

SUMITUBE™ F4 (Z)

[125°C rating, flame-retarded heat-shrinkable tubing]
UL/CSA recognized

Catalog No. 942 ✓ RoHS directive 10 substances

Waterproofing Flame-retarded UL recognized CSA recognized



Basic Properties

- Material : Irradiated cross-linked flexible flame-retarded polyolefin
- Shrink temperature : min. 90°C
- Shrink ratio : Radial change: min. 50% Longitudinal change: min. -15%
- Continuous operating temperature : -55 to 125°C

Features

- UL/CSA recognized
- Thin wall, quick shrinkage
- Flexible
- Flame-retarded (PBDE/PBB-free)

Specifications/Approvals

UL224 File No. E75077 Catalog No. SUMITUBE™ F4 (Z) or 942
Rating temperature: 125°C Rating voltage: 300V Flammability: VW-1
CSA C22.2 No. 198.1 File No. LR33298
Rating temperature: 125°C Rating voltage: 150V Flammability: VW-1
Electrical Appliance and Material Safety Law (Japan)
Flammability rating (-F-) test registration No.: F-ST53-009 to F-ST53-012

Marking on Surface

125°C VW-1 SUMITOMO-K SUMITUBE F4 (Z) CAT 942 CSA 125°C VW-1 -F-

Applications

- Insulation, protection and reinforcement for termination and joints of electric wire
- Color identification and bundling for electric wires
- Insulation and protection of resistors and capacitors

Properties [UL224]

Properties	Items	Requirements	Typical values*1
Mechanical	Tensile strength (before aging)	min. 10.4MPa	15.2MPa
	Tensile strength (after aging)	158°C x 7 days, min. 7.3MPa	16.0MPa
	Elongation (before aging)	min. 200%	350%
	Elongation (after aging)	158°C x 7 days, min. 100%	350%
	Heat shock	250°C x 4 hours, no crack	Pass
Electrical	Dielectric withstand (before aging)	AC2.5kV x 60 sec., no breakdown	Pass
	Dielectric withstand (after aging)	158°C x 7 days, AC2.5kV x 60 sec., no breakdown	Pass
	Dielectric breakdown (before aging)	min. AC2.5kV	12.6kV
	Dielectric breakdown (after aging)	158°C x 7 days, min. 50% of original and min. AC2.5kV	Pass
	Volume resistivity	min. $1.0 \times 10^{14} \Omega \cdot \text{cm}$	$2.5 \times 10^{16} \Omega \cdot \text{cm}$
Chemical	Corrosion against bare copper	158°C x 7 days, no corrosion after leaving under 95% humidity, 23°C x 24 hours	Pass
	Stability against copper	158°C x 7 days, elongation min. 100% after leaving under 95% humidity, 23°C x 24 hours	342%
	Flammability	Flame-retarded, pass VW-1	Pass

*1: For reference use only

Sizes

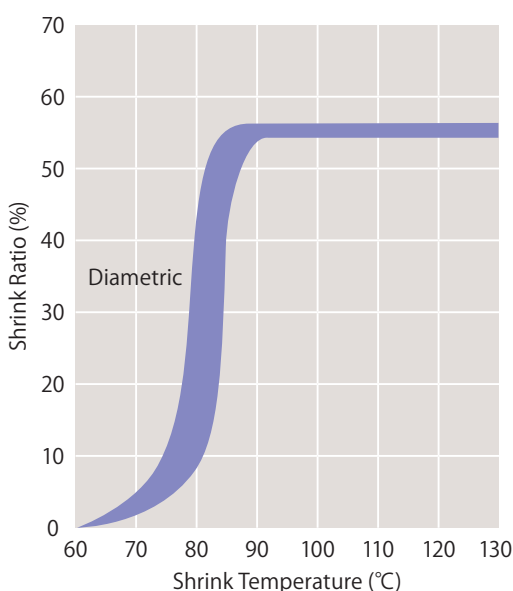
Metric size

Trade size (mm)	As supplied (mm)		After recovered (mm)		Unit length (min.) (m)
	Inside diameter	Wall thickness (nom.)	Inside diameter (max.)	Wall thickness (min.)	
1 × 0.1	1.30 ± 0.30	0.10	0.50	0.20	200
1.5 × 0.1	1.90 ± 0.30	0.10	0.75	0.20	200
2 × 0.1	2.30 ± 0.30	0.10	1.00	0.20	200
2.5 × 0.15	2.80 ± 0.30	0.15	1.25	0.25	200
3 × 0.15	3.30 ± 0.30	0.15	1.50	0.25	200
3.5 × 0.15	3.80 ± 0.30	0.15	1.75	0.25	200
4 × 0.15	4.40 ± 0.30	0.15	2.00	0.25	200
5 × 0.15	5.50 ± 0.30	0.15	2.50	0.25	100
6 × 0.15	6.5 ± 0.4	0.15	3.00	0.28	100
7 × 0.15	7.5 ± 0.4	0.15	3.50	0.28	50
8 × 0.15	8.5 ± 0.4	0.15	4.00	0.28	50
9 × 0.15	9.5 ± 0.4	0.15	4.50	0.28	50
10 × 0.15	10.5 ± 0.4	0.15	5.00	0.28	50

Inch size

Nominal size (inch)	As supplied (mm)		After recovered (mm)		Unit length (min.) (m)
	Inside diameter	Wall thickness (nom.)	Inside diameter (max.)	Wall thickness (min.)	
1/2	13.2 ± 0.5	0.15	6.4	0.28	61
3/4	20.6 ± 0.6	0.18	9.5	0.35	61
1	26.6 ± 0.8	0.20	12.7	0.40	61

Shrink Properties



Colors

- Black, Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray, White

SUMITUBE™

A
C
A4
SUMITUBE LA
C (UL)
D
A2

SUMITUBE B
LB

F (Z)
F3 (Z)
SUMITUBE NHR2
NHR4
V (300V)
V (600V)

F2 (Z)
F4 (Z)
SUMITUBE B2
B2 (3X)
B8

SUMITUBE K
K2

SUMITUBE KH200 (TW)

SUMITUBE KH230 (TW)

SUMITUBE B6
R
AN25

SUMITUBE W

SUMITUBE O2C
W3C

O2B2
W3F2
SUMITUBE W3B2
W3B2 (4X)
SA2
SA3

IRRAX™TUBE
IRRAX™TAPE

A
B
F2
F2 (UL)
V2
IRRAXTUBE RP3
B8
ER2
NHR
FE2
IRRAXTAPE VZL

IRRAX™SLEEVE

SCM2
IRRAXSLEEVE SBI
300/350
SNHM

Composite articles

SUMISEAL
SUMITUBE SA3 CAP

Processing equipment

SUMISHRINKER / HEATING GUN