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ANALYSIS REPORT

CLIENT:	Eclipse	REPORT NO:	2021_0457
TEST REQUEST:	AS 4454-2012 suite ⁽¹⁾ excluding wettability	LAB SAMPLE ID:	2021_0457
ADDRESS:	40 Subiaco Square Rd, Subiaco WA	DATE RECEIVED:	23/03/2021
CLIENT SAMPLE ID:	Hardwood Chip Mulch	DATE TESTED:	24/03-13/04/2021
SAMPLING LOCATION:	Abercrombie	DATE REPORTED:	13/04/2021

TEST RESULTS

Analyte	Result	Unit	AS4454 Compliance Requirement
			Raw mulch
Electrical Conductivity	0.217	mS/cm	≤10
pH	8.22		> 5
Ammonium-N (in extract)	0.06	mg/L	NA
Ammonium-N (dry weight)	0.325	mg/kg	
Nitrate-N (in extract)	0.012	mg/L	
Nitrate-N (dry weight)	0.065	mg/kg	NR
Total N (dry weight)	0.757	%	≥ 0.8 ⁽²⁾
Phosphate-P (in extract)	0.156	mg/L	≤ 5 ⁽³⁾
Phosphate-P (dry weight)	0.844	mg/kg	
Total P (dry weight)	0.012	%	≤ 0.1 ⁽³⁾
Carbon (dry weight)	47.5	%	≥ 20
C:N Ratio	62.7		
Organic Matter (dry weight)	80.7	%	
Calcium (dry weight)	3250	mg/kg	
Magnesium (dry weight)	298	mg/kg	
Sodium (dry weight)	449	mg/kg	NR
Potassium (dry weight)	177	mg/kg	
Chemical Contaminants⁽⁵⁾			
Arsenic	<0.01	mg/kg	≤ 20
Cadmium	<0.01	mg/kg	≤ 1
Chromium	1.33	mg/kg	≤ 100
Copper	0.540	mg/kg	≤ 150 ⁽⁶⁾
Lead	<0.01	mg/kg	≤ 150
Mercury	0.03	mg/kg	≤ 1
Nickel	3.86	mg/kg	≤ 60
Zinc	6.83	mg/kg	≤ 300 ⁽⁶⁾



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TEST RESULTS

Analyte	Result	Unit	AS4454 Compliance Requirement
2021_0172 Hardwood Chip Mulch			Raw mulch
Phytotoxicity	150	Growth Index %	NR
Apparent Density	0.29	kg/L	
Dry Bulk Density	0.17	kg/L	
Moisture content (as received)	40.9	%	NR
Particle Size Grading			
• > 16mm	37.44	%	
• > 5mm to < 16mm	59.51	%	
• < 5mm	3.05	%	
Physical Contaminants			
• glass, metal and hard plastic > 2mm	0	%	≤ 0.5
• light plastic, plastic film > 5mm	0	%	≤ 0.05
• stones and clods of clay >5mm	0.19	%	≤ 5

1) Appendix D includes the following parameters not tested by Bioscience Pty. Ltd.: boron, selenium, molybdenum, organohalides, chlorinated organic pesticides (OCPs), polychlorinated biphenyls (PCBs), and pathogens (Salmonella, Escherichia coli, thermotolerant coliforms).

(2) If a contribution to plant nutrition is claimed.

(3) For products that claim to be for P-sensitive plants.

(4) If applied to sandy soils.

(5) Where there are no currently applicable federal and state or territory provisions for composts, soil conditioners and mulches, products shall comply with the list of chemical contaminant upper limit values and labelling provisions as listed here. Note: non-conformance with this Standard does not indicate that the product may not otherwise be suitable for a range of specified applications that comply with other state or territory government regulations, guidelines or specified end user requirements. (From AS 4454-2012 Clause 2.1).

(6) A product that contains levels of total copper between 100-150 mg/kg and/or total zinc between 200-300 mg/kg (dry weight) whilst not exceeding the limit values, shall provide a warning label in accordance with the labelling requirements of Clause 5.3 of AS 4454-2012.

NA = Not applicable for raw mulch, NR = No requirement for raw mulch

Analysis: Sample was processed and sampled in accordance with AS 4454-2012 Standards. Electrical conductivity, pH, Ammonium-N, Nitrate-N and Phosphate-P AS 4454-2012 Appendix B. Total N, Carbon, C:N Ratio calculation, Organic Matter calculation AS 4454-2012 Appendix C. Total P, calcium, magnesium, sodium, potassium, arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc AS 4454-2012 Appendix D. Phytotoxicity/Bioassay alternate method AS 4454-2012 Appendix F as per Zucconi et al. 1981. Wettability AS 4454-2012 Appendix E. Apparent density and dry bulk density calculation AS 4454-2012 Appendix J. Moisture content AS 4454-2012 Appendix I. Particle size grading AS 4454-2012 Appendix G. Contamination AS 4454-2012 Appendix I.

These results reflect our findings for the received sample only.

Tested by: MV, SM, NG

Date: 24/03-13/04/2021

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