

# thermocouple wire & cable

## Insulation and Jackets

Four Star Wire & Cable, Inc. standard line of thermocouple wire and cable is available in a wide range of insulating and jacketing materials suiting the most demanding environmental conditions.

Chart (1) gives the most popular combinations of materials and the characteristics of each. Special situations may require other types of materials. Contact your Four Star Wire & Cable, Inc. sales representative to help in determining the exact choice for your application.

### General Characteristics Of Thermocouple Wire Insulations

Chart No. 1

Insulation	Jacket	Temp. C° (F°)			Mechanical Properties		Chemical Properties (Resistance to)			
		Cont.	Inter.	Flame	Abrasion Res.	Flexibility	Solvents	Acids	Bases	Moisture
Felted Asbestos	Asbestos Braid	538 (1000)	760 (1400)	E	F/G	G	E	P	E	P
Felted Asbestos	Glas Braid with Silicone	482 (900)	538 (1000)	E	F/G	G	E	E	E	F/G (to 204°C)
Mylar/Felted Asbestos	Asbestos Braid	538 (1000)	760 (1400)	E	F/G	G	E	P	E	F
Nylon	Nylon	120 (248)	-	P	E	G	G	P	E	F/G
PVC	PCV	105 (221)	-	G	G	G	F	G	G	G
Teflon (FEP)*	Teflon (FEP)*	205 (400)	-	E	E	G	E	E	E	E
Glass Braid with Silicone	Glass Braid with Silicone	480 (900)	538 (1000)	E	F/G	G	E	E	E	F/G (to 204°C)
Refrasil**	Refrasil**	871 (1600)	982 (1800)	E	P	F/G	E	E	E	P
Kapton*	Kapton*	316 (600)	427 (800)	E	E	E	E	E	E	E
Teflon (TFE-Tape)*	Teflon (TFE-Tape)*	260 (500)	-	E	E	E	E	E	E	E
PVC	Nylon	105 (221)	-	G	E	G	F	P	E	G
Tefzel*	Tefzel*	150 (302)	-	E	E	E	E	E	E	E
Ceramic Fiber	Ceramic Fiber	1427 (2600)	-	E	G	E	G/E	F/G	G/E	G/E
High Temperature Glass Braid with Silicone	High Temperature Glass Braid with Silicone	649 (1200)	-	E	F/G	G	E	E	E	F/G (to 204°C)

\* Trademark, Du Pont Co.  
\*\* Trademark, H.I. Thompson Co.

E = Excellent, G = Good, F = Fair, P = Poor

### ANSI/ISA

#### COMPLIANCE

The key to precise temperature measurement is consistency. Establishing very exacting standards of calibration, ANSI, the American National Standards Institute and ISA, Instrument Society of America have been able to govern the specification and manufacturing of thermocouple and extension wire and cable. These standards quality control techniques and require certification by the manufacturer to ensure performance.

Grade	Type	Extension	ISA/ANSI COLOR CODE				Overall Jacket	
			Positive Wires	Negative Wires	Grade	Extension		
J		JX	Iron	White	Construction	Red	Brown	Black
K		KX	Chrmell	Yellow	Alumel	Red	Brown	Yellow
T		TX	Copper	Blue	Construction	Red	Brown	Blue
E		EX	Chrome	Purple	Constantan	Red	Brown	Purple
-		RX,SX	Copper	Black	Alloy #11	Red	-	Green

