



SWEP
PTY. LTD.

ABN 26 005 031 569

**ANALYTICAL
LABORATORIES**

Tel: (03) 9701 6007
Fax: (03) 9701 5712

REPORT ON SAMPLE OF LIME

FILE NO : 2109163527

DATE ISSUED : 17/09/2021

TOWNSVILLE LIME & GYPSUM
PO BOX 1590

CLIENT ID : TLG001
PHONE : 0427 008 856

INNISFAIL, QLD 4860

REFERENCE :

REFERENCE ID :

SAMPLE ID : LIME

PHONE :

ANALYSIS REQUIRED : Full & Heavy Metals

DATE RECEIVED : 14/09/2021

ITEMS	ABBREVIATION	UNIT	RESULTS	
TOTAL CALCIUM	Ca	%	38	
TOTAL MAGNESIUM	Mg	%	0.125	
TOTAL SODIUM	Na	%	0.00458	
TOTAL POTASSIUM	K	%	0.0307	
TOTAL NITROGEN	N	ppm	31.1	
TOTAL PHOSPHORUS	P	ppm	27.3	
TOTAL IRON	Fe	ppm	1110	
TOTAL MANGANESE	Mn	ppm	98.5	
TOTAL ZINC	Zn	ppm	3.59	
TOTAL COPPER	Cu	ppm	2.41	
TOTAL COBALT	Co	ppm	0.166	
TOTAL BORON	B	ppm	2.2	
TOTAL SULPHUR	S	%	0.00688	
TOTAL MOLYBDENUM	Mo	ppm	< DL	DL=0.0005
CALCIUM CARBONATE	CaCO ₃	%	95	
	(Calculated from Total Calcium)			
MAGNESIUM CARBONATE	MgCO ₃	%	0.438	
	(Calculated from Total Magnesium)			
MATERIAL > 2mm		%	Nil	
MATERIAL 1.00 - 2.00 mm		%	Nil	
MATERIAL 0.85 - 1.00 mm		%	Nil	
MATERIAL 0.30 - 0.85 mm		%	36.4	
MATERIAL 0.075 - 0.30 mm		%	30.5	
MATERIAL < 0.075mm		%	33.1	
Electrical Conductivity		µS/cm	96.9	
pH		(1:5 Water)	9.04	

DL= Detection Limit

ITEMS	ABBREVIATION	UNIT	RESULTS
NEUTRALISING VALUE	NV	%	95.5
EFFECTIVE NEUTRALISING VALUE	ENV	%	81.6
MOISTURE CONTENT	MC	%	Nil
TOTAL MERCURY	Hg	ppm	0.00744
TOTAL LEAD	Pb	ppm	0.174
TOTAL CADMIUM	Cd	ppm	0.0155
TOTAL ARSENIC	As	ppm	0.0943
TOTAL NICKEL	Ni	ppm	0.533
TOTAL CHROMIUM	Cr	ppm	0.876

Notes on Neutralising Value

Neutralising Value is a measure of the amount of acidity a material can neutralise, or in the case of lime, its total liming value. An approximation of Neutralising Value can be made by $\text{CaCo}_3 + (2.5 \times \text{MgO})$.

Effective Neutralising Value is a calculated adjustment of the Neutralising Value, using the fineness of the lime. Lime retained on an 850 μm sieve (the coarser fraction) is estimated to be only 10% effective (fully utilised in the short term). Lime in the 300-850 μm sieve range (medium sized fraction) is estimated to be only 60% effective, while lime passing the 300 μm sieve (finer fraction) is estimated to be 100% effective.

Where a lime has a low Effective Neutralising Value (due to a high proportion of coarse fraction), further grinding should increase its effectiveness to change the pH.

ITEMS	ANALYTICAL METHODS
TOTAL CALCIUM	HCl Evaporation, ICPAES
TOTAL MAGNESIUM	HCl Evaporation, ICPAES
TOTAL SODIUM	HCl Evaporation, ICPAES
TOTAL POTASSIUM	HCl Evaporation, ICPAES
TOTAL NITROGEN	Dumas method, LECO
TOTAL PHOSPHORUS	HCl Evaporation, ICPAES
TOTAL IRON	HCl Evaporation, ICPAES
TOTAL MANGANESE	HCl Evaporation, ICPAES
TOTAL ZINC	HCl Evaporation, ICPAES
TOTAL COPPER	HCl Evaporation, ICPAES
TOTAL COBALT	HCl Evaporation, ICPAES
TOTAL BORON	HCl Evaporation, ICPAES
TOTAL SULPHUR	HCl Evaporation, ICPAES
TOTAL MOLYBDENUM	HCl Evaporation, ICPAES
CALCIUM CARBONATE	Calculated from Total Calcium
MAGNESIUM CARBONATE	Calculated from Total Magnesium
Electrical Conductivity	Method 3A1, water extract*
pH	Method 4A1, water suspension*
MOISTURE CONTENT	Gravimetric method

* Rayment, G.E. & Lyons, D.J. (2011). Soil Chemical Methods - Australasia. CSIRO Publishing, 150 Oxford Street, Collingwood Vic 3066, Australia.