

# Heat Shrinkable Tubing and Braided Sleeving.

For secure bundling of cables and wiring in applications, where the movement of engine components or high temperatures are a key factor. Protective sleeving provides resistance to heat and abrasion as well as isolation.

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## TCN20

### Features and Benefits

TCN20 is a general purpose, flame-retardant polyolefin tubing with good resistance to common fluids and solvents. This flexible, 2:1 shrink ratio tubing has an excellent physical and electrical performance. The low shrink temperature and the mechanical strength make this tubing being widely used in the electrical, electronics and automotive industry.

### Application

TCN20 is suitable for a wide range of applications like electrical insulations, mechanical protection, cable bundling, et cetera.



Heat shrink tubing TCN20.

Material Data	
Material	<b>Polyolefin, cross-linked (POX)</b>
Colour	<b>Black (BK)</b>
Shrink Ratio	<b>2:1</b>
Longitudinal change after shrinkage	<b>+/- 5%</b>
Min. Shrink Temperature	<b>+100 °C</b>
Operating Temperature	<b>-55 °C to +125 °C</b>
Dielectric Strength	<b>20 kV/mm according to IEC 243</b>
Flammability	<b>self-extinguishing</b>
Certification	<b>UL224</b>



TCN20

Technical Table

Article-No.	Type	Supplied Ø D min.	Recov. Ø d max.	Wall (WT) nom.	Reel Length (m)
300-73010	<b>TCN20 1,2/0,6</b>	1.2	0.6	0.30	300
300-73020	<b>TCN20 1,6/0,8</b>	1.6	0.8	0.35	300
300-73030	<b>TCN20 2,4/1,2</b>	2.4	1.2	0.45	300
300-73040	<b>TCN20 3,2/1,6</b>	3.2	1.6	0.45	300
300-73050	<b>TCN20 4,8/2,4</b>	4.8	2.4	0.50	300
300-73060	<b>TCN20 6,4/3,2</b>	6.4	3.2	0.55	300
300-73070	<b>TCN20 9,5/4,8</b>	9.5	4.7	0.55	150
300-73080	<b>TCN20 12,7/6,4</b>	12.7	6.4	0.65	100
300-73090	<b>TCN20 19,1/9,5</b>	19.1	9.5	0.80	60
300-73100	<b>TCN20 25,4/12,7</b>	25.4	12.7	0.90	60
300-73110	<b>TCN20 38,1/19,1</b>	38.0	19.0	1.02	30
300-73120	<b>TCN20 50,8/25,4</b>	50.8	25.4	1.15	30

All dimensions in mm. Subject to technical changes.



Please note! Not every product listed carries these approvals! For Product Specific Approvals please refer to the Appendix.

## TCN20 overexpanded

### Features and Benefits

This extremely fast shrinking, thin wall tubing with its high shrink ratio of approx. 3:1 is flexible, and self-extinguishing. Its mechanical strength and resistance against chemicals and solvents make it suitable for a wide range of applications.

### Application

Mechanical, electrical and corrosion protection applications for parts with high diameter variances. This fast shrinking tubing makes it suitable for high volume production.



Battery cables safely insulated with TCN20 overexpanded shrinkable tubing.



Due to its thin wall TCN20 overexpanded is suitable for insulation of antennas.

Material Data	
Material	<b>Polyolefin, cross-linked (POX)</b>
Colour	<b>Black (BK)</b>
Shrink Ratio	<b>3:1</b>
Longitudinal change after shrinkage	<b>+/- 5%</b>
Min. Shrink Temperature	<b>+100 °C</b>
Operating Temperature	<b>-55 °C to +125 °C</b>
Dielectric Strength	<b>20 kV/mm</b>
Flammability	<b>self-extinguishing</b>
Certification	<b>UL224</b>



Technical Table

Article-No.	Type	Supplied Ø D min.	Recov. Ø d max.	Wall (WT) nom.	Reel Length (m)
300-73130	<b>TCN20 2,4/0,8</b>	2.4	0.8	0.50	300
300-73140	<b>TCN20 3,2/1,2</b>	3.2	1.2	0.50	300
300-73150	<b>TCN20 4,8/1,6</b>	4.8	1.6	0.50	300
300-73160	<b>TCN20 6,6/2,4</b>	6.6	2.4	0.55	300
300-73170	<b>TCN20 9,5/3,2</b>	9.5	3.2	0.65	150
300-73180	<b>TCN20 12,7/4,8</b>	12.7	4.8	0.75	100
300-73190	<b>TCN20 19,0/6,4</b>	19.0	6.4	0.75	60
300-73200	<b>TCN20 25,4/9,5</b>	25.4	9.5	0.79	60
300-73210	<b>TCN20 38,0/12,7</b>	38.0	12.7	0.95	30

All dimensions in mm. Subject to technical changes.



