

Polonium Analysis in Complex Samples

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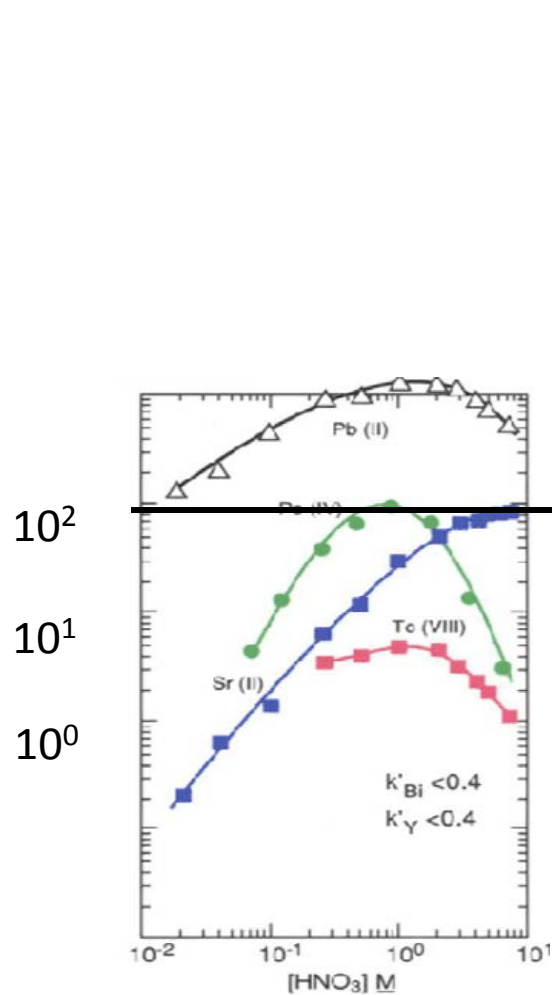
Interdisciplinary Human Toxicology Program

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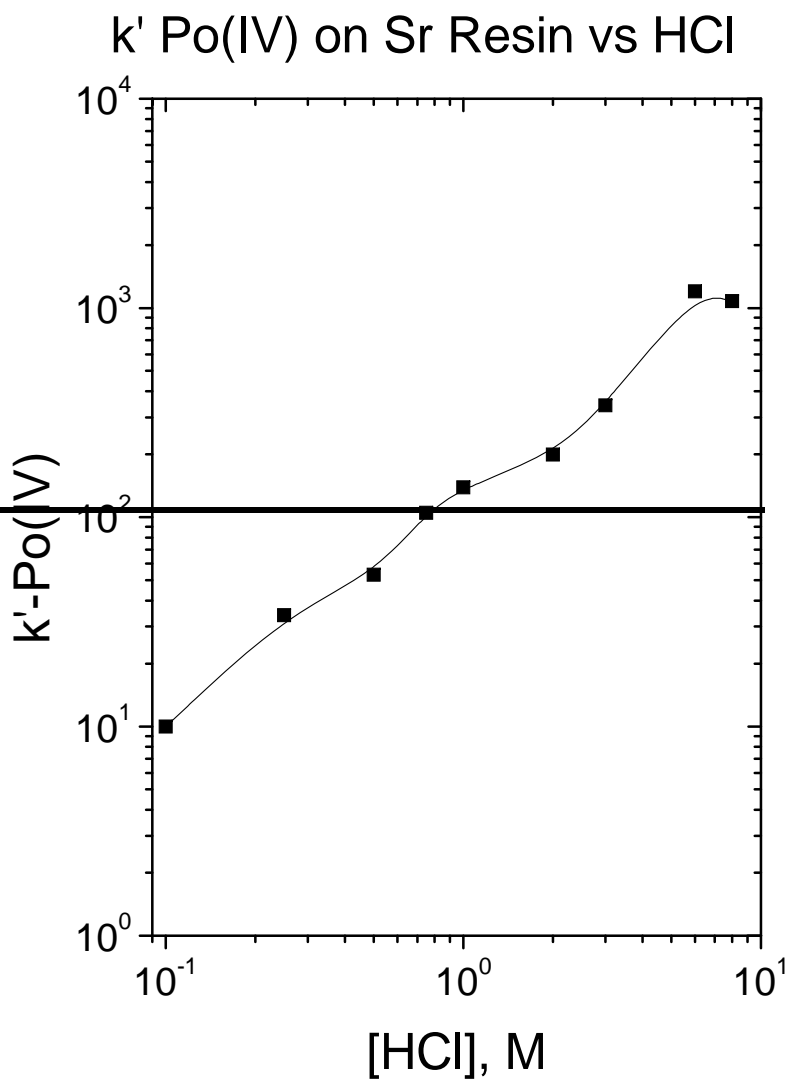
Matrix of Hydraulic Fracturing Flowback Water/Produced Fluids

