

# Intertek Minerals

## Cost Effective Exploration Geochemistry 0.5g Aqua Regia Digestion for Multi-elements & Gold



Valued Quality. Delivered.



### Cost Effective, Trace Level Exploration Method

The advent of new analytical technologies coupled with a streamlined, ultra clean aqua-regia digestion provides the best platform for fast, cost effective and consistent, trace level analysis for your exploration samples

### Developments in Aqua Regia Methodology

The aqua regia digestion is a classical, empirical digestion technique that has been used successfully by exploration geologists across the globe for many years. As a mixture of hydrochloric and nitric acids, aqua regia is a powerful oxidizing and complexing agent that can readily dissolve precious metals as well as extract most other elements, to a varying extent, from a wide range of geological sample matrices. Although having its limitations (partial digest technique), by maintaining very precise control over the digestion process and instrumental analysis the highest quality and consistency of data for your projects is achieved.

Until now, the formation of polyatomic molecules and oxide species in the plasma of an ICP-MS has created a higher background “noise” and therefore limited the ability to reduce elemental detection limits. Recent enhancements in inductively coupled plasma, mass spectrometry (ICP-MS) technologies and the associated sample introduction systems have significantly reduced the formation of these interfering species (polyatomics and oxides) in the plasma, vastly improving the signal to noise ratios and allowing detection limits that approach or exceed the crustal abundance concentrations for most elements.

### Introducing the New AR005 Method – The Cost Effective Exploration Tool

Utilising a 0.5g sample, the new AR005 method has been specifically engineered by Intertek Application Chemists to create an exploration tool with an emphasis on long term consistency of quality and meaningful ultra-low level data. With an acidic strength that mimics the larger “traditional” digestions, the data is directly comparable to existing project datasets.

Listed detection limits are commensurate with the crustal abundance of almost all elements. This approach allows for the identification of subtle geochemical trends, delineation of low level anomalies and coupled with exceptional long term precision, the digest facilitates seamless geochemical mapping by eliminating batch effects in spatial geochemical data. The Intertek AR005 development offers the following features:

- Both ICP-MS and ICP-OES finishes are available in customizable packages to suit every budget and exploration application.
- Minimisation of polyatomic species which are the most prevalent form of interference in mass spectrometry.
- Precise control on digestion parameters, instrument stability and instrument sensitivity produce low level data with unparalleled long term reproducibility.
- Ultra clean digestion conditions, coupled with ultrapure reagents eliminate the potential for baseline effects between laboratory batches.
- The AR005 digestion is engineered to closely recover the consensus value on commercially available aqua regia reference materials (CRMs) which facilitates quality assurance.



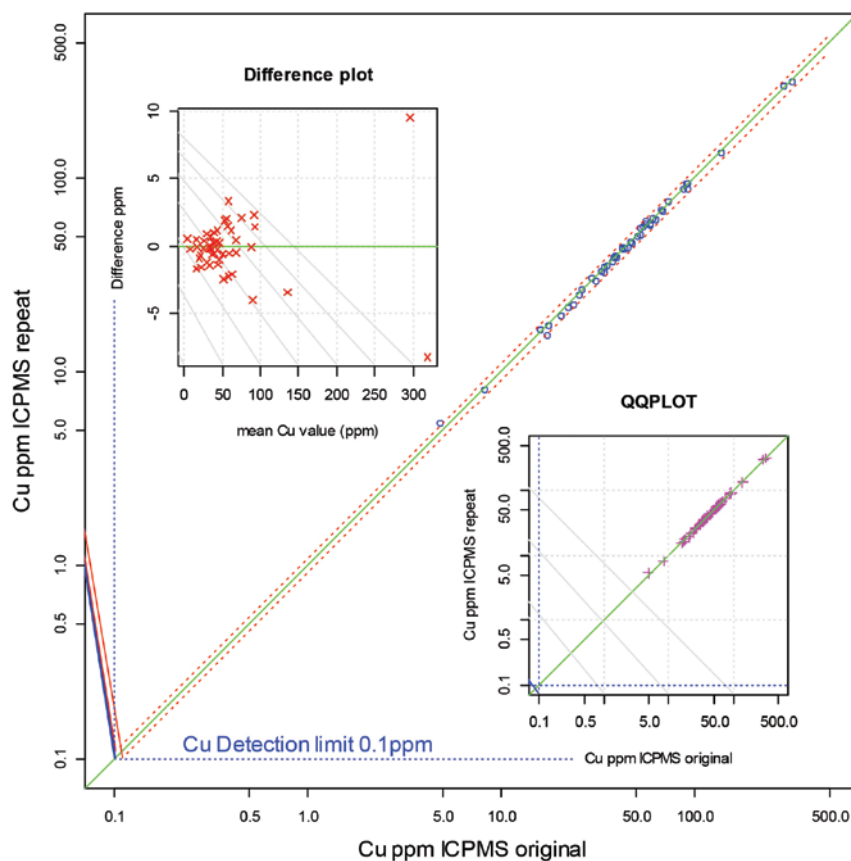
### Aqua Regia 0.5g MS Package - AR005/MS30

Element	Range ppm	Element	Range ppm	Element	Range ppm
Ag	0.05 - 250	Ga	0.1 - 500	Sb	0.05 - 5000
Al	0.01% - 10 %	Hg	0.01 - 100	Sc	0.05 - 200
As	0.2 - 5000	K	0.01% - 10 %	Se	0.1 - 5000
Au	0.5ppb - 5000ppb	La	0.01 - 500	Sr	0.05 - 5000
B	20 - 1%	Mg	0.01% - 20 %	Te	0.05 - 1000
Ba	0.5 - 2000	Mn	0.5 - 1%	Th	0.01 - 500
Bi	0.01 - 5000	Mo	0.02 - 500	Ti	10 - 1%
Ca	0.01% - 40 %	Na	0.001% - 5 %	Tl	0.01 - 1000
Cd	0.01 - 1000	Ni	0.1 - 10%	U	0.01 - 1000
Ce	0.01 - 1000	P	10 - 2%	V	1 - 1000
Co	0.05 - 5000	Pb	0.1 - 5000	W	0.05 - 200
Cr	0.5 - 1%	Pd	5ppb - 5000ppb	Zn	0.5 - 1%
Cu	0.1 - 1%	Pt	2ppb - 5000ppb	Zr	0.05 - 200
Fe	0.01% - 50 %	S	0.05% - 5 %		

Rare earth elements are available as a supplementary package to the AR005/MS30 package.

Element	Range ppm	Element	Range ppm	Element	Range ppm
La	0.01 - 500	Eu	0.01 - 200	Er	0.01 - 200
Ce	0.01 - 1000	Gd	0.01 - 200	Tm	0.01 - 100
Pr	0.01 - 500	Tb	0.01 - 200	Yb	0.01 - 200
Nd	0.01 - 500	Dy	0.01 - 200	Lu	0.01 - 200
Sm	0.01 - 500	Ho	0.01 - 200		

AR005 features low detection limits and long term reproducibility you can trust for all your geochemical mapping applications.



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