

OREAS 999 Spodumene Concentrate

SUMMARY

The application note summarizes the digestion of OREAS 999, a Spodumene Concentrate Certified Reference Material using ColdBlock™ Digestion CBM Technology.

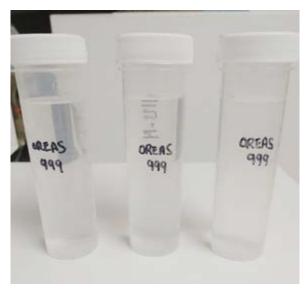
Instrument:	ColdBlock CBM sample digester, chiller, HF liners, ICP-OES
Published:	November 2022
Digestion Time:	30 Minutes
Acid Used:	Aqua Regia, HF & H ₃ BO ₃
Average ColdBlock Recovery vs. CRM:	99% Lithium97% Calcium105% Magnesium

METHODOLOGY

- 1. Chiller temperature was set to -5°C
- 2. 0.25g of each sample was weighed in triplicate and placed into ColdBlock™ Digestion HF compatible liners
- 3. 20 mL Aqua Regia + 3mL Hydrofluoric Acid was added
- 4. Sample was digested at 80% power for 20 minutes
- 5. 20mL of 4% Boric Acid was added, and sample was digested again at 80% power for 10 minutes
- 6. Sample was cooled and bulked to 50mL using 2% HNO_{3 v/v}

DISCUSSION

- The addition of Boric Acid will help re-solubilize any Fluoride precipitates that form such as Ca, Mg & Al
- After 30 minutes the samples appear clear, and no visible material remains



OREAS 999 after bulk-up

OREAS 999 is a spodumene concentrate derived from the processing of lithium pegmatite ores sourced from the Greenbushes area of Southwestern Australia

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Results

OREAS 999 20mL AR + 3mL HF - 80% 20 minutes + 20mL 4% H₃BO₃ 80% 10 minutes ColdBlock ColdBlock ColdBlock Certified Average % Element Stdev Result C **RSD** 4-Acid (ppm) Result A Result B (ppm) Recovery Αl 107700 111155 112839 115408 113134 1749 1.5% 105% 4343 97% Ca 4500 4313 4307 4407 46 1.1% 16200 16043 16231 16638 16304 248 101% Fe 1.5% 4941 96% Κ 5000 4593 4795 4777 143 3.0% Mg 4100 4359 4395 4134 4296 115 2.7% 105% 6930 6555 6781 6663 92 1.4% 96% Na 6653 Li 26500 25858 26199 26855 26304 414 99% 1.6%