

## PTFE HEAT SHRINKABLE SLEEVING

PTFE heat shrink sleeves are made from pure virgin PTFE with no fillers or additives and therefore offer all of the exceptional properties of PTFE. The major characteristic is an upper continuous working temperature of 260°C. This exceeds that of any other heat shrink polymer. In addition it is completely resistant to virtually all chemicals and UV radiation. It is available in 4:1 and 2:1 shrink ratios, and the shrinking temperature is 327°C.



### PTFE 2:1 and 4:1 Heat Shrink

PTFE heat shrink sleeve offers the ultimate in heat shrink sleeve performance. Sleeveings up to 50.8mm have a 4:1 shrink ratio, thus very complex shapes or terminals can be covered. The resulting shrunk sleeve is very tough, has outstanding voltage breakdown resistance and very high temperature resistance. The maximum continuous working temperature is 260°C, but the PTFE is still tough at 300°C and is not damaged by short term exposure to 400°C. Because of these properties, PTFE heat shrink is widely used in fire critical applications, where it can withstand the fire environment for a short time and of course it is naturally non-flammable.

The shrinking temperature of 330°C must be considered when using it with materials, that might be damaged during the shrinking process.

Common applications are terminal insulation on heating elements, jet engines. Also parts subjected to strong UV radiation e.g. UV lamps, external aircraft fittings etc.

#### Properties that make PTFE and FEP unique

- Virtually total chemical and solvent resistance
- Working temperature from -200°C to +260°C
- Remains flexible at cryogenic temperatures
- Very low coefficient of friction
- Non-stick surface
- Extremely high electrical resistance
- Very low dielectric loss at high frequencies
- Total resistance to UV radiation
- Naturally non-flammable
- Non-toxic
- Inert to body tissue (does not cause reaction)

#### Selection & Use

Select size by allowing a generous amount of shrinkage rather than using a tight sleeve if possible.

Hot air guns are the preferred method of applying heat. PTFE needs 330°C, so gun temperatures should be at least 400°C. To obtain the higher temperature we suggest a hot air gun of 1.5KW capacity.

Parts to be covered that have a large thermal mass e.g. a solid steel roller, may need preheating when PTFE heat shrink is applied, to prevent chilling of the PTFE, causing a loose fit. Heating an object in an oven at 400°C can be used to advantage to shrink the PTFE sleeve, particularly when a number of parts are to be covered. We also offer a covering service for large numbers, or difficult items.

**Need more technical advice? Require samples or a quotation?**

**Our knowledgeable customer service team can help and can be contacted either by phone or email on +44 (0) 1285 762000 or sales@adtech.co.uk.**

# PTFE Heat Shrink Sleeving

## PTFE Shrink Ratio 4:1

Adtech Part No	Supplied ID mm	Recovered ID mm	Recovered Wall mm
TR20	1.98	0.64	0.22
TR32	3.18	0.94	0.25
TR48	4.75	1.27	0.30
TR64	6.35	1.60	0.30
TR80	7.92	2.00	0.30
TR95	9.52	2.44	0.30
TR111	11.13	2.85	0.30
TR125	12.70	3.66	0.38
TR143	14.27	3.94	0.38
TR158	15.88	4.52	0.38
TR175	17.45	5.03	0.38
TR190	19.05	5.70	0.38
TR222	22.23	6.20	0.38
TR254	25.40	7.06	0.38
TR317	31.75	8.82	0.38
TR381	38.00	10.20	0.38
TR444	44.44	11.00	0.38
TR508	50.8	12.70	0.38

## PTFE Shrink Ratio 2:1

Adtech Part No	Supplied ID mm	Recovered ID mm	Recovered Wall mm
HST30-T	0.86	0.38	0.23
HST28-T	0.97	0.46	0.23
HST26-T	1.17	0.56	0.23
HST24-T	1.27	0.64	0.25
HST22-T	1.40	0.80	0.25
HST20-T	1.52	0.97	0.30
HST19-T	1.65	1.10	0.30
HST18-T	1.93	1.17	0.30
HST17-T	2.15	1.38	0.30
HST16-T	2.35	1.45	0.30
HST14-T	3.05	1.82	0.30
HST12-T	3.81	2.26	0.30
HST10-T	4.85	2.80	0.30
HST08-T	6.10	3.55	0.38
HST06-T	7.67	4.40	0.38
HST04-T	9.40	5.45	0.38
HST02-T	10.90	6.90	0.38
HST00-T	11.95	8.56	0.38

## Technical Data Summary

Before Shrinking		After Shrinking	
Shrink temperature	330°C	Chemical & solvent resistance	Virtually total
Shrink ratio	2:1 or 4:1 nominal	Hardness	D55
Shelf life	Infinite	UV resistance	Completely unaffected
Max storage temperature	100°C	Water absorption	0.01%
Colour	Translucent	Coefficient of friction	0.01
Toxicity	Completely non-toxic	Flammability	Non-inflammable (naturally)
Working temperature range	-200° to +200°C	Radiation resistance	0.3 megarad
Length change on shrinking	+/-12%	Melt temperature (for sealing)	Does not melt

## Fume Precautions during heat shrinking

Like all plastics and rubber, fluoroplastics decompose at high temperatures and give off unpleasant fumes. Unlike other polymers, the fumes from fluoroplastics are odourless and therefore, may not be noticed during overheating of the material. Ample ventilation must always be provided when heating these heat shrink materials above 300°C. Where they are used in a production process, extraction equipment is recommended.

### Need more technical advice?

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