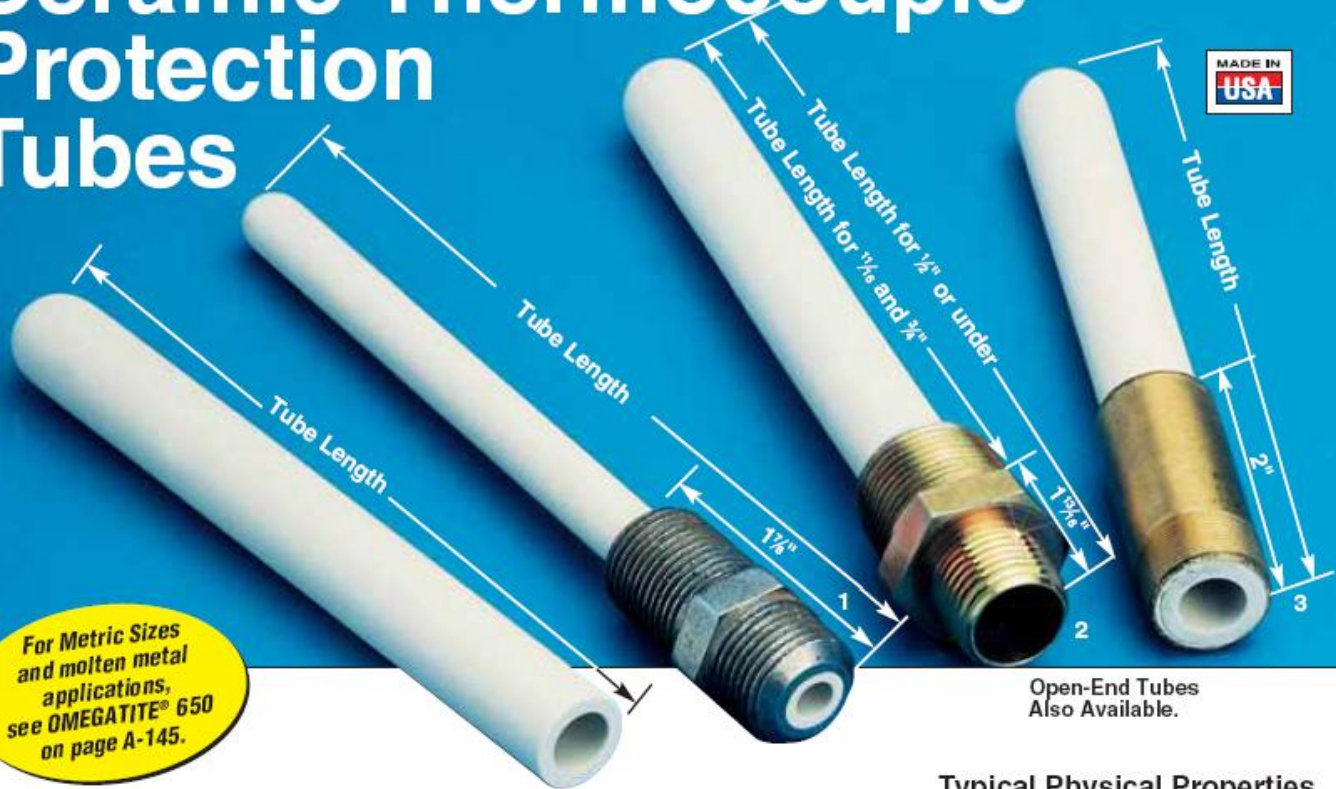




Ceramic Thermocouple Protection Tubes



For Metric Sizes and molten metal applications, see OMEGATITE® 650 on page A-145.

Open-End Tubes Also Available.

Typical Physical Properties

Properties	OMEGATITE® 450	OMEGATITE® 300
Composition	99.8% Al ₂ O ₃	85% mullite 15% glass
Water Absorption	0.00	0.00
Specific Gravity KP/CM ³	3.85	2.8
Gas Permeability	Gas tight	Gas tight
Compressive Strength (psi)	>300,000	>190,000
Tensile Strength (psi)	30,000	18,000
Transverse Strength (psi)	55,000	27,000
Coefficient of Linear Thermal Expansion 24 to 250°C (75 to 480°F) 24 to 500°C (75 to 930°F) 24 to 1000°C (75 to 1830°F) 24 to 1500°C (75 to 2730°F)	6.2 x 10 ⁻⁶ 7.4 x 10 ⁻⁶ 8.5 x 10 ⁻⁶ 9.8 x 10 ⁻⁶	3.3 x 10 ⁻⁶ 4.0 x 10 ⁻⁶ 5.0 x 10 ⁻⁶ -
Approximate Thermal Conductivity (BTU)(in)/(hr)(ft ²)(°F) 24°C (75°F) 800°C (1470°F)	230 60	40 25
Maximum Service Temperature	1950°C (3540°F)	1750°C (3180°F)
Dielectric Constant (1MC)	9.29	5.80
Dielectric Strength (volts/mil)	>230	250
Volume Resistivity (ohm cm)	10 ¹⁸	10 ¹⁸
Te Value (Volume Resistivity of 1 mega Ω cm)	800°C (1470°F)	800°C (1470°F)
Hardness (Mohs Scale)	9	7.5
Fabrication Methods	Cast	Cast



