

# HAIR ELEMENTS



POTENTIALLY TOXIC ELEMENTS				
TOXIC ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE	
			68 <sup>th</sup>	95 <sup>th</sup>
Aluminum	4.7	< 7.0		
Antimony	0.016	< 0.050		
Arsenic	0.065	< 0.060		
Beryllium	< 0.01	< 0.020		
Bismuth	0.014	< 0.10		
Cadmium	0.022	< 0.10		
Lead	0.26	< 1.0		
Mercury	0.82	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.002	< 0.060		
Nickel	0.10	< 0.40		
Silver	0.16	< 0.15		
Tin	0.07	< 0.30		
Titanium	0.64	< 1.0		
Total Toxic Representation				

ESSENTIAL AND OTHER ELEMENTS							
ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE				
			2.5 <sup>th</sup>	16 <sup>th</sup>	50 <sup>th</sup>	84 <sup>th</sup>	97.5 <sup>th</sup>
Calcium	326	300- 1200					
Magnesium	50	35- 120					
Sodium	24	12- 90					
Potassium	6	8- 38					
Copper	17	12- 35					
Zinc	260	140- 220					
Manganese	0.09	0.15- 0.65					
Chromium	0.38	0.20- 0.40					
Vanadium	0.018	0.018- 0.065					
Molybdenum	0.030	0.028- 0.056					
Boron	0.81	0.30- 2.0					
Iodine	1.9	0.25- 1.3					
Lithium	< 0.004	0.007- 0.023					
Phosphorus	216	160- 250					
Selenium	0.68	0.95- 1.7					
Strontium	0.98	0.50- 7.6					
Sulfur	50700	44500- 52000					
Barium	0.17	0.26- 3.0					
Cobalt	0.010	0.013- 0.050					
Iron	8.8	5.4- 14					
Germanium	0.039	0.045- 0.065					
Rubidium	0.008	0.007- 0.096					
Zirconium	0.052	0.020- 0.42					

SPECIMEN DATA				RATIOS		
<b>COMMENTS:</b>				<b>ELEMENTS</b>	<b>RATIOS</b>	<b>EXPECTED RANGE</b>
Date Collected:	11/11/2006	Sample Size:	0.195 g	Ca/Mg	6.52	4- 30
Date Received:	11/21/2006	Sample Type:	Head	Ca/P	1.51	1- 12
Date Completed:	11/28/2006	Hair Color:	Brown	Na/K	4	0.5- 10
		Treatment:		Zn/Cu	15.3	4- 20
Methodology:	ICP-MS	Shampoo:	Olive Oil	Zn/Cd	> 999	> 800

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