



Canadian Wollastonite

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Compositional Analysis of Canadian Wollastonite

- 44% **Wollastonite** is CaSiO_3 and consists of 48.3 % CaO and 51.7% SiO_2 . It forms when impure limestone is subjected to high pressure and temperature.
- 31% **Diopside** is $\text{MgCaSi}_2\text{O}_6$ - similar in nature to Wollastonite except it includes Magnesium.
- 17% **Feldspars** are K, Na, Ca Silica based minerals – can be a source of Potassium
- 6% **Quartz** is primarily Silica
- 2% **Calcite, Sulphides and other minor mineral species**

Typical Geochemistry of Canadian Wollastonite

	<u>%</u>		<u>%</u>		<u>%</u>
Silicon (SiO_2)	55.20%	Nitrogen (N)	0.11%	Iron (Fe_2O_3)	2.23%
Calcium (CaO)	26.50%	Phosphorous (P_2O_5)	0.06%	Titanium (TiO_2)	0.24%
Magnesium (MgO)	6.62%	Potassium (K_2O)	1.55%	Sodium (Na_2O)	1.44%
Aluminum (Al_2O_3)	4.39%	Sulfur (SO_2)	1.66%		
	<u>ppm</u>		<u>ppm</u>		<u>ppm</u>
Antimony (Sb)	0.07	Hafnium (Hf)	0.93	Silver (Ag)	<0.02
Arsenic (As)	<1.00	Indium (In)	0.03	Strontium (Sr)	1201
Barium (Ba)	287	Lanthanium (La)	9.4	Tantalum (Ta)	0.39
Beryllium (Be)	1.1	Lead (Pb)	3.5	Tellurium (Te)	<0.05
Bismuth (Bi)	0.15	Lithium (Li)	10.5	Terbium (Tb)	0.36
Cadmium (Cd)	0.04	Lutetium (Lu)	0.22	Thallium (Tl)	0.12
Caesium (Cs)	<1.00	Manganese (Mn)	324	Tin (Sn)	1.3
Cerium (Ce)	19.7	Mercury (Hg)	<0.05	Thorium (Th)	0.9
Cobalt (Co)	7.2	Molybdenum (Mo)	2.18	Uranium (U)	0.44
Chromium (Cr)	81	Niobium (Nb)	4.1	Vanadium (V)	61
Copper (Cu)	13.1	Nickel (Ni)	98.5	Tungsten (W)	0.3
Erbium (Er)	3.4	Rubidium (Rb)	49.8	Ytterbium (Yb)	1.3
Europium (Eu)	4.8	Scandium (Sc)	4.9	Yttrium (Y)	14
Gallium (Ga)	6.5	Selenium (Se)	<2	Zinc (Zn)	19.5
				Zirconium (Zr)	24.9

Calculated into Elemental Analysis from Oxide State

<i>Silicon (Si)</i>	<i>25.80%</i>	<i>Nitrogen (N)</i>	<i>0.11%</i>	<i>Iron (Fe)</i>	<i>1.56%</i>
<i>Calcium (Ca)</i>	<i>18.94%</i>	<i>Phosphorous (P)</i>	<i>0.02%</i>	<i>Titanium (Ti)</i>	<i>0.14%</i>
<i>Magnesium (Mg)</i>	<i>3.99%</i>	<i>Potassium (K)</i>	<i>1.29%</i>	<i>Sodium (Na)</i>	<i>1.06%</i>
<i>Aluminum (Al)</i>	<i>2.32%</i>	<i>Sulfur (S)</i>	<i>0.83%</i>		

Fineness: Passes 12 mesh Tyler screen – 98.3%
Passes 50 mesh Tyler screen – 27.2%