ColdBlock™ Technologies Inc.

APPLICATION NOTE

Geostats – GCr-06 – Chromite

SUMMARY

The application note summarizes the digestion of GCr-06, a Chromite pulp Certified Reference Material using ColdBlock™ Digestion Pro Series Technology.

Instrument:	ColdBlock CBM sample digester, chiller, Quartz vessels, ICP-OES
Published:	February 2023
Digestion Time:	20 Minutes
Acid Used:	H_3PO_4 & H_2SO_4
Average ColdBlock Recovery vs. CRM:	■ 99% Chromium ■ 99% Iron ■ 100% Magnesium

METHODOLOGY

1. Chiller temperature was set to -5°C
2. 0.25g of sample was weighed and placed into a ColdBlock™ Digestion vessel
3. 8mL of H_3PO_4 & 4mL H_2SO_4 was added
4. Sample was digested at 80% power for 20 minutes
5. Samples were cooled and bulked to 100 mL using 2% HNO_3

DISCUSSION

- Phosphoric acid can etch borosilicate glass so ColdBlock's Quartz test tubes were used
- After 20 minutes, samples are green in color and no solid material remains
- Samples were analyzed by ICP-OES

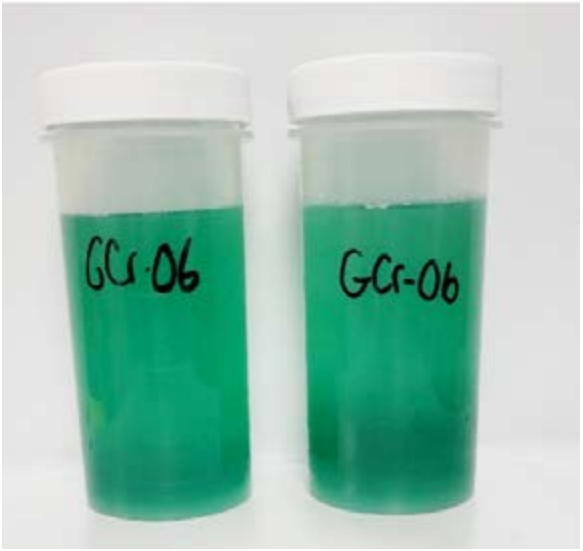

Figure 1 – GCr-06 after bulk-up to 100mL

Prior to homogenization and testing, this material was sourced from Pulp Chromite

geostats.com.au

GCr-06;Pulp Chromote; Geostats Pty Ltd, Mining Industry Consultants; O'Connor, Western Australia (December, 2010)

Geostats – GCr-06 – Chromite

Results

Geostats – GCr-06 – Chromite Pulp										
Method:	**0.25g**	**8mL H_3PO_4 – Digested at 80% power for 20 minutes**								
Element	**Certified XRF Value (%)**	**95% Confidence Limits**		**Sample A**	**Sample B**	**Sample C**	**Average (ppm)**	**Stdev**	**% RSD**	**% Recovery vs certified XRF**
		Low	**High**							
Al_2O_3	8.72	8.68	8.76	8.68	8.69	8.68	8.68	0.005	0.1	100%
Cr_2O_3	47.92	47.72	48.12	47.61	47.55	47.64	47.60	0.037	0.1	100%
Fe_2O_3	28.8	28.7	28.9	28.74	27.79	29.02	28.52	0.526	1.8	99%
MgO	9.01	8.96	9.06	8.92	8.99	9.01	8.97	0.039	0.4	100%
MnO	0.716	0.709	0.723	0.734	0.745	0.729	0.736	0.007	0.9	103%
TiO_2	0.343	0.337	0.349	0.329	0.339	0.341	0.336	0.005	1.6	98%

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