Manufacturer & Exporter of

PTFE Insulated Wires, Cables, Sleeves

PTFE
ELECTRONICS PVT. LTD.





- Hookup & Equipment Wires
- Multicore/ Multipair Cables
- Sheathed Cables
- PTFE Electrical Sleeves
- High Temperature Cables
- Thermocouple Extension Cables
- RTD's & Compensating Cables
- High Voltage (CR) Cables
- RF Coaxial Cables

Director's Message

Dear Customer,

We would like to express our deep gratitude to all our customers for their unconditional support and trust shown in us for quality products. You all have made PTFE Electronics a leading designer, manufacturer and exporter of **High Voltage, High Temperature & High Frequency Speciality** Wires, Cables and Sleeves under PTFE(Teflon*) Insulation.

We have complete in-house capabilities to design & develop a cable as per your requirements. Also our manufacturing facilities are efficient and streamlined to gear up for the future. We assure to deliver you quality products and our best attention to your demands and orders, to be one of your reliable supplier.

At PTFE Electronics business model is evolving. We are enhancing our key internal operations to ensure a consistent and positive experience for our customers. Our business processes begin and end with the customers. We are confident that your confidence and trust in us will keep us ahead and winning in our constant endeavour to continue to be the preferred supplier in this competitive market.

We are improving each day to serve you better.

Happy Wiring and Cabling!!!

M. K. Agarwal
(Managing Director)
Pankaj Agarwal
(Director)

PTFE Electronics Commitment

- Testing of 100% supplies.
- Quick and cost effective delivery.
- Speciality Cable sustainable at even upto 1500°C.
- Customised Designing of complex requirements of the customers.

A NAME YOU CAN TRUST

PTFE ELECTRONICS PVT. LTD.

About PTFE Electronics

PTFE Electronics Private Limited, an ISO 9001 company is the fastest growing company in Indian PTFE Cable Industry with consistent growth. We understand in the cable manufacturing industry, a competitive edge lies in consistent quality, ready availability and product innovation.

In an on-going process to improve Customer Satisfaction, PTFE Electronics offers a variety of services:-

- Products at commercially competitive prices.
- Reliable & consistent quality with 100% testing.
- Product development for a changing market.
- Technical Support for Applications/Projects.

PTFE Electronics derives its strengths from its Customers. The growth of our customers is a prerequisite to the growth of the company and hence customer satisfaction is its prime objective. Over the years, sincere service and dedication towards its Customers has earned the Company distinguished clientele which includes best players in sectors like Defense electronics, Space electronics, Aircrafts, Satellites, Missiles, Radio & Microwave Communications, Infrared sensing equipments, Temperature sensing equipments, High performance instrumentations & controls, Power generation etc. PTFE Electronics has highly experienced qualified and dedicated professionals with strong adherence to the quality management system.

With experience gained over the years, we have developed a wide range of specialized cables to address specific needs of industries demanding highest standard, reliability, assured quality & safety and are cost effective and efficient than the products that are popular in the market.

Our consistent approach towards delivering superior quality in our products inspires us to strictly follow the quality norms and guidelines mandated for having LCSO approval for defence electronics equipments and systems. Our products fulfills the Indian standard JSS-51034/JSS-51100/JSS-54802 and international standards like MIL-W-16878/MIL-C-17/MIL-1-22129 & BSG-210.

PTFE Electronics Vision

Be recognised as a leading global player providing PTFE cabling solutions to the electrical connectivity requirements of industrial users.

ISO 9001 International Standards Certifications

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PTFE ELECTRONICS PVT. LTD.

Key Applications of Our Wires & Cables

Our manufactured wires, cables and sleeves are being used in various industrial applications and industries including:

- Defense Electronics, Radars, Satellites and Missiles.
- OEM's for Defense, Marine, Naval and Aerospace applications and aircrafts.
- Railway Signaling and Lighting.
- High Precision Electrical equipment.
- For limited space and high current applications.
- Nuclear Power Systems and control equipment.
- Radio and Microwave Communication equipment.
- Excavators, lifts and High Performance automobiles.
- Industrial Heaters and other high temperature applications
- Temperature Sensors, Transducers, Flow Meters and other sensors.
- Power-stations, UPS, Transformers and other Power supply Instruments.
- Fire proof wiring and wire harness in Furnace and Oven.

