

AS4454:2012 COMPOSTS, SOIL CONDITIONERS AND MULCHES REPORT

1 sample supplied by Muswellbrook Shire Council on the 25 August 2023. Lab Job No. P4568.

Analysis requested by Courtney Chetty. **Your Job: PO 817284.**

252 Coal Road MUSWELLBROOK NSW 2333

<div>Product Name: Product Type: Manufacturing Site: Manufactured Date: Test Code: Standard Applicable:</div>		Sample 1 20220429 Soil MSC 21/08/2023 CA-PACK-011 AS4454:2012	Guideline AS4454:2012 Mature Compost		
		Parameter	Method Reference	P4568/1	
		Wet Bulk Density (kg/L)	AS4454:2012 Appendix J	0.82	..
		Dry Bulk Density (kg/L)	AS4454:2012 Appendix J	0.41	..
		Moisture Content (%)	AS4454:2012 Appendix I	50	> 25
		pH	AS4454:2012 Appendix B	7.94	> 5
Electrical Conductivity (dS/m)	3.84	< 10			
Total Organic Carbon (%)	AS4454:2012 Appendix C	19.5	≥ 20		
Total Carbon (%)		19.5	..		
Total Nitrogen (%)		1.84	≥ 0.8 <small>see note 7</small>		
Carbon/Nitrogen Ratio		Calculation - Total Organic Carbon/Total Nitrogen	10.6	..	
Estimated Organic Matter (% OM)	Calculation - Total Organic Carbon x 1.7	33.2	..		
Ammonium Nitrogen (mg/L N)	AS4454:2012 Appendix B Dissolved Nutrients	3.84	< 100		
Ammonium Nitrogen (mg/kg N)		19.2	..		
Nitrate Nitrogen (mg/L N)		85.9	..		
Nitrate Nitrogen (mg/kg N)		430	≥ 10 <small>see note 7</small>		
Phosphate Phosphorus (mg/L P)		19.4	≤ 5 <small>see note 7</small>		
Phosphate Phosphorus (mg/kg P)		97.1	..		
Ammonium/Nitrate Ratio	Calculation - Ammonium/Nitrate	0.04	< 0.5		
Nitrogen Drawdown Index (NDI ₁₅₀)	AS4454:2012 Appendix O	0.85	> 0.5		
Total Calcium (%)	AS4454:2012 Appendix D Total Salts	2.04	..		
Total Magnesium (%)		0.58	..		
Total Potassium (%)		1.19	..		
Total Sodium (%)		0.18	<1 Na		
Total Sulphur (%)		0.25	..		
Total Phosphorus (%)	AS4454:2012 Appendix D	0.46	≤ 0.1 <small>P see note 10</small>		
Total Zinc (mg/kg)	AS4454:2012 Appendix D Total Metals	217	< 300 Zn		
Total Manganese (mg/kg)		329	..		
Total Iron (mg/kg)		21,016	..		
Total Copper (mg/kg)		40.7	< 150 Cu		
Total Boron (mg/kg)		33.4	< 100 B		
Total Silicon (mg/kg)		2,179	..		
Total Aluminium (mg/kg)		8,273	..		
Total Molybdenum (mg/kg)	AS4454:2012 Appendix D Total Metals	1.58	..		
Total Cobalt (mg/kg)		8.14	..		
Total Selenium (mg/kg)		<1	< 5 Se		
Total Cadmium (mg/kg)	AS4454:2012 Appendix D Total Heavy Metals	<0.5	< 1 Cd		
Total Lead (mg/kg)		45.9	< 150 Pb		
Total Arsenic (mg/kg)		6.45	< 20 As		
Total Chromium (mg/kg)		26.1	< 100 Cr		
Total Nickel (mg/kg)		20.3	< 60 Ni		
Total Mercury (mg/kg)		<0.1	< 1 Hg		
Total Silver (mg/kg)		<1	..		

