

APPLICATION NOTE

OREAS-133B

ZINC-LEAD-SILVER SULPHIDE ORE



SUMMARY

This application note is for the digestion of OREAS-133B, a Zinc-Lead-Silver Sulfide Ore.

Instrument: ColdBlock CB12 sample digester technology, chiller, ICP-MS

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Digestion Time: 15 Minutes

Acid Used: Aqua Regia

Average ColdBlock Recovery vs. CRM:

- 101% Zinc
- 100% Lead
- 102% Silver

METHODOLOGY

1. Chiller temperature was set to -5°C
2. 0.25g of OREAS-133b was weighed (in duplicate) and placed into a ColdBlock digestion vessel
3. 15mL of Aqua Regia was added (HNO₃ is added first, followed by the HCl)
4. Sample was digested at 90% power for 15 minutes
5. Sample was cooled and bulked to 50mL using 2% HNO₃ v/v

DISCUSSION

- Upon addition of HNO₃, the evolution of reddish brown (NO₂) fumes occurred
- The evolution of NO₂ fumes subsided near completion of the digestion, and the fumes turned white
- This method is suitable for aqua regia leachable elements, but hydrofluoric acid can be added for a total digestion



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ColdBlock™
Technologies Inc.

RESULTS

Table 2: ColdBlock™ Digestion CB12L (%)
Recoveries of Large Sample Size (0.25g) OREAS-133B

Elements	Copper (ppm)	Iron (wt.%)	Lead (ppm)	Silver (ppm)	Zinc (ppm)
Expected CRM Value	332	8.16	5.07	100	11.12
ColdBlock Value 1	316	7.87	5.05	101	11.27
ColdBlock Value 2	320	7.96	5.04	103	11.24
Average ColdBlock Value	318	7.92	5.05	102	11.3
% Recovery	96%	97%	100%	102%	101%
RSD	1%	1%	0.1%	1%	0.1%



OREAS 133b is one of 8 pigeon paired CRM's prepared from zinc-lead mineralised material from Xstrata's Black Star and George Fisher orebodies, Mt Isa, NW Queensland, Australia. The orebodies are sediment hosted 'SEDEX' Zn-Pb-Ag deposits located within the Urquart Shale Formation of the Mount Isa Group, a weakly metamorphosed, 5 km thick sequence composed predominantly of Mesoproterozoic carbonate siltstones, mudstones and shales.

Zinc-Lead-Silver Sulphide Ore Concentrate
OREAS-133b after digestion