Advantages of PTFE as insulation Material on Wires and Cables

- Non propellant to flame.
- Inertness to almost all chemicals.
- Excellent thermal stability suitable for use from -65°C to +260°C.
- Best dielectric properties in any flexible insulation.
- Unaffected by lubricants, hydraulic fluids and aircraft fuels.
- Immune to ageing, fungus and water absorption.
- Withstands over heating due to temporary current over loads.
- Smaller size, more flexible, lighter weight and much higher reliability.

Specific Gravities and Di-electric constant of different insulating materials

Material	Specific Gravity	Max. Operating Temp.	Dielectric Constant
PTFE	2.15	260°C	1.95
FEP	2.15	200°C	2.15
KYNAR (Vinylidence Fluoride)	1.76	125°C	7.5
KAPTON	1.67	200°C	2.35
PVC	1.38	105°C	4.6
NEOPRENE	1.38	70°C	-
POLYSULFONE	1.24	125°C	3.3
NYLON	1.09	105°C	4.8

PTFE Insulated Hookup Wires

We manufacture variety of PTFE insulated hook-up wires in small-to-large gauge, solid as well as stranded, prominently used for making internal connections inside electrical or electronic devices. Our Standard wires satisfy the International Standard MIL-W-16878 & BS3G210 and Indian Standard JSS 51034.

PTFE wires has outstanding mechanical, thermal & electrical properties which makes it most suitable even at temperature ranging as high as 260°C and as low as minus 65°C.

Conductors	SPC/ NPC/ BC
Insulation	PTFE Tape Wrapped Sintered (TWS)
Voltage Rating	250V/ 600V/ 1000V/ As per customer Requirements.
Temp. Range	-ve 65°C to +ve 260°C

COLOURS

All 11 solid standard colours and Natural opaque. Bicolour is also available.

HV Test

Type	Spark Test (For One Second)	Dielectric Test (For One Minute)
ET (250V)	2.5 KVAC	1.5 KVAC
E (600V)	3.4 KVAC	2.0 KVAC
EE (1000V)	5.0 KVAC	3.0 KVAC

Call Us at

+91 98913 46111
+91 98913 44111
+91 120 6484111

Technical specification of the Wires and Cables :

Insulation is mainly governed by working voltage, mechanical protections and capacitance. The Standard insulation are ET (250V), E (600V) and EE(1000V). We also offer ET+ as insulation which is between ET and E.

Following is the technical specification of various standard wires we manufactures;

ISO 9001 International Standards Certifications

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Technical Specification Of Various Standard Wires We Manufactures (As per JSS51034 & MIL-W-16878)

