

Channel Industries 300 Barium Titanate Piezoelectric

Category : Ceramic , Oxide , Titanium Oxide , Piezoelectric

Material Notes:

Modified barium titanates are widely used in transducers requiring moderate power level and receiving sensitivity. Special characteristics have made barium titanate a proven material for use in devices such as depth sounders and expendable hydrophones. Uses of this grade include: Low Power Sonar; Depth Sounders; Hydrophones; Shallow; Vibration Pickups; Receiver Transducers. Coupling Constants: k_{33} : 0.46 k_{31} : -0.19 k_{15} : 0.46 k_p : -0.32 Piezoelectric Constants: d_{33} : 145 x 10⁻¹² m/V d_{31} : -58 x 10⁻¹² m/V d_{15} : 245 x 10⁻¹² m/V g_{33} : 13.1 x 10⁻³ Vm/N g_{31} : -5.2 x 10⁻³ Vm/N g_{15} : 20.5 x 10⁻³ Vm/N. Mechanical Q: 450 Data provided by Channel Industries, Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Channel-Industries-300-Barium-Titanate-Piezoelectric.php

Physical Properties	Metric	English	Comments
Density	>= 5.50 g/cc	>= 0.199 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	21.0 MPa	3050 psi	Dynamic tensile strength
	52.0 MPa	7540 psi	Static

Electrical Properties	Metric	English	Comments
Curie Temperature	>= 115 °C	>= 239 °F	
Dielectric Constant	1250	1250	Free dielectric constant K^T_{33}
	1350	1350	K^T_{31}
Dissipation Factor	0.0080	0.0080	Low Field
Piezoelectric Longitudinal Coupling Factor, k_{33}	0.46	0.46	
Piezoelectric Transverse Voltage Coefficient, d_{31} , 10 ⁻¹² m/V	-58.0	-58.0	
Piezoelectric Shear Charge Coefficient, d_{15} , 10 ⁻¹² m/V	245	245	
Piezoelectric Longitudinal Voltage Coefficient, g_{33} , 10 ⁻³ V-m/N	13.1	13.1	
Piezoelectric Planar Coupling Factor, k_p	-0.320	-0.320	
Piezoelectric Mechanical Q	450	450	
Piezoelectric Shear Coupling Factor, k_{15}	0.46	0.46	

Electrical Properties Piezoelectric Longitudinal Charge Coefficient, g ₃₁ , 10 ⁻³ V-m/N	Metric	English	Comments
Piezoelectric Transverse Voltage Coefficient, g ₃₁ , 10 ⁻³ V-m/N	-5.20	-5.20	
Piezoelectric Shear Voltage Coefficient, g ₁₅ , 10 ⁻³ V-m/N	20.5	20.5	
Piezoelectric Transverse Coupling Factor, k ₃₁	-0.190	-0.190	

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