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Parameter	Method Reference	P4568/1	
Polychlorinated Biphenyls (mg/kg)		<0.1 ND	< 0.2
Organochlorine Pesticides - DDT, DDD, DDE (mg/kg)	Sub** - Symbio Laboratories B1377469 Pesticides and PCBs	<0.02 ND	< 0.5
Organochlorine Pesticides - Other (mg/kg) <small>see note 9</small>		<0.02 ND	< 0.02
Salmonella spp (Absent in 25 g)	Sub** - Symbio Laboratories B1377360-A (M16.1 AS 5013.10)	ND	Absent in 25 g
E. coli (MPN/g DW)	Sub** - Symbio Laboratories B1377360-A (M8.3 AS 5013.15)	<3.0 ND	< 100 MPN/g
Faecal Coliforms (MPN/g DW)		<3.0 ND	< 1000 MPN/g
Particle Size Grading > 16 mm Sieve (% DW)		Nil	... <small>see note 5</small>
Particle Size Grading 5–16 mm Sieve (% DW)	AS4454:2012 Appendix G Particle Size Grading	23.8	... <small>see note 5</small>
Particle Size Grading < 5 mm Sieve (% DW)		76.2	... <small>see note 5</small>
Plastics Light Flexible or film > 5 mm (% DW)		<0.01	≤ 0.05
Stones and Lumps of Clay > 5 mm (% DW)	AS4454:2012 Appendix I Visible Contaminants	4.22	≤ 5
Glass, metal and rigid plastics > 2 mm (% DW)		0.04	≤ 0.5
Wettability (min)	AS4454:2012 Appendix E	0m 06s	<5
Plant Growth Test - Germination (%)	TMECC 05.05-B	88	> 90
Plant Growth Test - Root Elongation (%)		100	> 90
Oxygen Consumption Rate (mgO ₂ /g/min)	SOUR Testing	0.12	..
Specific Oxygen Uptake Rate (mgO ₂ /gVVS/hr)		0.04	≤ 1
Solvita Compost Maturity Index	Solvita NH ₃	5	..
	Solvita CO ₂	4	..
	Solvita Maturity Index	4	7 - 8
Viable Plant Propagules (7 days)	AS4454:2012 Appendix M	Nil	..
Viable Plant Propagules (21 days)	AS4454:2012 Appendix M	NR	Nil after 21 days

Notes:

- Methods from AS4454:2012 Composts, soil conditioners and mulches.
- Indicative guidelines are based on those in AS4454:2012 for raw mulches, pasteurized product, composted product, mature composts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Conversions for 1 mg/kg = 1 ppm; 1 % = 10,000 ppm; kg/ha = mg/kg x 2.24.
- Coarse Mulch > 70% >16mm, Fine Mulch <20% >16mm and <20% <5mm, Soil Conditioner <20% >16mm.
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over-estimate.
- Guide only to be used if a product claims to contribute to plant nutrition.
- The full test observes the potential growth of viable plant propagules in a 21 day test period. In order to pass there should be Nil after 21 days
- Other Organochlorines include: Aldrin, Dieldrin, Chlordane, Heptachlor, HCB, Lindane, BHC Other Organophosphorus include: Guthion, Bromophos-ethyl, Chlorpyrifos, Chlorpyrifos-methyl, Diazinon, Dichlorvos, Dimethoate, Ethion, Fenitrothion, Malathion, Parathion, Ronnel.
- Guide only to be used if a product claims to be used for phosphorus sensitive plants.
- < LOR Less than limit of reporting. ND Not detected. NA Not applicable. NR Not required.
- All testing has been done so in accordance with AS4454:2012 as a Composted Product.
- Testing completed in a NATA accredited laboratory.
- Analysis conducted between sample arrival date and reporting date.
- This report is not to be reproduced except in full. Results only relate to the item tested.
- All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer SCU.edu.au/eal/t&cs or on request).
- This report was issued on 12/09/2023.

Quality Checked: Brian Smith
 Compost & Landscape Soils Co-ordinator