S. No.	Size in AWG	No. of strands/ dia of each strand (mm)	Current Rating (in Amps)		Parameters of conductor (Nominal) (As per JSS 51034)				Nominal Dia of Insulated Wire (mm)		
			30°C	200°C	Dia. (mm)	Cross section (sq. mm.)	Resistance ohm/km at 20° C	Elongation (Min)	ET (250 V) AC	E (600 V) AC	EE (1000 V) AC
1	32/7/40	7/0.08	2.5	6	0.24	0.034	570.9	5.5	0.56	0.74	1.00
2	30/1	1/0.25	2.5	6	0.25	0.051	356.4	9.0	0.56	0.75	1.00
3	30/7/38	7/0.1	3.5	6	0.30	0.057	332.3	5.5	0.61	0.81	1.07
4	28/7/36	7/0.13	3.5	8	0.38	0.089	210.5	5.5	0.69	0.89	1.14
5	28/1	1/0.32	4	8	0.32	0.081	224.4	9.0	0.63	0.84	1.09
6	26/1	1/0.4	4	10	0.40	0.128	140.9	9.0	0.71	0.90	1.15
7	26/7/34	7/0.16	4	10	0.48	0.141	133.7	9.0	0.79	0.99	1.24
8	26/19/38	19/0.1	4	10	0.50	0.154	126.7	5.5	0.79	0.99	1.24
9	24/1	1/0.5	6	15	0.50	0.205	88.4	15.5	0.81	1.00	1.25
10	24/7/32	7/0.2	6	15	0.60	0.227	83.2	9.0	0.91	1.12	1.37
11	24/19/36	19/0.13	6	15	0.63	0.241	80.2	9.0	0.91	1.12	1.37
12	22/1	1/0.65	7	18	0.65	0.324	56.1	20.0	0.95	1.15	1.40
13	22/7/30	7/0.25	7	18	0.75	0.355	52.5	13.5	1.07	1.27	1.52
14	22/19/34	19/0.16	7	18	0.80	0.382	49.8	9.0	1.07	1.27	1.52
15	20/1	1/0.8	8	22	0.80	0.517	34.7	20.0	1.10	1.30	1.53
16	20/7/28	7/0.32	8	22	0.97	0.563	33.0	13.5	1.27	1.47	1.73
17	20/19/32	19/0.2	8	22	1.00	0.616	30.3	9.0	1.27	1.47	1.73
18	18/37/34	37/0.16	10	35	1.14	0.743	23.68	13.5	-	1.64	1.85
19	18/1	1/1.03	10	35	1.03	0.835	21.8	20	-	1.53	1.73
20	18/7/26	7/0.4	10	35	1.20	0.897	20.7	13.5	-	1.75	2.00
21	18/19/30	19/0.25	10	35	1.25	0.963	19.1	13.5	-	1.75	2.00
22	16/7/24	7/0.50	13	45	1.50	1.428	12.32	13.5	-	2.00	2.30
23	16/19/29	19/0.29	13	45	1.45	1.229	14.9	13.5	-	2.03	2.25
24	16/37/32	37/0.20	13	45	1.40	1.200	15.0	13.5	-	2.00	2.20
25	15/19/28	19/0.32	15	50	1.60	1.527	12.5	13.5	-	2.15	2.40
26	14/19/27	19/0.36	25	60	1.83	1.941	9.50	13.5	-	2.42	2.69
27	14/37/30	37/0.25	25	60	1.75	1.889	10.0	13.5	-	2.35	2.60
28	13/19/26	19/0.4	30	75	2.00	2.386	7.80	13.5	-	2.60	2.85
29	13/37/29	37/0.29	30	75	2.05	2.442	7.65	13.5	-	2.65	2.90
30	12/19/25	19/0.45	35	90	2.25	3.085	6.00	13.5	-	2.90	3.17
31	12/37/28	37/0.32	35	90	2.24	2.974	6.50	13.5	-	2.85	3.12
32	11/19/24	19/0.5	40	100	2.50	3.729	5.00	13.5	-	3.15	3.40
33	11/37/27	37/0.36	40	100	2.52	3.764	4.95	13.5	-	3.20	3.42
34	10/37/26	37/0.4	45	110	2.82	4.740	3.90	13.5	-	3.40	3.68
35	10/19/22	19/0.65	50	120	3.20	6.302	3.00	13.5	-	3.80	4.10
36	09/133/29	133/.029	75	180	4.35	8.980	2.20	13.5	-	-	5.35
37	8/133/28	133/0.29	85	210	4.37	10.590	1.66	13.5	-	-	5.40
38	6/133/27	133/0.36	100	240	5.41	13.589	1.40	13.5	-	-	6.68
39	05/133/26	133/0.4	130	310	6.00	17.222		13.5	-	-	7.00

Multicore/ Multipair Cables

We manufacture a wide variety of PTFE insulated multi core signal & control cables suitable for extreme environments and rough usage. These are mainly used for high reliability and high temperature interconnections. This construction is widely used in instrumentation of aerospace and industrial applications requiring high reliability and ultimate physical and electrical performance.

These cables are available with shield as well as without shield. Shield is provided to prevent electrostatic interferences; it keeps external electrical disturbances away for affecting the signal and eliminates the unwanted transfer of signal between circuits of same cable.