Typical Chemical Analyses

	Al ₂ O ₃	SiO ₂	MgO	Na ₂ O	CaO	Fe ₂ O ₃	Cr ₂ O ₃	TiO ₂	MnO	ZrO ₂	K ₂ O
OMEGATITE® 450	99.8	0.070	0.050	0.005	0.030	0.025	<.003	0.004	0.001	-	<0.001
OMEGATITE® 300	60.0	38.0	0.2	0.2	0.1	0.5	-	0.5	-	-	0.700

Note: All properties are average for test specimens. Tests were performed according to ASTM specifications.

Ceramic Thermocouple Protection Tubes

MOST POPULAR MODELS HIGHLIGHTED!

To Order (Specify Model Number)				
Dimensions			PTRA OMEGATITE® 450	PTRM OMEGATITE® 300
Inside Dia.	Outside Dia.	Tube Length*	Model Number	Model Number
1/16"	1/8"	12"	PTRA-11618-12	PTRM-11618-12
		18"	PTRA-11618-18	PTRM-11618-18
		24"	PTRA-11618-24	PTRM-11618-24
5/64"	5/32"	12"	PTRA-564532-12	PTRM-564532-12
		18"	PTRA-564532-18	PTRM-564532-18
		24"	PTRA-564532-24	PTRM-564532-24
5/32"	1/4"	12"	PTRA-53214-12	PTRM-53214-12
		18"	PTRA-53214-18	PTRM-53214-18
		24"	PTRA-53214-24	PTRM-53214-24
3/16"	1/4"	12"	PTRA-31614-12	PTRM-31614-12
		18"	PTRA-31614-18	PTRM-31614-18
		24"	PTRA-31614-24	PTRM-31614-24
9/16"	5/16"	12"	PTRA-316516-12	PTRM-316516-12
		18"	PTRA-316516-18	PTRM-316516-18
		24"	PTRA-316516-24	PTRM-316516-24
1/4"	3/8"	12"	PTRA-1438-12	PTRM-1438-12
		18"	PTRA-1438-18	PTRM-1438-18
		24"	PTRA-1438-24	PTRM-1438-24
5/16"	7/16"	12"	PTRA-516716-12	PTRM-516716-12
		18"	PTRA-516716-18	PTRM-516716-18
		24"	PTRA-516716-24	PTRM-516716-24
5/16"	1/2"	12"	PTRA-51612-12	PTRM-51612-12
		18"	PTRA-51612-18	PTRM-51612-18
		24"	PTRA-51612-24	PTRM-51612-24
3/8"	1/2"	12"	PTRA-3812-12	PTRM-3812-12
		18"	PTRA-3812-18	PTRM-3812-18
		24"	PTRA-3812-24	PTRM-3812-24
7/16"	1 1/16"	12"	PTRA-7161116-12	PTRM-7161116-12
		18"	PTRA-7161116-18	PTRM-7161116-18
		24"	PTRA-7161116-24	PTRM-7161116-24
1/2"	3/4"	12"	PTRA-1234-12	PTRM-1234-12
		18"	PTRA-1234-18	PTRM-1234-18
		24"	PTRA-1234-24	PTRM-1234-24



5/8"	7/8"	12" 18" 24"	PTRA-5878-12 PTRA-5878-18 PTRA-5878-24	PTRM-5878-12 PTRM-5878-18 PTRM-5878-24
3/4"	1"	12" 18" 24"	PTRA-341-12 PTRA-341-18 PTRA-341-24	PTRM-341-12 PTRM-341-18 PTRM-341-24
7/8"	1 1/8"	12" 18" 24"	PTRA-78118-12 PTRA-78118-18 PTRA-78118-24	PTRM-78118-12 PTRM-78118-18 PTRM-78118-24
1"	1 1/4"	12" 18" 24"	PTRA-1114-12 PTRA-1114-18 PTRA-1114-24	PTRM-1114-12 PTRM-1114-18 PTRM-1114-24
5 mm	7 mm	300 mm 450 mm 600 mm	PTRA-5MM7MM-12 PTRA-5MM7MM-18 PTRA-5MM7MM-24	PTRM-5MM7MM-12 PTRM-5MM7MM-18 PTRM-5MM7MM-24