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### EPS-300, EPS-400

#### Features and Benefits

EPS is a flexible and thin walled heat shrink tubing with a co-extruded hot melt adhesive inner wall. The adhesive flows well to provide an environmental sealing of complex parts and protect against moisture.

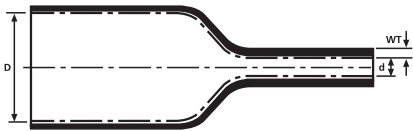
#### Application

EPS seals and protect a wide variety of electrical applications like back end connector sealing, connector-to-cable transitions and splices.



EPS offers high shrink ratios and protection against humidity.

**Cut lengths available on request. Please contact us!**



EPS-300, EPS-400

#### Material Data

Material	<b>Polyolefin, cross-linked (POX)</b>
Colour	<b>Black (BK)</b>
Shrink Ratio	<b>3:1, 4:1</b>
Longitudinal change after shrinkage	<b>-10% max.</b>
Min. Shrink Temperature	<b>+120 °C</b>
Operating Temperature	<b>-55 °C to +110 °C</b>
Dielectric Strength	<b>15 kV/mm according to IEC 684 P2</b>
Flammability	<b>ASTM D 2671 (outer layer only)</b>
Certification	<b>MIL-DTL-23053/4, SAE - AMS - DTL-23053/4</b>



#### Technical Table

Article-No.	Type	Supplied Ø D min.	Recov. Ø d max.	Wall (WT) nom.	Reel Length (m)
<b>EPS-300</b>					
340-06020	<b>EPS-300 6/2</b>	6.0	2.0	1.00	300
340-09030	<b>EPS-300 9/3</b>	9.0	3.0	1.40	150
340-12040	<b>EPS-300 12/4</b>	12.0	4.0	1.80	100
340-19060	<b>EPS-300 19/6</b>	19.0	6.0	2.20	50
340-40130	<b>EPS-300 40/13</b>	40.0	13.0	2.50	25
<b>EPS-400</b>					
341-04010	<b>EPS-400 4/1</b>	4.0	1.0	1.00	300
341-08020	<b>EPS-400 8/2</b>	8.0	2.0	1.00	150
341-12030	<b>EPS-400 12/3</b>	12.0	3.0	1.40	100
341-16040	<b>EPS-400 16/4</b>	16.0	4.0	1.80	100
341-24060	<b>EPS-400 24/6</b>	24.0	6.0	2.20	50
341-32080	<b>EPS-400 32/8</b>	32.0	8.0	2.50	25

All dimensions in mm. Subject to technical changes.



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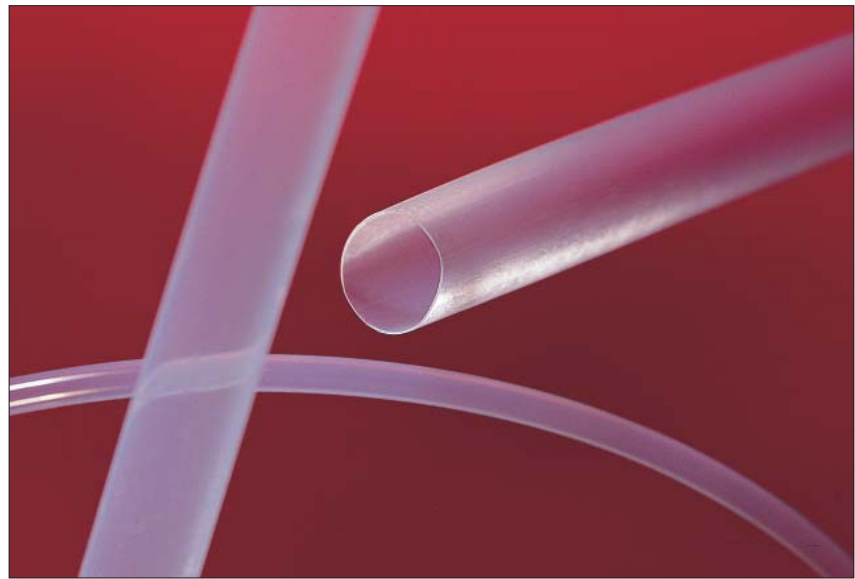
**TFE2, TFE4**

