

Phone Office/Lab (02) 6775 1157
 Fax (02) 6775 1043
 ABN: 72 212 385 096
 email: rob@lanfaxlabs.com.au
 Website: <http://www.lanfaxlabs.com.au>
 Lab address: 493 Old Inverell Road
 Postal: PO Box W90 Armidale NSW 2350
 Director: Dr Robert Patterson FIEAust, CPSS, CPAg
 Soil Scientists and Environmental Engineers



Accredited by Aust. Soil & Plant Analysis Council



Analysis of Laundry Detergent

Client Enviroballs Australia

Date..4th May 2008

Laundry Sample received 10th April 2008

Analysis completed 4 May 2008

Laundry product: yellow Enviroball

RESULTS - Front Loading washing machines 50 L per full cycle

Parameter	Result	Median	Average	Units	Method	
Lab. Reference No.	0405LP1	All Liquids as listed on website				
volume per load	not stated	60	62.1	mg/load	from manufacturer	
pH	5.65 **	8.17	7.95	units	APHA:4500 H ⁺	
Elect. cond. (EC)	12 **	0.070	0.095	dS m ⁻¹	APHA:2510	
Total dissolved solids TDS	7	45	65	mg L ⁻¹	calculation	
Turbidity	1	1	1	NTU		
Salinity hazard	extremely low	very low	very low			
Sodium (Na ⁺)	<0.01	19.2	24.2	mg L ⁻¹	APHA:3120	
Sodium Load	<0.01	1.44	1.82	g/ wash	calculation	
Sodium adsorption ratio SAR	see note below				calculation	
Alkalinity (pH 4.5)	<1	30	38	mg L ⁻¹	APHA:2320	
Phosphorus	<0.01	0.045	7.73	mg L ⁻¹	APHA:3120	
Sulphur (SO ₄ ⁼ -S)	0.03	4.2	6.2	mg L ⁻¹	APHA:3120	
Bacteria killing power	none					

<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. ** insignificant change from property of the rainwater

The Enviroball was agitated in 1L deionised water at 20°C for 30 minutes. Electrical conductivity of 1 L sample was 185 uS/cm and pH 8.87. The sample was then diluted to represent 50 L for a wash cycle from a front loading washing machine and the above results are presented. In a top loader these results would be less again because of the almost double volume of water per wash, but the load on the environment would be the same.

A small amount of calcium (32 mg/L) and potassium (6 mg/L) were measured in the 1 L sample, but are of no consequence at the washing volume. Neither is an environmental hazard.

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



Disinfection. A sample of water from the maturation ponds of the Armidale sewage treatment works was mixed with the diluted sample (to represent the washing volume). The sample was incubated according to Standard Methods and the thermotolerant coliforms counted after 24 hours incubation at 44°C. The difference in count between the original sample and the treated sample suggests that the wash water is not a good disinfectant. It would be inaccurate to suggest that the wash water acts as a disinfectant for *E.coli*, since they are a member of the thermotolerant group.

Conclusion:

The wash water from the use of an Enviroball is unlikely to have any detrimental effect upon soil when disposed of as greywater from a normal washing machine and spread over a garden or lawn. The amount of sodium is minute in comparison with the sodium that is present in most drinking water supplies and the addition (4 mg/load) is unlikely to have any detrimental effect that isn't already in the drinking water. The changes to pH and total alkalinity are minor and unlikely to represent any hazard to plants or soil.

Dr Robert Patterson
Director

Note: This report may not be used to represent any recommendation or endorsement of the product tested. The Enviroball was tested and the results reported for the tests undertaken, No performance testing for its washing action was done.