

Cu - Au

DIGESTIONS OF OREAS-991 COPPER-GOLD CONCENTRATE USING COLDBLOCKTM DIGESTION CB12L TECHNOLOGY

Authors: Lorie-Anne Doig and Erick Helmeczi

Introduction

This application note will focus on the digestion of Copper-Gold Concentrate using ColdBlockTM Digestion CB12L Technology.

Method

Triplicate samples of CRM (Certified Reference Material) OREAS-991 (ORE Research & Exploration) were weighed to 0.25g & 30g, placed in ColdBlockTM Digestion vessels and digested using the following methods:

- 0.25g method: 12mL iAR (inverse aqua regia) digested at 65% power for 15 minutes. Chiller temperature was set to -5° Celsius. After digestion, 0.25g samples were normalized to 50 mL with 20% HCl.
- 30g method: 160mL iAR digested at 65% power for 15 minutes. Chiller temperature was set to -5° Celsius. After digestion, 30g samples were normalized to 200mL with 20% HCl.

All samples were centrifuged and analyzed on the Agilent 5100 ICP-OES or Perkin Elmer Elan DRC II.

Table 1: OREAS-991 Certified Values of Major Elements

Au %	0.004704
Ag %	0.004814
Cu %	20.66

Results

Table 2: ColdBlock™ Digestion CB12L Recoveries (%) of Small Sample Size (0.25g) OREAS-991

ColdBlock CB12L	Average %	Standard Deviation	% Recovery	Method
Au	0.004969	0.0001	106	iAR
Ag	0.004903	0.0001	102	iAR
Cu (*324.754)	20.64	0.223	100	iAR

**OES Wavelength - Au & Ag analyzed by ICP-MS*

Table3: ColdBlock™ Digestion CB12L Recoveries (%) of Large Sample Size (30g) OREAS-991

ColdBlock CB12L	Average %	Standard Deviation	% Recovery	Method
Au	0.00468	0.00004	99	iAR
Ag	0.00488	0.00001	101	iAR
Cu (*324.754)	20.73	0.0321	100	iAR

**OES Wavelength - Au & Ag analyzed by ICP-MS*