**Features and Benefits**

TFE heat shrink tubing is specified predominantly because of its very high temperature resistance. It is an extra thin walled transparent tubing that has both high abrasion resistance and good resistance against aggressive chemicals. TFE is available in either 2:1 (TFE2) or 4:1 (TFE4) shrink ratios.

**Application**

TFE is ideal for high temperature applications, when resistance to aggressive fluids is required or a very thin walled tubing is needed, for example in pH-measuring instruments. TFE tubing is also used to reduce movement due to friction, covering cylinders for example.



TFE is available in either 2:1 or 4:1 shrink ratios.

Technical Table

Article-No.	Type	Wire Size (AWG)	Supplied Ø D min.	Recov. Ø d max.	Wall (WT) nom.	Length (L) (m)
<b>TFE2</b>						
336-00079	TFE2-30	30	0.86	0.38	0.23	1.22
336-00099	TFE2-28	28	0.96	0.46	0.23	1.22
336-00109	TFE2-26	26	1.17	0.56	0.23	1.22
336-00139	TFE2-24	24	1.27	0.69	0.25	1.22
336-00149	TFE2-22	22	1.39	0.82	0.25	1.22
336-00159	TFE2-20	20	1.52	0.99	0.30	1.22
336-00199	TFE2-18	18	1.93	1.25	0.30	1.22
336-00249	TFE2-16	16	2.36	1.55	0.30	1.22
336-00319	TFE2-14	14	3.05	1.83	0.30	1.22
336-00399	TFE2-12	12	3.81	2.26	0.30	1.22
336-00489	TFE2-10	10	4.85	2.85	0.30	1.22
336-00619	TFE2-8	8	6.10	3.58	0.38	1.22
336-00779	TFE2-6	6	7.67	4.52	0.38	1.22
336-00949	TFE2-4	4	9.40	5.69	0.38	1.22
336-01109	TFE2-2	2	10.92	7.06	0.38	1.22
336-01209	TFE2-0	0	11.94	8.81	0.38	1.22
<b>TFE4</b>						
		Size/Inch				
339-00209	TFE4-5/64	5/64	1.98	0.64	0.22	1.22
339-00329	TFE4-1/8	1/8	3.17	0.94	0.25	1.22
339-00340	TFE4-3/16	3/16	4.75	1.27	0.30	1.22
339-00649	TFE4-1/4	1/4	6.35	1.60	0.30	1.22
339-00959	TFE4-3/8	3/8	9.52	2.44	0.30	1.22
339-01279	TFE4-1/2	1/2	12.7	3.66	0.38	1.22
339-01599	TFE4-5/8	5/8	15.87	4.52	0.38	1.22
339-01909	TFE4-3/4	3/4	19.05	5.69	0.38	1.22
339-02549	TFE4-1	1	25.4	7.06	0.38	1.22
339-03189	TFE4-1 1/4	1 1/4	31.75	8.82	0.38	1.22

All dimensions in mm. Subject to technical changes.

AWG American Wire Gauge

Material Data

Material	<b>Polytetrafluoroethylene (PTFE)</b>
Colour	<b>Transparent (CL)</b>
Shrink Ratio	<b>2:1, 4:1</b>
Operating Temperature	<b>-65 °C to +260 °C</b>
Min. Shrink Temperature	<b>+330 °C</b>
Flammability	<b>non-burning</b>
Longitudinal change after shrinkage	<b>-20% max.</b>
Dielectric Strength	<b>40 kV/mm according to DIN 53481</b>
Certification	<b>SAE - AMS - DTL-23053/12, MIL-DTL-23053/12</b>



TFE2, TFE4



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