

Insulators

Insulators

Introduction

Insulators are available in various materials and sizes to meet any thermocouple requirement. Operating temperatures and material compositions are shown under "specifications."

Mullite, Steatite and Cordierite are recommended only for base metal thermocouples.

Alumina

Recommended for noble metal thermocouples since there are few impurities to react with noble metal thermocouples at high temperatures. High physical strength. Good electrical properties. Fair resistance to thermal and electrical shock.

Mullite

Excellent high temperature material. Good thermal shock resistance. Low thermal expansion.

Steatite

High physical strength. Good electrical properties. Loses resistance at high temperatures. Poor heat shock resistance.

Cordierite

Excellent heat shock resistance. Fair physical strength and fair electrical properties.

Specifications

	Temp. (°F)		Chemical Composition							
	Useful	Max.	Al ₂ O ₃	SiO ₂	MgO	Na ₂ O	Fe ₂ O	CaO	K ₂ O	TiO ₂
Alumina	3400	3600	99.00	00.70	00.09	00.07	00.09	00.05	00.00	00.00
Mullite	3000	3200	55.40	42.00	00.04	00.46	00.80	00.10	00.70	00.50
Steatite	1850	2450	04.60	64.90	27.80	00.90	00.85	00.28	00.47	00.20
Cordierite	2050	2475	24.70	54.80	11.70	00.27	00.59	01.60	00.14	01.20

Ordering Information

In the following tables:

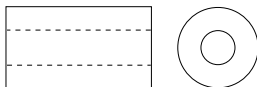
Wire = B&S gauge

Hole = Minimum/Maximum

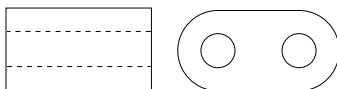
O.D. = Outside diameter

L (Length)

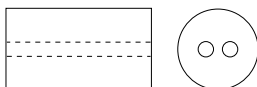
W (Weight) = Number of ounces for ten pieces



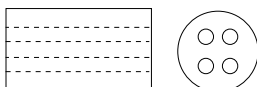
One Hole Round



Two Hole Oval



Two Hole Round



Four Hole Round

Schedule: S6

Number	Wire	Material	Hole	O.D.	L	W	Each
One Hole Round							
51-00004-000-0-00	6	Cordierite	0.199"/0.219"	23/64"	1"	1	
51-00009-000-0-00	8	Mullite	0.182"/0.192"	1/4"	3"	1	
51-00010-000-0-00	8	Cordierite	0.148"/0.168"	11/32"	1"	1	
51-00014-000-0-00	14	Cordierite	0.083"/0.103"	9/64"	1"	1	
Two Hole Round							
51-00012-000-0-00	8	Cordierite	0.144"/0.164"	31/64"	1"	1/2	
51-00018-000-0-00	14	Steatite	0.065"/0.085"	1/4"	1"	1/2	
51-00019-000-0-00	14	Steatite	0.065"/0.085"	1/4"	6"	3	
51-00021-000-0-00	14	Steatite	0.070"/0.090"	1/4"	2"	1	
51-00022-000-0-00	14	Steatite	0.070"/0.090"	1/4"	3"	1-1/2	
51-00056-000-0-00	15	Cordierite	0.062"/0.086"	1/4"	2-1/2"	1-1/2	
51-00027-000-0-00	19	Steatite	0.038"/0.058"	5/32"	2-1/4"	1/2	

Insulators

Ordering Information (continued)

Number	Wire	Material	Hole	O.D.	L	W	Each
Two Hole Round (continued)							
51-00031-000-0-00	20	Mullite	0.037"/0.043"	1/8"	6"	1-1/2"	
51-00032-001-0-00	20	Mullite	0.037"/0.043"	1/8"	11-1/2"	3"	
51-00033-001-0-00	20	Mullite	0.037"/0.043"	1/8"	17-1/2"	4"	
51-00035-001-0-00	20	Mullite	0.037"/0.043"	1/8"	35-1/2"	1-1/2"	
51-00047-000-0-00	22	Alumina	0.037"/0.043"	1/8"	6"	1-1/2"	
51-00048-001-0-00	22	Alumina	0.037"/0.043"	1/8"	11-1/2"	3"	
51-00049-001-0-00	22	Alumina	0.037"/0.043"	1/8"	17-1/2"	4"	
51-00050-001-0-00	22	Alumina	0.037"/0.043"	1/8"	23-1/2"	5-1/2"	
51-00060-000-0-00	22	Alumina	0.035"/0.045"	1/8"	35-1/2"	8"	
51-00078-000-0-00	22	Alumina	0.035"/0.045"	1/8"	47-1/2"		
Two Hole Oval							
51-00003-000-0-00	6	Cordierite	0.181"/0.201"	5/16 x 9/16"	1"	1/2"	
51-00006-000-0-00	7	Cordierite	0.158"/0.178"	9/32 x 31/64"	1"	1"	
51-00008-000-0-00	7	Cordierite	0.153"/0.173"	9/32 x 31/64"	3"	1"	
51-00013-000-0-00	11	Steatite	0.100"/0.110"	3/16 x 5/16"	1"	1/2"	
51-00017-000-0-00	14	Cordierite	0.070"/0.090"	3/16 x 5/16"	1"	1/2"	

Two Hole Oval - Special used in Code 14, 41 and 42 Protection Tubes

51-00062-000-0-00	8	Steatite	0.147"/0.153"	0.435 x 1/4"	1"	1"	
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Four Hole Round

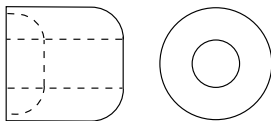
51-00070-000-0-00	8	Cordierite	0.135"/0.150"	1/2"	1"	2"	
51-00051-000-0-00	14	Steatite	0.068"/0.088"	5/16"	1"	1"	
51-00052-000-0-00	20	Cordierite	0.036"/0.056"	3/16"	1"	1"	
51-00063-000-0-00	24	Alumina	0.044"/0.050"	3/16"	11-1/2"	5"	
51-00064-000-0-00	24	Alumina	0.043"/0.051"	3/16"	17-1/2"	8"	
51-00065-000-0-00	24	Alumina	0.043"/0.051"	3/16"	23-1/2"	11"	
51-00066-000-0-00	24	Alumina	0.043"/0.051"	3/16"	29-1/2"	14"	
51-00067-000-0-00	24	Alumina	0.043"/0.051"	3/16"	35-1/2"	16"	

Bead (Ball and Socket Style for "Fish Spine")

L = Approximate length per pound, in feet.

Q = Approximate quantity per pound

O.D. = Outside Diameter and Length (Dimensions are equal)



Number	Wire	Material	Hole	O.D.	L	Q	Per pound
52-00007-000-0-00	8	Steatite	0.142"/0.162"	17/64"	31.4	1575	
52-00007-100-0-00		Same as above in 6" tube. Price per tube					
52-00008-000-0-00	11	Steatite	0.106"/0.162"	17/64"	26.0	1300	
52-00009-000-0-00	13	Steatite	0.082"/0.102"	13/64"	47.9	2875	
52-00010-000-0-00	16	Steatite	0.058"/0.078"	11/64"	68.3	4825	
52-00010-100-0-00		Same as above in 6" tube. Price per tube					
52-00011-000-0-00	18	Steatite	0.046"/0.066"	1/8"	172.8	16,600	
52-00011-100-0-00		Same as above in 6" tube. Price per tube					
52-00014-100-0-00	18	Steatite	0.046"/0.066"	7/64"	0.004 lbs	per tube	