

# Maximising potential returns

## Pharmaceutical Application Note

Metal removal from discovery through to commercialisation

## About PhosponicS

Since 2005, PhosponicS has enabled the pharmaceutical industry to develop life-saving medicines.

Our functionalised silica products extract any unwanted metal species from your APIs, so you meet or exceed regulatory requirements and accelerate drug development to increase your return on investment.

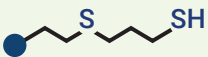
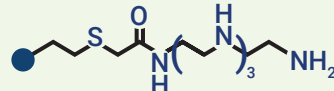
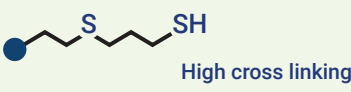
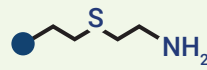
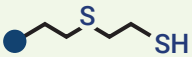
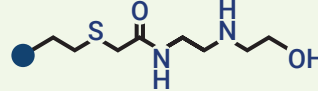
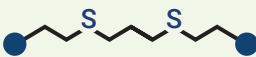
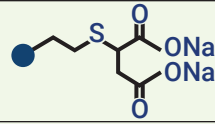
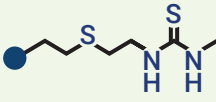
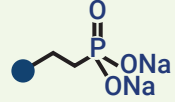
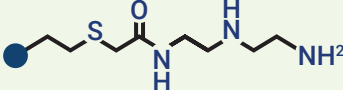
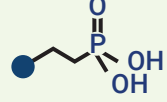


## Superior purification

- Increased speed to market
- Meet, even exceed regulatory requirements
- Fully scalable

## Introducing PhosponicsS Metal Removal Products

PhosponicsS has developed a range of superior performing silica products to meet the highest standards required by the pharmaceutical industry.

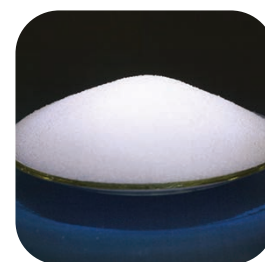
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SPM32		SPA5	
SPM36f		SEA	
SEM26		SDEA	
SPM3		STMS	
MTCf		PO1	
STA3		POH1	

You can order your Customised Metal Removal Test Kit in a convenient 10g size. A selection of silica products will be recommended based on your requirements.

## What Makes PhosponicsS Unique?

PhosponicsS 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 metal in your stream.



### Advantages of PhosponicsS metal removal products

- Superior results consistently achieved across a wide range of APIs
- Higher product yields from your purification process
- Proven track record from lab through to plant scale

### 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

## Case Studies

### PhosponicS supporting the pharmaceutical industry

Transition metal catalysts are widely used in the pharmaceutical industry to carry out an extensive range of coupling reactions and deprotections during early stage research through to full scale manufacturing of APIs.

The effective removal of unwanted traces of metal impurities improves the success rate of meeting stringent regulatory compliance requirements and accelerates drug development and commercialisation.

### Ease of use, flexible formats

PhosponicS can supply scavengers in a wide range of formats for ease of use at different scales of operation.

Our scavengers are most routinely applied in slurry mode with overhead stirring, but increasingly customers are developing more sophisticated methods for API production throughout the drug development process. From SPE cartridges for Med Chem applications through to customised cartridge units for full scale production, we ensure the right solution is tailored to your needs.

### Order Your Customised Metal Removal Kit

To discuss your purification requirements call the number below or send an email to [contact@phosponics.com](mailto:contact@phosponics.com). A customised metal removal test kit containing recommended silica products can then be ordered via [sales@phosponics.com](mailto:sales@phosponics.com).



#### Result

- 22 ppm Rh (within spec.)
- 96% Rh removal
- Fixed bed

#### Stream

- 553 ppm Rh
- API: 4 x 30 kg batches

Rh removal following a chiral coupling reaction



#### Result

- 4 ppm Ru
- >99.5 % Ru removal
- Slurry mode

#### Stream

- 1,500 ppm Ru
- Multi-kilogram batches

Ru removal from an oncology target molecule



#### Result

- 8 ppm Cu
- 99% Cu removal
- Slurry mode, MeCN

#### Stream

- 875 ppm Cu
- Lab scale

Cu removal from an indazole intermediate

## Contact PhosponicS

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