Conductors	SPC/ NPC/ BC in any number of pairs, triads, quads combined into one large cable.
Primary Insulation	PTFE (Teflon*)
Shielding	SPC/ TPC/ BC/ SS
Jackets	PTFE/ PVC/ Fiberglass/ Customer requirements.
Voltage Range	250V/ 600V/ 1000V/ Customer requirements.
Temp. Range	-ve 65°C to +ve 260°C

PTFE Electrical Sleeves

We manufacture PTFE sleeves and tubing as per the requirements of Indian Defense Standard JSS 54802. Made from PTFE tape wrapping and sintering process these sleeves are more flexible, high tear resistance and are mechanically more stable.

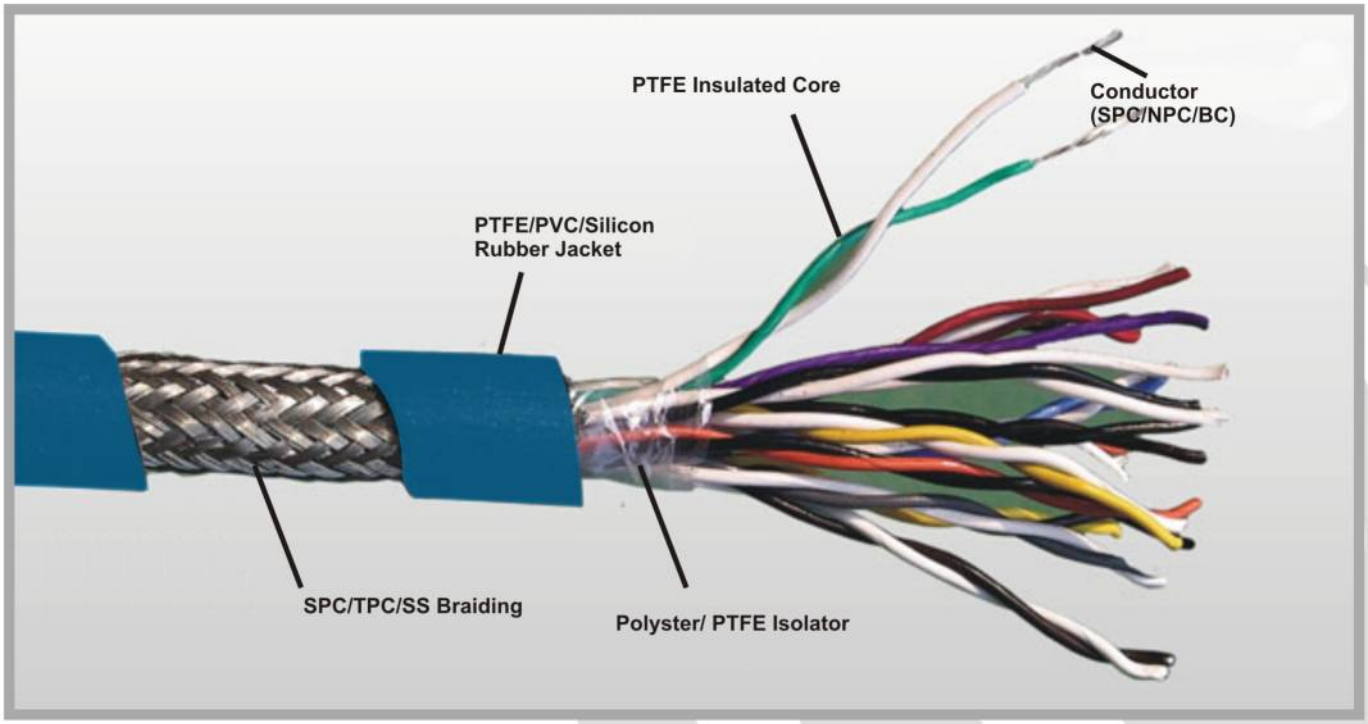
Construction	PTFE Tape Wrapping and Sintering
Temp. Range	From -ve 65°C to +ve 260°C.
Properties	Free from Aging, Fungus, Water Absorption, Resistance to UV radiation, High Dielectric Strength, Unaffected by soldering temperatures, Resistant to Lubricants, Aircraft or Rocket fuel and virtually all chemicals.

COLOURS

All 11 solid standard colours and Natural opaque. Bicolour is also available.

