



MSVLO MSVLO(C)

Military Grade, Fluid Resistant at High Temperature, Heat Shrinkable Identification Sleeves



Description

MSVLO series is military grade cable and wire identification sleeves, which is designed to meet the requirements of outstanding oil resistance. It is made of cross-linked environmentally friendly polyolefin bombarded by high power electron beam with electronic accelerators to meet high end markets where highly reliable cable & wire identification is required. MSVLO conforms to Classes 1 and 3 of AMS-DTL-23053/6, half-hard high molecular materials. Shrink ratios, both 2:1 and 3:1 are available. See below tables. MSVLO boasts amazingly high fluid resistance at high temperature for long time like JP-8 used for aviation fuel oil. It is widely used in aviation and spaceships, high speed rails EMU, submarine as well as other military and architecture industries.

Features

- Fluid resistance at 70°C/158°F for 168h, such as JP-8 fuel oil, temperature rating 135°C /275°F
- High temperature resistant, rated temperature, 135°C
- Highly flame retardant, VW-1
- ROHS compliant
- High reliability, permanent identification
- Heat sensitive, swift recovery
- Computer-printable, any characters and logo are easy to design



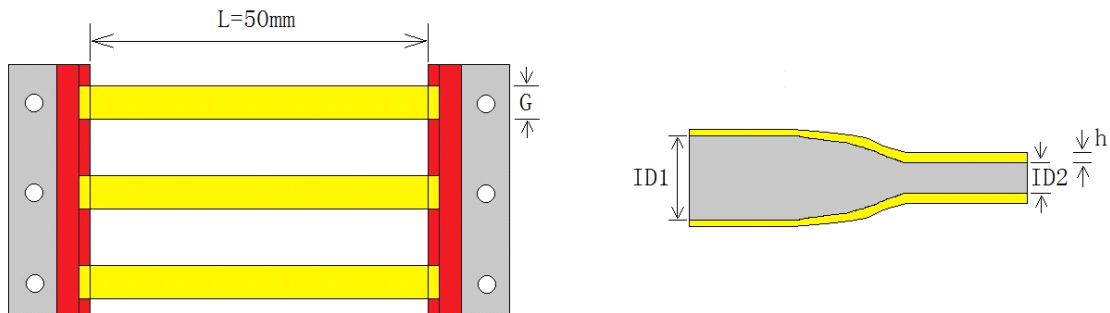
Rated Temperature

- Continuous operating temperature: -55°C~135°C /-67°F~275°F
- Min. shrink temperature: 85°C /+185°F
- Full recovery temperature: 115°C~200°C /239°F~392°F, 8~3minutes
- Max. storage and transportation temperature: ≤50°C /122°F

Standards

- Meets AMS-DTL-23053/5, compatibility: UL224
- Color code soundness: SAE-AS 81531 and MIL-STD-202F/215J

Structure



Dimensions(2:1)

Order Description	Expanded As Supplied(mm)			Recovered After Heating(mm)	
	Inner Diameter ID1	Flatten width G	Dual Wall Thickness H	Inner Diameter ID2	Single Wall Thickness h
MSVLO-2X-1.6/	2.00±0.20	3.7±0.3	0.48±0.10	≤0.79	0.45±0.06



MSVLO-2X-2.4/	2.79±0.20	5.0±0.3	0.48±0.10	≤1.18	0.49±0.06
MSVLO-2X-3.2/	3.64±0.23	6.3±0.4	0.48±0.10	≤1.59	0.51±0.06
MSVLO-2X-4.8/	5.26±0.25	8.9±0.4	0.49±0.10	≤2.36	0.54±0.06
MSVLO-2X-6.4/	6.92±0.28	11.5±0.4	0.50±0.10	≤3.18	0.56±0.06
MSVLO-2X-9.5/	10.2±0.32	16.7±0.5	0.51±0.11	≤4.75	0.59±0.06
MSVLO-2X-12.7/	13.5±0.36	21.8±0.6	0.52±0.11	≤6.35	0.60±0.07
MSVLO-2X-19/	20.1±0.40	32.2±0.6	0.53±0.11	≤9.53	0.62±0.07
MSVLO-2X-25/	26.7±0.45	42.5±0.7	0.55±0.12	≤12.7	0.63±0.07
MSVLO-2X-38/	39.8±0.51	63.2±0.8	0.57±0.12	≤19.1	0.64±0.07
MSVLO-2X-51/	53.0±0.56	83.9±0.9	0.58±0.13	≤25.4	0.64±0.08
MSVLO-2X-76/	79.4±0.56	125.3±1.0	0.59±0.13	≤38.1	0.64±0.09

