

## GENERAL INFORMATION

<b>Chemical Name:</b>	Calcium, Potassium, Sodium Aluminosilicate
<b>Chemical Family:</b>	Natural Zeolite
<b>Chemical Abstract Name:</b>	Clinoptilolite
<b>Chemical Formula:</b>	$(Ca,K_2,Na_2,Mg)_4Al_8Si_{40}O_{96} \cdot 24H_2O$

## MINERAL COMPOSITION \*

<b>Clinoptilolite</b>	85 %	<b>Mordenite</b>	15 %
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\* Semi-Quantitative whole rock analysis (bulk mineralogy) has been done using powder X-ray Diffraction Method

## CHEMICAL COMPOSITION \*\*

<b>SiO<sub>2</sub></b>	71,81 %	<b>Fe<sub>2</sub>O<sub>3</sub></b>	1,14 %	<b>MnO</b>	0 - 0,03 %
<b>Al<sub>2</sub>O<sub>3</sub></b>	12,1 %	<b>MgO</b>	0,65 %	<b>Cr<sub>2</sub>O<sub>3</sub></b>	35ppm
<b>CaO</b>	2,60 %	<b>Na<sub>2</sub>O</b>	2,33 %	<b>P<sub>2</sub>O<sub>5</sub></b>	187ppm
<b>K<sub>2</sub>O</b>	0,90 %	<b>LOI***</b>	7,77 %	<b>TiO<sub>2</sub></b>	0.22 %

\*\* Analysed by XRF Spectrometer

\*\*\* Loss of Ignition

## PHYSICAL PROPERTIES

<b>Appearance</b>	Iron Red	<b>Cation Exchange Capacity</b>	147 average
<b>Smell</b>	None	<b>Specific Gravity (whole rock)</b>	2.3T/m3
<b>Porosity</b>	45 - 50 %	<b>Bulk Density</b>	0,7 - 1,4 g / cm3
<b>Hardness</b>	~5.0 Mohs		
<b>Mudding Down</b>	None		
<b>Water Absorption</b>	42 - 50 %		
<b>Plasticity</b>	Minor		

## CATION EXCHANGE CAPACITY (CEC) meq/100g

**Total CEC:** 147 average

### Major Exchangeable Cations

Rb, Li, K, Cs, NH<sub>4</sub>, Na, Ca, Ag, Cd, Pb, Zn, Ba, Sr, Cu, Hg, Mg, Fe, Co, Al, Cr.

(selectivity of above cations is a function of hydrated molecular size and relative concentrations).

### Selectivity

$Cs^+ > NH_4^+ > Pb^{2+} > K^+ > Na^+ > Ca^{2+} > Mg^{2+} > Ba^{2+} > Cu^{2+}, Zn^{2+}$

### Primary Adsorbing Gases

CO, CO<sub>2</sub>, SO<sub>2</sub>, H<sub>2</sub>S, NH<sub>3</sub>, HCHO, Ar, O<sub>2</sub>, N<sub>2</sub>, H<sub>2</sub>O, He, H<sub>2</sub>, Kr, Xe, CH<sub>2</sub>OH.

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