

St. Cloud Natural Zeolite (Clinoptilolite)

Category : Ceramic , Oxide , Silicon Oxide

Material Notes:

Natural zeolites are microporous volcanic minerals with sieving and cation exchange properties for use in agriculture, environmental and industrial applications. Features such as a vary large internal surface area in the porous structure and exchangeable cations lead to a variety of uses. It is used as an animal feed supplement that has been shown to improve health and reduce the negative effects of animal waste; as an additive to animal stalls and pens to reduce ammonia and other emissions to air and water; as a soil amendment to retain water and plant nutrients in root zones, which conserves both; for a number of other horticultural and agricultural uses, including being endorsed for use in space by NASA; as a water filtration media that removes ammonia, some heavy metals and other constituents; etc. Major exchangeable cations are Rb, Li, K, Cs, NH₄, Na, Ca, Ag, Cd, Pb, Zn, Ba, Sr, Cu, Hg, Mg, Fe, Co, Al, Cr. Primary adsorbing gases are CO, CO₂, SO₂, H₂S, NH₃, HCHO, Ar, O₂, N₂, H₂O, He, H₂, Kr, Xe, CH₂OH, Freon, formaldehyde, and mercaptans. Product mined near Winston, New Mexico, USA. Information provided by St. Cloud Mining Company.

Order this product through the following link:

http://www.lookpolymers.com/polymer_St-Cloud-Natural-Zeolite-Clinoptilolite.php

Physical Properties	Metric	English	Comments
Specific Gravity	2.20 - 2.40 g/cc	2.20 - 2.40 g/cc	
Bulk Density	0.705 - 0.769 g/cc	0.0255 - 0.0278 lb/in ³	Aggregate, dried, 4 x 6 mesh
	0.721 - 0.753 g/cc	0.0260 - 0.0272 lb/in ³	Aggregate, dried, 6 x 14 mesh
	0.737 - 0.785 g/cc	0.0266 - 0.0284 lb/in ³	Aggregate, dried, 14 x 40 mesh
	0.769 - 0.833 g/cc	0.0278 - 0.0301 lb/in ³	Aggregate, dried, -40 mesh
	1.39 g/cc	0.0503 lb/in ³	In Place, dried
Porosity	<= 52 %	<= 52 %	Natural Internal Porosity
pH	7.5 - 8.0	7.5 - 8.0	Natural
Specific Surface Area	14 - 15 m ² /g	14 - 15 m ² /g	External
	<= 800 m ² /g	<= 800 m ² /g	Total
Permeability	0.001	0.001	m/sec (1.4 - 0.4 mm particles)
Pore Size	0.000400 - 0.000700 microns	0.0000157 - 0.0000276 mil	4 - 7 angstroms Diameter

Mechanical Properties	Metric	English	Comments
Hardness, Mohs	3.5 - 4.0	3.5 - 4.0	
Compressive Strength	17.2 MPa	2500 psi	crush strength

Abrasion Mechanical Properties	24 Metric	24 English	LA Wear Comments
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Thermal Properties	Metric	English	Comments
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Decomposition Temperature	650 Å°C	1200 Å°F	
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Optical Properties	Metric	English	Comments
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Reflection Coefficient, Visible (0-1)	0.85	0.85	
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Component Elements Properties	Metric	English	Comments
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Al2O3	12.1 %	12.1 %	
CaO	3.4 %	3.4 %	
Fe2O3	1.6 %	1.6 %	
K2O	3.0 %	3.0 %	
MgO	1.5 %	1.5 %	
Na2O	0.3 %	0.3 %	
P2O5	0.05 %	0.05 %	
SiO2	70 %	70 %	

Electrical Properties	Metric	English	Comments
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Electrical Resistivity	9000 ohm-cm	9000 ohm-cm	
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Descriptive Properties	Value	Comments
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Cation Exchange Capacity	0.1 meq/g external	
	0.8 Å€" 1.2 meq/g total	
Clinoptilolite Content	75 to 85%	
Color	White	
Feature	free flowing	
	non-slaking	
	non-soluble	
	readily mixable	
pH Stability	0 - 13	

Descriptive Properties	Value	Comments
Surface Charge Density	10.1E-23 meq/Å... ²	
Swelling Index	nil	

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