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Analysis of AUTOMATIC DISHWASHING Detergent

Client Envirocare RMB 156 Darkan WA 6392 Date..14th May 2008

Sample of ADW Powder - Envirocare white dishwashing tablet

Measure: 1 tablet per normal wash

Analysis completed 21 June 2009

RESULTS -Dishwashing Detergent

Parameter	Result	Median	Average	Units	Method
Lab. Reference No.					
mass per load	18.92	49.20	48.20	g/load	from manufacturer
pH	7.61	10.99	11.03	units	APHA:4500 H ⁺
Elect. cond. (EC)	1.25	2.71	3.20	dS m ⁻¹	APHA:2510
Total dissolved solids TDS	592	1840	2176	mg L ⁻¹	calculation
Turbidity				NTU	turbidity
Salinity hazard	moderate	high	high		
Sodium (Na ⁺)	362	572	590	mg L ⁻¹	APHA:3120
Sodium Load	5.4	10.3	10.6	g/ wash	calculation
Sodium adsorption ratio SAR	see note below				calculation
Alkalinity (pH 4.5)	350	935	1020	mg L ⁻¹	APHA:2320
Phosphorus	2.3	116.4	112.8	mg L ⁻¹	APHA:3120
Phosphorus load/wash	0.03	2.1	2.0	mg L ⁻¹	calculation
Sulphur (SO ₄ ⁼ -S) in wash	35.8	116	153	mg L ⁻¹	APHA:3120
Boron	<0.01	<0.01	<0.01	mg L ⁻¹	APHA:3120

<0.x = measured but reading below detection level

mg L⁻¹ = part per million

Reference: APHA, 1995 Standard Methods for the Examination of Water and Wastewater. 19th Edition

General comments. The tablet was powdered and a sample dissolved in deionised water at the rate calculated for an automatic dish washer of 15 L total water use. 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.

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



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