

**Natural Z-1 Broad Spectrum Clinoptilolite Zeolite  
Technical Data Sheet**

**Typical Whole Rock Analysis Major Elements**

<b>SiO<sub>2</sub></b>	<b>Al<sub>2</sub>O<sub>3</sub></b>	<b>CaO</b>	<b>MgO</b>	<b>Na<sub>2</sub>O</b>	<b>K<sub>2</sub>O</b>	<b>Fe<sub>2</sub>O<sub>3</sub></b>	<b>MnO</b>	<b>TiO<sub>2</sub></b>	<b>LOI</b>	<b>Total</b>
64.70	15.40	2.7	.95	3.18	3.12	2.37	.03	.35	6.0	98.8

**Major Exchangeable Cations**

<b>Rb+</b>	<b>Na+</b>	<b>Ba+2</b>	<b>Mg+2</b>	<b>Li+</b>	<b>Ag+</b>	<b>Sr+2</b>	<b>Fe+3</b>	<b>K+</b>	<b>Cd+2</b>
Cu+2	Co+3	Cs+	Pb+2	Ca+2	Al+3	NH+4	Zn+2	Hg+2	Cr+3

<b>Zeolite Species: Clinoptilolite</b>						<b>Cation Exchange Capacity</b>	
<b>CAS #: 1318-02-01</b>						<b>80 to 110</b>	
<b>Color: Off White Pale Green</b>						<b>Surface Area 107 m<sup>2</sup>/g</b>	
<b>Ion Trapping Capability:</b>						<b>By Ethylene Glycol Monoethyl Ether Sorption</b>	
<b>NH<sub>4</sub></b>	<b>CU</b>	<b>Pb</b>	<b>Zn</b>	<b>Cd</b>			
<b>48%</b>	<b>57%</b>	<b>85%</b>	<b>48%</b>	<b>82%</b>	<b>Hydraulic Conductivity (cm/hr) 0.076</b>		
<b>Water Adsorption: 25 to 30%</b>						<b>Hydraulic Conductivity (cm/sec) 0.00002</b>	
<b>Ph: 7 to 8</b>						<b>Hardness 3.5 mohs</b>	
<b>% Moisture: 2 to 5%</b>						<b>Est. Pore Size (micrometers) 0.803-4.30</b>	
<b>Thermal Stability: 300°</b>						<b>By scanning electro microscopy – not size of channels</b>	
<b>Mesh: -40 Mesh +80 Mesh</b>						<b>Bulk Density lbs/ft<sup>3</sup> Loose - 0.8 g/cm<sup>3</sup> Tapped - 1.1g/ cm<sup>3</sup></b>	

**NOTE:** The typical properties listed above are averages. These properties should not be construed as a rigid specification unless so indicated. Product specifications may be obtained upon request. Metals listed in the chemical analysis are complexed in the mineral They do not necessarily exist as free oxides. Data herein are based on most recent testing and are offered in good faith as being typical of normal production.

Under the Clean Air Act of 1990 producers are required to phase out designated substances that have Ozone Depleting potential. The manufacturing process of all-Natural Zeolite products does not contact, nor are they packaged with, any Ozone Depleting Compounds (ODC), this includes both Class I and Class II compounds.

<b>Packaging</b>
Available in bulk bags, paper bags and bulk. Zeolite is not regulated as a hazardous material by the Department of Transportation.

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