

Dietary Mineral Analysis of Sierrasil

Advanced mineralogical analysis techniques are required to accurately analyze and identify the naturally-occurring blend of silicate minerals which is unique to Sierrasil. Conventional analysis techniques are also used to determine the typical elemental composition (see 'Total Content', below). In addition, bioaccessibility testing is conducted to determine the amount of each element which leaves the silicate backbone and becomes available for uptake by the body (see 'Bioaccessible Content', below).

Element	Total Content		Bioaccessible Content	
	Assay Result	Total Content at Recommended Dose	Bioaccessible Fraction	Bioaccessible Dietary Contribution at 1g/Day
Calcium	1.6 %	32 mg/day	79 %	13 mg/day
Aluminium*	7.2 %	144 mg/day	4 %	3 mg/day
Magnesium	0.38 %	8 mg/day	22 %	0.8 mg/day
Iron**	3.6 %	71 mg/day	1.3 %	0.4 mg/day
Silicon++	19 %	376 mg/day	0.2 %	0.4 mg/day
Manganese	163 ppm	0.33 mg/day	51 %	0.08 mg/day
Barium^	1,036 ppm	2.1 mg/day	4 %	0.04 mg/day
Nickel	89 ppm	0.178 mg/day	31 %	0.03 mg/day
Copper	22 ppm	0.04 mg/day	25 %	0.006 mg/day
Cobalt^^	6 ppm	0.011 mg/day	78 %	0.004 mg/day
Zinc	58 ppm	0.12 mg/day	8 %	0.004 mg/day
Strontium	495 ppm	1.0 mg/day	0.4 %	0.002 mg/day
Titanium	2,978 ppm	6 mg/day	0.05 %	0.001 mg/day
Selenium	3 ppm	0.006 mg/day	44 %	0.001 mg/day
Vanadium	136 ppm	0.27 mg/day	0.3 %	0.0004 mg/day
Arsenic	3 ppm	0.006 mg/day	6.4 %	0.0002 mg/day
Lithium	1 ppm	0.003 mg/day	10 %	0.0001 mg/day
Lead	9.7 ppm	0.019 mg/day	1.5 %	0.0001 mg/day
Thallium	0.4 ppm	0.00082 mg/day	20 %	0.00008 mg/day
Beryllium	0.3 ppm	0.0006 mg/day	24 %	0.00007 mg/day
Cadmium	0.07 ppm	0.0001 mg/day	58 %	0.00004 mg/day
Uranium	0.3 ppm	0.0006 mg/day	10 %	0.00003 mg/day
Tin	0.3 ppm	0.0005 mg/day	5 %	0.00001 mg/day
Chromium	3 ppm	0.007 mg/day	0.2 %	0.000007 mg/day
Palladium	1.9 ppm	0.0038 mg/day	0.1 %	0.000002 mg/day
Mercury	0.1 ppm	0.00020 mg/day	1 %	0.000001 mg/day
Silver	0.3 ppm	0.0006 mg/day	0.04 %	0.0000001 mg/day
Molybdenum	0.2 ppm	0.0004 mg/day	0 %	0 mg/day
Germanium	0.8 ppm	0 mg/day	0 %	0 mg/day
Niobium	6.2 ppm	0 mg/day	0 %	0 mg/day
Hafnium	3.6 ppm	0 mg/day	0 %	0 mg/day
Tantalum	0.3 ppm	0 mg/day	0 %	0 mg/day
Tungsten	1.36 ppm	0 mg/day	0 %	0 mg/day
Platinum	0.54 ppm	0 mg/day	0 %	0 mg/day
Bismuth	0 ppm	0 mg/day	0 %	0 mg/day
Iridium	0 ppm	0 mg/day	0 %	0 mg/day
Rhenium	0 ppm	0 mg/day	0 %	0 mg/day
Tellurium	0 ppm	0 mg/day	0 %	0 mg/day
Gold	0 ppm	0 mg/day	0 %	0 mg/day
Potassium	0.9 %	17.9 mg/day	No data - this element is added during bioaccessibility testing	
Sodium+	1.0 %	20.9 mg/day	"	
Phosphorous	0.08 %	1.5 mg/day	"	
Boron	13 ppm	0.026 mg/day	"	

Notes

- Recommended daily dose is 2g/day for a 70kg adult.
- The bioaccessible portion represents the amount made accessible to the body during digestion, as determined in testing that simulates the human GI tract.
- The bioavailable portion, being the portion that enters the bloodstream and is available to the tissues, cannot exceed the bioaccessible portion.
- Results presented above are typical values. Actual results may vary with test method/apparatus and product batch, among other factors.
- The above bioaccessibility results were obtained using internationally recognized facilities and procedures, including US Pharmacopeia and BARGE (Bioavailability Research Group Europe) methods.

Mineral Content of SierraSil®

Important Notes about this Table

Essential minerals in SierraSil®: Calcium, potassium, sodium, phosphorus, magnesium, iron, manganese, copper, zinc (See table for specific health functions).

- + The recommended daily intake of sodium is 1500 mg. Diets containing no more than 1500 mg of sodium are recommended for the maintenance of healthy blood pressure.
- * The aluminum content of SierraSil® is lower than normally present in the environment as well as many commonly consumed foods, including baked goods and tap water. The upper limit is 70 mg/day per Joint FAO/WHO Expert Committee on Food Additives (1998). The upper limit is the maximum dose likely to be safe in nearly all individuals.
- ** The recommended daily intake for iron is 18 mg/day.
- ++ Silicon is a source of dietary silica. Silica is required for healthy tissue and bone development and maintenance. Currently, there is no recommended dosage for dietary silica, but research suggests the body needs from 20 – 200 mg/day.
- ^ Barium is a naturally occurring mineral found in tap water, air, soil and commonly consumed foods such as seaweed, fish and Brazil nuts. There is currently no maximum dosage for barium in foods or supplements. The maximum allowable level of Barium in drinking water is 2 ppm (2 mg/L).
- ^^ Cobalt is a component of vitamin B12 that helps to form red blood cells and metabolize carbohydrates, fats and proteins. The recommended dosage for cobalt alone is 0.004 – 44 mcg/day. The maximum combined dosage of cobalt and vitamin B12 should not exceed 1000 mcg (1 mg) vitamin B12 per day (Recommended dosage for vitamin B12 is 0.14 – 1000 mcg/day).

SierraSil®'s rich clay mineral structure has strong health promoting and detoxifying properties. Due to its charged and porous structure, SierraSil® attracts and binds positively charged toxins, harmful bacteria and viruses as well as heavy metals, pesticides and other common chemical toxins, facilitating their safe removal from the body (Johns & Duquette, 1991).