Analyte	Concentration (mg/L)
Chloride	146,667
Strontium	36,333
Sodium	29,333
Calcium	13,000
Barium	9,000
Magnesium	853
Manganese	3
Iron	43
Total Solids	277,666
Suspended Solids	783

Polonium on SR Resin

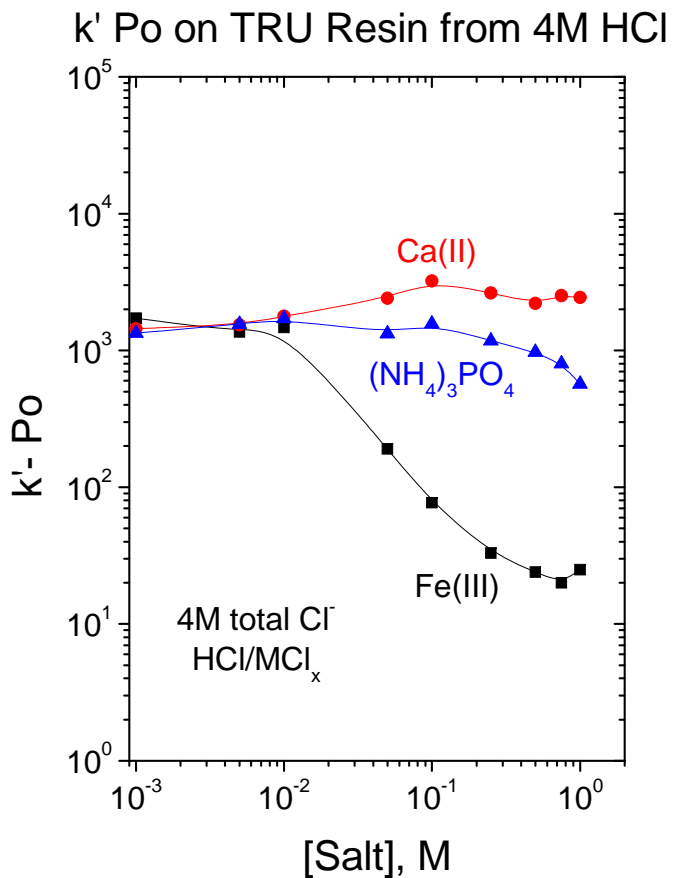


Data from Eichrom Website



Data Provided by Dr. Dan McAlister ³

Ca and Po Retention on TRU

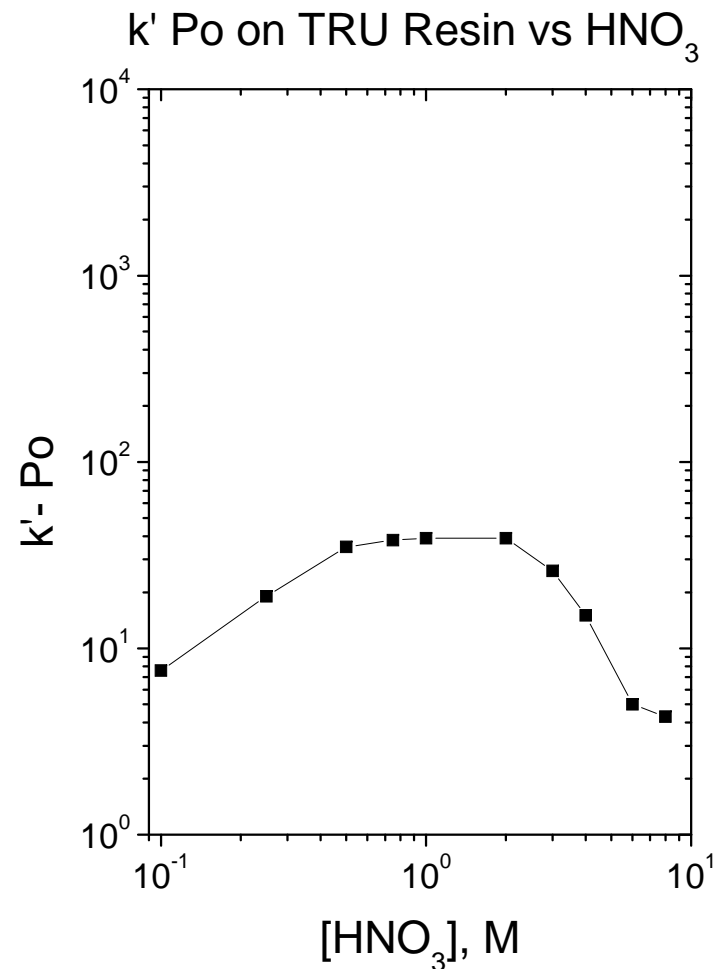
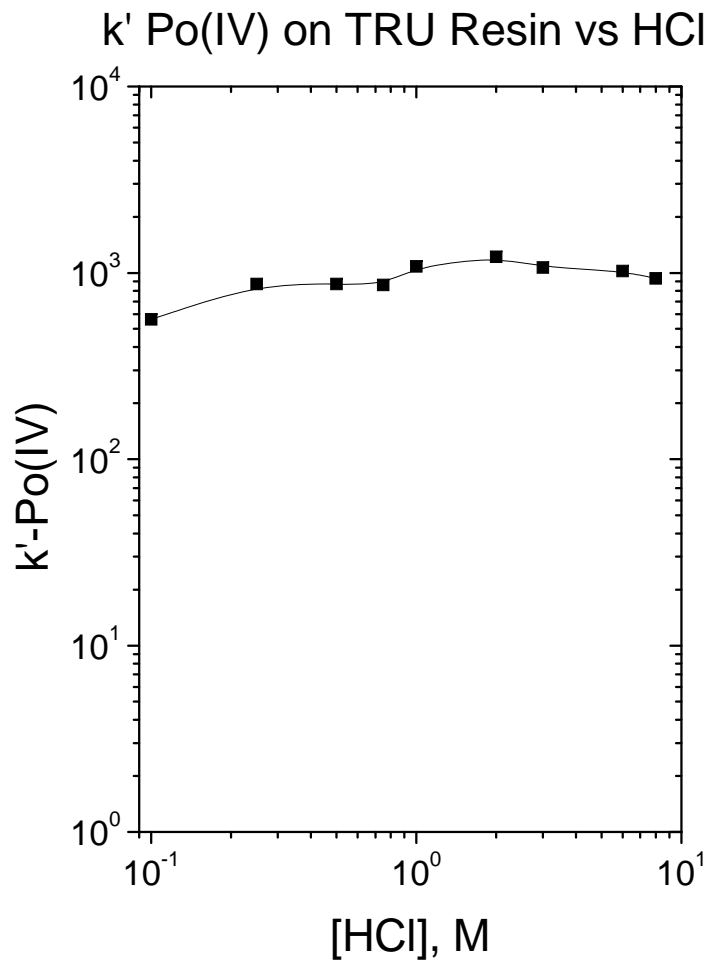


TRU Resin

Data Provided by Dr. Dan McAlister

Analyte	Concentration (mg/L)
Chloride	146,667
Strontium	36,333
Sodium	29,333
Calcium	13,000
Barium	9,000

Polonium on TRU



Data Provided by Dr. Dan McAlister

Polonium on TRU HCl

- Can analyze complex samples
 - Flowback
 - Samples with >20,000 ppm Fe
- After TRU
 - Autodeposition
 - High recoveries >85%
 - CuS microprecipitation



Suggestions to Eichrom

- Provide the Po data in HCl on the TRU website
- Add Po as one of the elements that can be analyzed by TRU