Dimensions(3:1)

Order Description	Expanded As Supplied (mm)			Recovered After Heating (mm)	
	Internal Diameter ID1	Flatten Width G	Dual Wall Thickness H	Inner Diameter ID2	Single Wall Thickness h
MSVLO-3X-1.6/	2.00±0.20	3.7±0.3	0.47±0.10	≤0.53	0.52±0.06
MSVLO-3X-2.4/	2.79±0.20	5.0±0.3	0.47±0.10	≤0.79	0.57±0.06
MSVLO-3X-3.2/	3.64±0.23	6.3±0.4	0.48±0.10	≤1.06	0.61±0.06
MSVLO-3X-4.8/	5.26±0.25	8.9±0.4	0.49±0.10	≤1.59	0.67±0.06
MSVLO-3X-6.4/	6.92±0.28	11.5±0.4	0.50±0.10	≤2.36	0.71±0.06
MSVLO-3X-9.5/	10.2±0.32	16.7±0.5	0.52±0.11	≤3.18	0.77±0.06
MSVLO-3X-12.7/	13.5±0.36	21.8±0.6	0.53±0.11	≤4.75	0.80±0.07
MSVLO-3X-19/	20.1±0.40	32.2±0.6	0.55±0.11	≤6.35	0.84±0.07
MSVLO-3X-25/	26.7±0.45	42.5±0.7	0.56±0.12	≤8.47	0.86±0.07
MSVLO-3X-38/	39.8±0.51	63.2±0.8	0.57±0.12	≤12.9	0.89±0.07
MSVLO-3X-51/	53.0±0.56	83.9±0.9	0.57±0.13	≤17.2	0.90±0.08
MSVLO-3X-76/	79.4±0.56	125.3±1.0	0.59±0.13	≤25.8	0.92±0.09

Standard Packaging Data

No.	Sizes	Packaging (Pcs/Reel)	
		Box 210	Box 146



1	Φ1.6	2500	250
2	Φ2.4	2500	250
3	Φ3.2	2000	250
4	Φ4.8	2000	250
5	Φ6.4	1500	250
6	Φ9.5	1000	250
7	Φ12.7	500	250
8	Φ19	500	250
9	Φ25	500	250
10	Φ38	250	250
11	Φ51	250	250
12	Φ76	250	250

Technical Performance

Properties			Indicator	Test Method
Specific Property	Unit	States		
Tensile Strength	Mpa	Unaged	≥13.8	ASTM G 154,MIL-DTL-23053E ISO 37,500mm/min 175°C,168h,ISO 188
		Heat aged/After fluid UV aged	≥11.1	
Elongation at break	%	Unaged	≥200	
		Heat aged/After fluid	≥100	
Secent Modulus	Mpa	Unaged	≥173	ASTM D 882
Voltage Withstand	V	Unaged/After aged	2500V,No breakdown in 60 sec.	IEC 243,ASTM G 154 175°C,168h,ISO 188
Dielectric Strength	MV/m	Before ageing	≥19.7	
		Heat Aged/After fluidUV aged	≥15.8	



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Volume Resistivity	Ω.cm	Unaged	≥10 ¹⁴	IEC 93
Dielectric Constant	-	Unaged	≤3.2	ASTM 150
Water Absorption	-	Unaged	≤0.5	ASTM 570,23°C,24h
Bare Copper Corrosion	-	Unaged	No corrosion	23°C,Rh 95±5%,24h 175°C,16h
Heat Shock	-	Unaged	No cracks, flowing, dripping	Wind to specified mandrel , 225°C,4h
Cold Flexibility	-	Unaged	No cracks	Wind to specified mandrel , -30°C,1h
Flammability	-	Unaged	VW-1	IEC 60332-1-3 Ed.1.0 b:2004
Longitudinal Change	%	Unaged	2X : -10~+1	200°C,constant temperature 3min
			3X : -15~+5	
Smoke Density	-	Unaged	-	DIN 5510-2
Toxicity Index	-	Unaged	-	BS 6853:1999 Appendix B