ColdBlock™ Technologies Inc.

APPLICATION NOTE

Superphosphate & Potassic Super Fertilizer

SUMMARY

This application note summarizes the digestion of Superphosphate & Potassic Super Fertilizers using ColdBlock™ Digestion CB15S Technology.

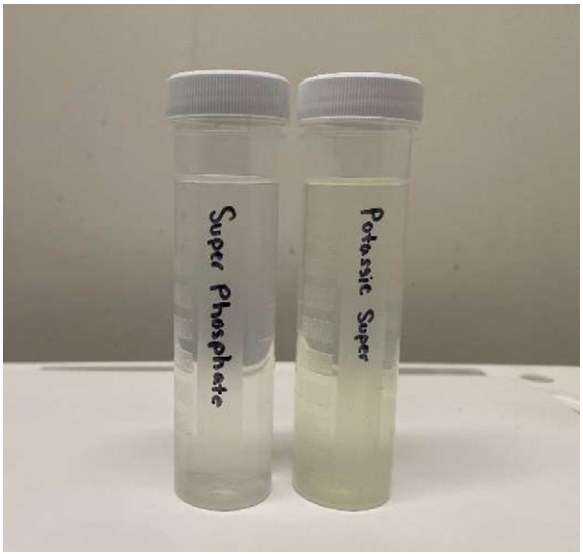
Instrument:	ColdBlock CB15S sample digester, chiller, ICP-OES
Published:	September 2022
Digestion Time:	20 Minutes
Acid Used:	Aqua Regia
Average ColdBlock Recovery vs. CRM:	■ 98% Calcium ■ 99% Phosphorus ■ 93% Potassium

METHODOLOGY

1. Chiller temperature was set to 5°C
2. 0.5g of each sample was weighed and placed into a ColdBlock™ Digestion vessel
3. 20ml Aqua Regia was added
4. Sample was digested at 80% power for 20 minutes
5. Sample was cooled and bulked to 50mL using 2% HNO3 v/v

DISCUSSION

- After 20 minutes the samples were clear, and no visible sample material remains



Superphosphate and Potassic Super after bulk up

Superphosphate & Potassic Super Fertilizer

Results

Superphosphate Fertilizer					
Method:	05.g	20mL Aqua Regia – Digest at 80% for 20 minutes.			
Element	Reference Value (ppm)	ColdBlock Average (ppm)	Stdev	% RSD	% Recovery
Ca	214680	**211205**	2196	0.5	**98%**
Cd	18.22	**16.84**	0.07	0.7	**92%**
P	94860	**94293**	633	1	**99%**

Potassic Super					
Method:	05.g	20mL Aqua Regia – Digest at 80% for 20 minutes.			
Element	Reference Value (ppm)	ColdBlock Average (ppm)	Stdev	% RSD	% Recovery
Ca	197140	**194892**	165	0.1	**99%**
Cd	19.94	**18.24**	0.685	3.8	**91%**
K	104160	**96619**	3360	3.5	**93%**
P	83740	**80356**	3959	4.9	**96%**

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