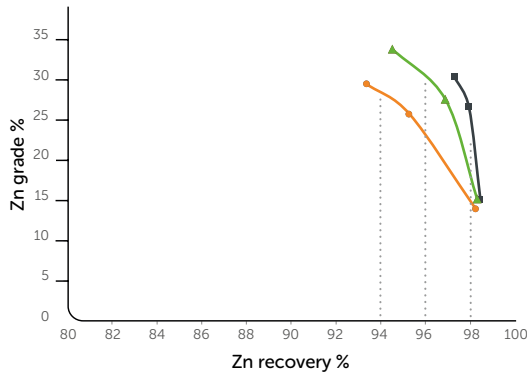
Feed: Cu 0.35%, Au 2.6ppm, Fe as pyrite 7%.
Collector 15g/t, frother: MIBC, lime = pH 10,3

- PAX + lime
- Tecflote S10 + lime
- Tecflote S10, no lime
- Tecflote S11 + lime
- Tecflote S11, no lime

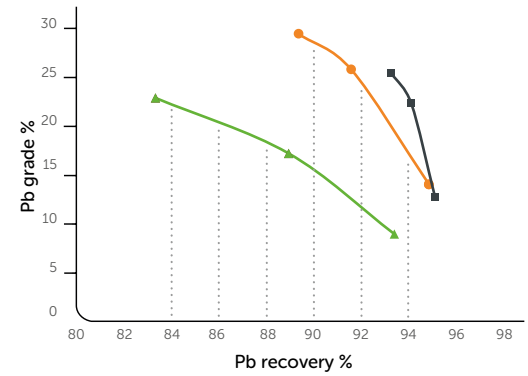
Tecflote has proven to achieve >10% improved recovery after 2 cleaning steps and 4% improved recovery in the rougher in gold flotation lab tests

Outstanding performance for all sulfide ores

Zn



Pb

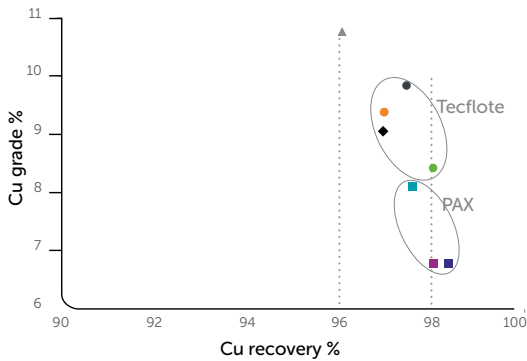


Feed: Zn as sphalerite 0.3%, Pb as galena 1.6%, Fe as pyrite 2.2%

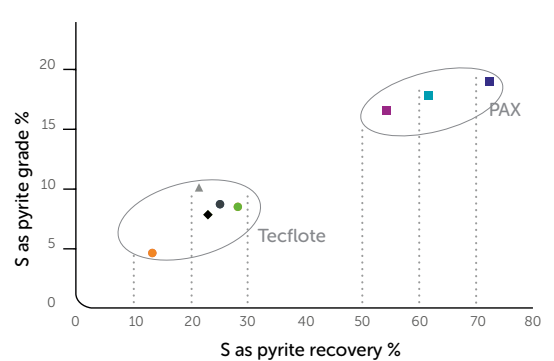
- Tecflote S10
- Tecflote S11
- Tecflote S12

Suitable for fines

Cu



S



Feed: single Cu mineral + pyrite + silicate gangue, Cu as chalcopyrite 0.75%, Fe as pyrite 4.3%

All samples have same silicate gangue. $P_{80} = 31\mu\text{m}$

- Tecflote S10, no lime, 10 g/t
- Tecflote S10, no lime, 20 g/t
- Tecflote S10, no lime, 40 g/t
- PAX + lime, 10 g/t
- PAX + lime, 20 g/t
- PAX + lime, 40 g/t
- Tecflote S11, no lime, 20 g/t
- Tecflote "other", no lime, 20 g/t

Both Tecflote S10 and Tecflote S11 can be used with Cu, Zn, Pb, Mo, Ni, Au, Ag

For more information visit surfacechemistry.nouryon.com

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Winning together -
delivering optimized
performance for your
mineral processing needs