Standard Range of PTFE Sleeves

INNER DIAMETER (D) Nominal (mm)	0.50	0.75	1.00	1.50	2.00	2.50	3.00
WALL THICKNESS (T) Nominal (mm)	0.25	0.25	0.30	0.40	0.40	0.40	0.40
INNER DIAMETER (D) Nominal (mm)	3.50	4.00	5.00	6.00	7.00	8.00	9.00
WALL THICKNESS (T) Nominal (mm)	0.50	0.50	0.50	0.50	0.50	0.50	0.50



ISO 9001 International Standards Certifications

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Thermocouple Extension Cables, RTD, Compensating Cables

We manufacture RTD, Thermocouple Extension and Compensating cables with the PTFE and Fiberglass Insulation. We make following constructions commonly with parallel as well as twisted form.

- PTFE/ PTFE
- PTFE/ PTFE/ SS Braided
- PTFE/ (SPC/ TPC/ BC) Braided/ PTFE
- PTFE/ Fiberglass/ SS
- Fiberglass/ Fiberglass
- PTFE/ Fiberglass/ PTFE

We manufacture the above Insulated cables as per the requirement or specifications of the customer with insulating material PTFE and Fiberglass. We manufacture 2 Core, 3 Core, 4 Core and 6 Core, 8 core RTD cables with above mentioned constructions using best quality Bare Copper, Silver Plated Copper and Nickel Plated Copper Conductors.

High Temperature Cables

Our team has developed the high temperature cable in our in-house R&D and testing facilities that can easily withstand at temperature ranging up to 1500°C, such as wiring of furnace heaters, ovens and industrial wiring under harsh working conditions.

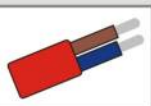
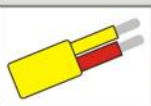
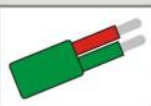
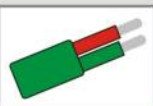
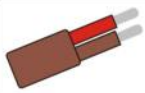
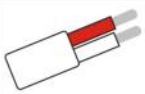
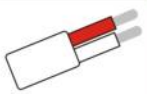
Conductor	NPC/ SPC/ BC
Primary Insulation	PTFE (Teflon*)
Voltage Range	Up to 1100 V
Temp. Range	Upto 1500°C

Note : Technical Specification could be shared with user on request.

Applications

- Cement Plants
- Steel Plants
- Kilns
- Glass Plants
- Power Plants

INTERNATIONAL COLOUR CODES FOR THERMOCOUPLE CABLES INSULATION

THERMOCOUPLE TYPE	BRITISH BS : 1843	AMERICAN ANSI MC96.1	GERMAN DIN43710-4	INDIAN IS:8784	MATERIAL OF EXTENSION CABLE		MV OUTPUT	
EXTENSION					**+ve(Lead)**	**-ve(Lead)**	**100°C**	**200°C**
Kx	Chromel/ Alumel					Ni/Cr	NiAl	4.10	8.13
Jx	Iron/ Constantan					Iron	Constantan	5.26	10.77
Tx	Copper/ Constantan					Copper	Constantan	4.24	9.17
COMPENSATING								
Vx/ KC	Copper/ Constantan (Com for Type K)					Copper	Constantan	4.10	
Rc/ SC	Copper/ Cupronic (Com for Type R/S)					Copper	Cupronic	0.645	

RF Coaxial Cables

Coaxial cable are used for transmission of high frequency energy and signals with low loss and with minimal phase and amplitude distortion.

The Co-axial cable type RG were originally developed for Military applications. They meet the requirements of American Military regulation MIL-C-17, because of their internationally acclaimed constant high quality, they are today employed through out the whole field of High Frequency Technology.

