

# SUMITUBE™ F3 (Z)

[Thin wall, very flexible flame-retarded heat-shrinkable tubing] UL recognized

Catalog No. 941 ✓ RoHS directive 10 substances

Waterproofing Flame-retarded UL recognized CSA recognized



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)

B6  
SUMITUBE R  
AN25

SUMITUBE W

SUMITUBE O2C  
W3C

O2B2  
W3F2  
SUMITUBE W3B2  
W3B2 (4X)  
SA2  
SA3

IRRAX™TUBE  
IRRAX™TAPE

A  
B  
F2  
F2 (UL)  
IRRAXTUBE V2  
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

## 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 105°C

## Features

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

## Specifications/Approvals

UL224

File No. E75077 Catalog No. SUMITUBE™ F3 (Z) or 941  
Rating temperature: 105°C Rating voltage: 300V  
Flammability: VW-1

Electrical Appliance and Material Safety Law (Japan)  
Flammability rating (-F-) test registration No.: F-ST53-009 - F-ST53-012

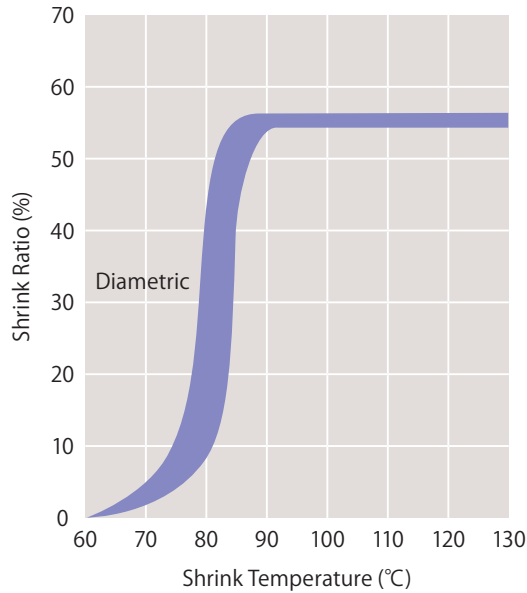
## Marking on Surface

VW-1 -F- ⚡ SUMITOMO-K SUMITUBE F3 (Z) CAT 941 105°C

## 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

## Shrink Properties



## Colors

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

## Properties [UL224]

Properties	Items	Requirements	Typical values*1
Mechanical	Tensile strength (before aging)	min. 10.4MPa	16.0MPa
	Tensile strength (after aging)	136°C x 7 days, min. 7.3MPa	18.7MPa
	Elongation (before aging)	min. 200%	350%
	Elongation (after aging)	136°C x 7 days, min. 100%	390%
	Heat shock	180°C x 4 hours, no crack	Pass
Electrical	Cold bend	-30°C x 1 hour, no crack	Pass
	Dielectric withstand (before aging)	AC2.5kV x 60 sec., no breakdown	Pass
	Dielectric withstand (after aging)	136°C x 7 days, AC2.5kV x 60 sec., no breakdown	Pass
	Dielectric breakdown (before aging)	min. AC2.5kV	14.8kV
	Dielectric breakdown (after aging)	136°C x 7 days, min. 50% of original and min. AC2.5kV	Pass
Chemical	Volume resistivity	min. 1.0 x 10 <sup>16</sup> Ω·cm	3.9 x 10 <sup>16</sup> Ω·cm
	Corrosion against bare copper	136°C x 7 days, no corrosion after leaving under 95% humidity, 23°C x 24 hours	Pass
	Stability against copper	136°C x 7 days, elongation min. 100% after leaving under 95% humidity, 23°C x 24 hours	335%
	Flammability	Flame-retarded, pass VW-1	Pass

\*1: For reference use only

## Sizes

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 ± 0.5	0.15	5.00	0.28	50