

Maximising potential returns

Mining Refining Application Note

Precious metal recovery from refining streams

About PhosphonicS

At PhosphonicS, our scientists relish the challenge presented by the mining refining industry to recover value from precious metal containing streams. We specialise in designing simple solutions to complex metal recovery problems using the smartest silica technology to optimise results.

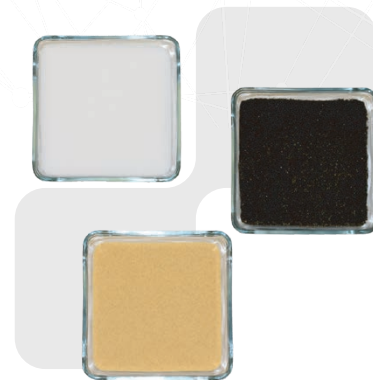


Optimum value recovery

- Highly effective performance
- Best return on investment
- Plant based solution

Introducing PhosphonicS Precious Metal Recovery Products

The Phos series of silica products are designed to recover precious metals from your refinery streams.

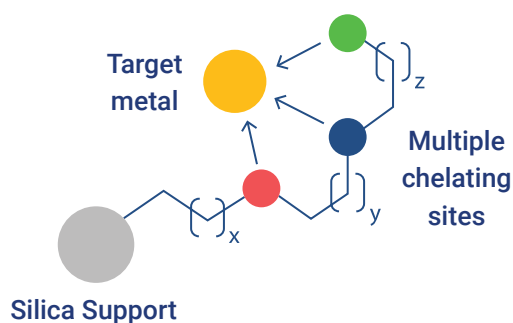


Product code	Product name
Phos-01	Mercaptoalkyl 2 functionalised silica
Phos-02	Aminoalkyl 3 functionalised silica
Phos-03	Aminoalkyl 1 functionalised silica
Phos-04	Mercaptoalkyl 1 functionalised silica
Phos-05	Mercaptoalkyl 4 functionalised silica
Phos-06	Alkyl thiourea functionalised silica

You can order your Phos Screening Kit in a convenient 10g size. Please refer to Phos-Kit 10 when ordering.

What Makes PhosphonicS Unique?

PhosphonicS uses patented technology for attaching powerful ligands to a silica backbone. The ability to incorporate multiple chelating sites enables our silica products to outperform other solid supported products, at every concentration of precious metal in your stream.



Advantages of the Phos series

- More powerful than standard solid adsorbents
- Designed to only recover precious metals
- Superior recovery performance

Advantages of silica as a support

- Highly porous for optimised stream flow
- Stable in both aqueous and organic media
- Larger surface area for higher loading

Order Your Phos Screening Kit

To order your Phos Screening Kit send an email requesting a Phos-Kit 10 to sales@phosphonics.com

Case Studies

PhosponicS in the mining refining industry

The extraction of precious metals from mining deposits is a long and complex process requiring significant capital investment. At PhosponicS, our work in the mining refining industry has provided a deep understanding that, following the electrolytic refining operations, the key is in the sequential solution and precipitation processes to concentrate, extract and purify precious metals. The refining process gives rise to a barrens stream with high base metal and low precious metal concentrations which is not cost effective to treat using established metal extraction processes.

PhosponicS scavengers are highly selective for precious metals over base metals. By working closely with PhosponicS to treat their barrens streams, mining refineries are able to recover additional quantities of precious metals than are available using standard chemical and electrolytic methods thereby maximising their returns from their operations.

Recovering precious metals in the mining refining industry

PhosponicS works closely with technical and production teams at precious metal mining refining companies to carry out comprehensive laboratory testing of refinery streams in order to identify the best scavenger product and operating conditions for treatment of their particular precious metal containing stream. We then support the detailed engineering design and implementation of a complete scavenging solution, from pilot plant scale through to a permanent installation, depending on customer requirements.



Result

- >98 % Pd recovery
- 80 g/kg Pd loading

Stream

- Pd (0.1-5 ppm)
- conc. HCl
- 2.8 m3 treated per hour

Pd recovery from a PMR barrens stream



Result

- >99 % Rh & Ru recovery
- >100 g/kg combined loading

Stream

- Rh & Ru (1000 ppm each)
- conc. H2SO4
- Pre-plant scale

Rh and Ru recovery from a BMR leach stream



Result

- >98 % Pt & Pd recovery
- >95 % Au recovery

Stream

- Pt and Pd (5-150 ppm)
- Au (1-2 ppm)
- conc. HCl
- In test

Pt, Pd and Au recovery from an Au refinery effluent stream

Contact PhosponicS

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