Construction	Silver Plated Copper covered Steel
Insulation	PTFE Tape Wrapped Sintered (TWS)
Braiding	Silver Plated Copper. Double Braiding is also available.
Secondary Insulation	PTFE Tape Wrapped Sintered (TWS)

High Voltage Corona Resistance (CR) Cables

We manufacture the PTFE insulated corona resistance cable the performance of which does not deteriorate even at very high voltage even up to 16KV. PTFE insulation is most suitable for applications where high voltage is applied at elevated temperatures due to its stable dielectric properties even upto 250°C. Following are the brief qualities of such cables;

- Longer life even at high voltage
- Free from aging and cracks due to mechanical stress

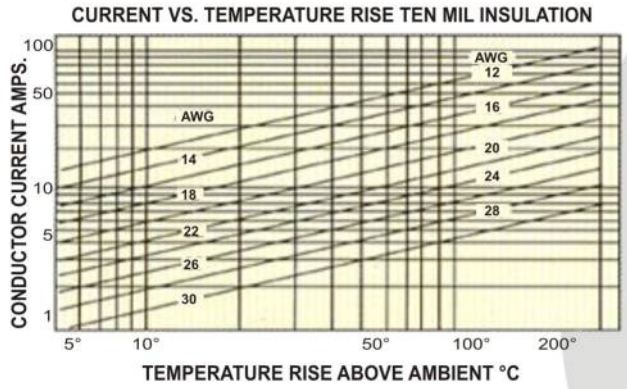
Corona, also known as partial discharge, is a type of localized emission resulting from transient gaseous ionization in an insulation system on application of high voltage.

The presence of corona degrades insulation in long run. This causes the risk of system failure due to dielectric breakdown and thus reduce the reliability.

ELECTRICAL & PHYSICAL CHARACTERISTICS OF COAXIAL CABLES

EQUIVALENT JSSNo.	TYPE	SIZE OF THE CONDUCTOR mm/inches	DIA OF PTFE INSULATION mm/inches	DIA OF SPC BRAID SHIELD mm/inches	DIA OF PTFE SHEATHING mm/inches	NOMINAL WEIGHT kg/km	CHARACTERISTIC IMPEDANCE ohms.	NOMINAL CAPACITANCE pf/mt.	NOMINAL VELOCITY RATIO	NOMINAL ATTENUATION db/mt at				MAXIMUM RF RATING WATTS IN AIR; ambient temp. 40°C at				Max. RF VOLTAGE KV (PEAK)
										100 MHz	200 MHz	400 MHz	1000 MHz	100 MHz	200 MHz	400 MHz	1000 MHz	
WRC-55	RG 187 AU	7/0.100 7/0.004	1.600/ 0.063	2.060/ 0.081	2.790/ 0.112	16	75	64	0.695	0.33	0.37	0.18	0.46	0.33	0.37	0.18	0.46	1.2
WRC-46	RG 188 AU	7/0.170 7/0.0067	1.520/ 0.060	1.980/ 0.078	2.790/ 0.112	16	50	95	0.965	0.41	0.47	0.23	0.62	0.41	0.47	0.23	0.62	1.2
WRC-59	RG 195 AU	7/0.100 7/0.004	2.590/ 0.102	3.050/ 0.120	3.940/ 0.158	30	95	49.2	0.695	0.53	0.55	0.35	0.92	0.53	0.55	0.35	0.92	1.5
WRC-45	RG 196 AU	7/0.100 7/0.004	0.860/ 0.034	1.320/ 0.052	2.030/ 0.081	8.5	50	93.5	0.695	0.79	1.02	0.56	1.5	0.79	1.02	0.56	1.5	1.0

Note :- Dielectric Strength of above Co-axial Cables is 2.0 AC RMS and Insulation resistance 23000 AMEG.



Custom Capability

We have complete in-house capabilities to design & develop a cable as per your specifications; please furnish your detailed requirements to suggest you the suitable cable.

ISO 9001 International Standards Certifications

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ABBREVIATIONS :

PTFE	: Polytetra Fluoro Ethylene	**JSS**	: Joint Service Standards	**BC**	: Annelled Bare Copper
ETFE	: Ethylene Tri Fluoro Ethylene	**MIL**	: American Military Standard	**SS**	: Stainless Steel
FEP	: Fluorinated Ethylene Propylene	**SPC**	: Silver Plated Copper	**RF**	: Radio Frequency
PFA	: Perfluoroalkoxy	**TPC**	: Tin Plated Copper	**RTD**	: Resistance Temperature Detector
BSG	: British Military Standard	**NPC**	: Nickel Plated Copper		

PTFE
ELECTRONICS PVT. LTD.

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