

## KOSOO K-2

### Environment friendly, flexible, flame-retardant polyolefin tubing

#### ■ Application

KOSOO K-2 is environment friendly, flexible, flame-retardant, irradiated crosslinking heat-shrinkable modified polyolefin tubing. Unlike other typical flame-retardant tubings, K-2 is free of PCBs, PCPs, polybrominated biphenyls (PBBs), polybrominated biphenyl oxides and ethers (PBBOs, PBBEs and PBDEs) and toxic heavy metal compounds, which are classified as environmentally hazardous substances. This high-reliability product is widely used for insulation or jacketing of wire harness, strain relief of wire terminations and connections, bundling of wire harness, protection of soldered points, insulation and capsule of electronic components, anti-corrosive protection, identification and color coding, etc.

#### ■ Features/Benefits

- Shrink ratio: 2:1.
- Very flexible, highly flame-retardant.
- Low shrink temperature.
- Good thermal stability.
- Excellent physical, chemical and electrical properties.
- Free of PCBs, PCPs, polybrominated biphenyls (PBBs), polybrominated biphenyl oxides and ethers (PBBOs, PBBEs and PBDEs) and toxic heavy metal compounds, which are classified as environmentally hazardous substances. Conform to European RoHS environmental directive.
- Wide range of sizes and colors.

#### ■ Operating Temperature Range

Operating temperature range: -55°C~135°C

Minimum shrink temperature: 70°C

Minimum full recovery temperature: 110°C

#### ■ Standards/Approvals

UL224 E214175 125°C 600V VW-1

AMS-DTL-23053/5 class 1 and class 2

#### ■ Specification values

	Property	Requirement	Test method	Typical data	
Physical:	Concentricity	70% min.	ASTM D 2671	≥70%	
	Tensile strength	10.4MPa min.	ASTM D 638	≥14.0MPa	
	Elongation	200% min.	ASTM D 638	≥400%	
	Heat shock	No cracking, dripping or flowing	ASTM D 2671	Pass	
	Low temperature flexibility	No cracking	ASTM D 2671	Pass	
	Aging 158°C, 168hrs				
	Tensile strength after aging	70% of original min.	ASTM D 638	≥90%	
	Elongation after aging	100% min.	ASTM D 638	≥300%	
Electrical:	Dielectric voltage withstand	2500V, 60sec no breakdown	UL224	Pass	

	Dielectric strength	19.7KV/mm min.	ASTM D 2671	25KV/mm
	Volume resistivity	10 <sup>14</sup> Ω·cm min.	ASTM D 876	≥10 <sup>14</sup> Ω·cm
Chemical:	Corrosion	No corrosion	ASTM D 2671	Pass
	Flammability	VW-1	UL224	Pass

■ Product sizes

• Inch size

mm/inch

Size	Inside diameter		Wall thickness	Standard length (m/spool)
	As supplied (min.)	After recovery (max.)	After recovery	
3/64	1.2 (0.046)	0.6 (0.023)	0.40±0.08 (0.016±0.003)	200
1/16	1.6 (0.063)	0.8 (0.031)	0.43±0.08 (0.017±0.003)	200
3/32	2.4 (0.093)	1.2 (0.046)	0.51±0.08 (0.020±0.003)	200
1/8	3.2 (0.125)	1.6 (0.062)	0.51±0.08 (0.020±0.003)	200
3/16	4.8 (0.187)	2.4 (0.093)	0.51±0.08 (0.020±0.003)	100
1/4	6.4 (0.250)	3.2 (0.125)	0.64±0.08 (0.025±0.003)	100
3/8	9.5 (0.375)	4.8 (0.187)	0.64±0.08 (0.025±0.003)	100
1/2	12.7 (0.500)	6.4 (0.250)	0.64±0.08 (0.025±0.003)	100
3/4	19.1 (0.750)	9.5 (0.375)	0.76±0.08 (0.030±0.003)	50
1	25.4 (1.000)	12.7 (0.500)	0.89±0.12 (0.035±0.005)	50
1 1/4	31.8 (1.250)	15.9 (0.625)	1.02±0.15 (0.040±0.006)	50
1 1/2	38.1 (1.500)	19.1 (0.750)	1.02±0.15 (0.040±0.006)	50
2	50.8 (2.000)	25.4 (1.000)	1.14±0.16 (0.045±0.007)	50
5/2	63.5 (2.500)	31.8 (1.250)	1.27±0.20 (0.050±0.008)	25
3	76.0 (3.000)	38.1 (1.500)	1.27±0.20 (0.050±0.008)	25
4	101.6 (4.000)	50.8 (2.000)	1.40±0.23 (0.055±0.009)	25
5	127.0 (5.000)	63.5 (2.500)	1.52±0.23 (0.060±0.009)	15
6	147.0 (5.787)	75.0 (2.953)	1.70±0.25 (0.067±0.010)	15
8	200.0 (7.874)	100.0 (3.937)	1.90±0.28 (0.075±0.011)	-

