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ASPAC

Analysis of Powder Laundry Detergent

Client Lightning Products Pty Ltd Altona VIC 3018 Date..14th May 2008

Sample of Laundry Powder - Euca Supersoaker Laundry Bleach

Measure: 1 scoop = 22.42 g Analysis completed 10th May 2008

RESULTS - TOP Loading washing machines - **WASH CYCLE**

Parameter	*Result*	*Median*	*Average*	*Units*	*Method*
Lab. Reference No.		All powders as listed on website			
mass per load	11.21	86.7	80.4	g/load	from manufacturer
mass/water ratio	0.188	1.45	0.34	g/litre	calculation
pH	10.33	10.55	10.52	units	APHA:4500 H^+
Elect. cond. (EC)	0.380	1.80	1.72	dS m^{-1}	APHA:2510
Total dissolved solids TDS	255	1200	1150	mg L^{-1}	calculation
Turbidity	2	5	5	NTU	Turbidity meter
Salinity hazard	low	high	high		
Sodium (Na^+) in wash water	79.4	438	420	mg L^{-1}	APHA:3120
Sodium **load/wash**	4.8	26.3	215.2	g/ wash	calculation
Sodium adsorption ratio SAR	see note below				calculation
Alkalinity (pH 4.5)	113	550	575	mg L^{-1}	APHA:2320
Phosphorus in wash water	5.5	59.0	55.7	mg L^{-1}	APHA:3120
Phosphorus **load/wash**	0.33	3.54	3.34	g/wash	calculation
Sulphur ($SO_4^=$-S)	9.9	73.2	79.5	mg L^{-1}	APHA:3120
Boron	<0.03	<0.01	0.39	mg L^{-1}	APHA:3120

<0.x = measured but reading below detection level mg L^{-1} = part per million

Reference: APHA, 2005 Standard Methods for the Examination of Water and Wastewater. 21st Edition

General comments. A bulk sample was taken using the scoop provided and a weight taken. Sample dissolved in deionised water at the rate calculated for a top loading washing machine based upon 60L for the wash cycle. The sample was agitated for 30 minutes and the pH, EC and turbidity measured within 30 minutes.The samples were acidified to pH <2 with nitric acid, filtered and elements determined by inductively coupled plasma.

Results in load/wash for sodium and phosphorus are the same whether reported for wash only or full cycle.**Comparison with results for 2007 detergents research (35 products)**

Sodium Adsorption Ratio (SAR) not possible to calculated because of the absence of Calcium and Magnesium salts in the wash water. Useful to calculate SAR when used with municipal water, but will change with various levels of hardness and composition of clean water.