• Metric size

Size (mm)	As supplied (mm)		After recovery (mm)		Standard length (m/spool)
	Inside diameter	Wall thickness	Inside diameter (max.)	Wall thickness (min.)	
Φ0.8	1.0±0.2	0.15±0.05	0.50	0.25	200
Φ1.0	1.5±0.3	0.20±0.05	0.60	0.33	200
Φ1.5	2.0±0.3	0.20±0.05	0.75	0.36	200
Φ2.0	2.5±0.3	0.20±0.05	1.00	0.44	200
Φ2.5	3.0±0.3	0.25±0.05	1.25	0.44	200
Φ3.0	3.5±0.3	0.25±0.05	1.50	0.44	200
Φ3.5	4.0±0.3	0.25±0.05	1.75	0.44	200
Φ4.0	4.5±0.3	0.25±0.05	2.00	0.44	200
Φ4.5	5.0±0.3	0.25±0.05	2.25	0.44	200
Φ5.0	5.5±0.3	0.28±0.05	2.50	0.56	100
Φ6.0	6.5±0.3	0.28±0.05	3.00	0.56	100
Φ7.0	7.6±0.3	0.30±0.07	3.50	0.56	100
Φ8.0	8.6±0.3	0.30±0.07	4.00	0.56	100
Φ9.0	9.6±0.3	0.30±0.07	4.50	0.56	100
Φ10.0	10.7±0.4	0.30±0.07	5.00	0.56	100
Φ11.0	11.7±0.4	0.30±0.07	5.50	0.56	100
Φ12.0	12.7±0.4	0.30±0.07	6.00	0.56	100

Φ13.0	13.7±0.4	0.35±0.08	6.50	0.69	100
Φ14.0	14.7±0.4	0.35±0.08	7.00	0.69	100
Φ15.0	15.7±0.5	0.35±0.08	7.50	0.69	100
Φ16.0	16.7±0.5	0.35±0.08	8.00	0.69	100
Φ18.0	19.0±0.5	0.40±0.10	9.00	0.77	100
Φ20.0	21.0±0.5	0.40±0.10	10.00	0.77	50
Φ22.0	23.0±0.5	0.40±0.10	11.00	0.77	50
Φ25.0	26.0±1.0	0.45±0.10	12.50	0.87	50
Φ28.0	29.0±1.0	0.45±0.10	14.00	0.87	50
Φ30.0	31.5±1.0	0.45±0.10	15.00	0.87	50
Φ35.0	36.5±1.0	0.50±0.10	17.50	0.97	50
Φ40.0	41.5±1.0	0.50±0.10	20.00	0.97	50
Φ50.0	51.5±1.0	0.55±0.10	25.00	0.97	50
Φ60.0	63.0±3.0	0.60±0.15	30.00	1.17	25
Φ70.0	71.0±3.0	0.60±0.15	35.00	1.17	25
Φ80.0	81.0±3.0	0.65±0.15	40.00	1.20	25
Φ90.0	91.0±3.0	0.75±0.15	45.00	1.30	25
Φ100	101.0±3.0	0.75±0.15	50.0	1.30	25
Φ120	121.0±4.0	0.80±0.20	60.0	1.40	15
Φ150	151.0±4.0	0.80±0.20	75.0	1.50	15
Φ180	181.0±4.0	0.85±0.20	90.0	1.60	15

## ■ Ordering Information

### Color

Standard: Black (-BK), white (-WH), red (-RD), blue (-BL), yellow (-YL), green (-GR)

Nonstandard: Brown (-BR), orange (-OR), violet (-VT), gray (-GY), yellow & green stripe (-GYS)

### Nonstandard size

Special sizes are available upon request.

### Standard packaging

On spools. Cut pieces are available upon request.

### Ordering description

Specify product type, size (mm or inch) and color.