# Sumitube™ K

Highly heat/oil/chemical resistant, clear, flame-retardant heat shrinkable tubing
SAE-AMS/UL/CSA approved

Catalog No. 852

# Sumitube™ K2

Highly heat/oil/chemical resistant, clear, flame-retardant heat shrinkable tubing
SAE-AMS/UL approved

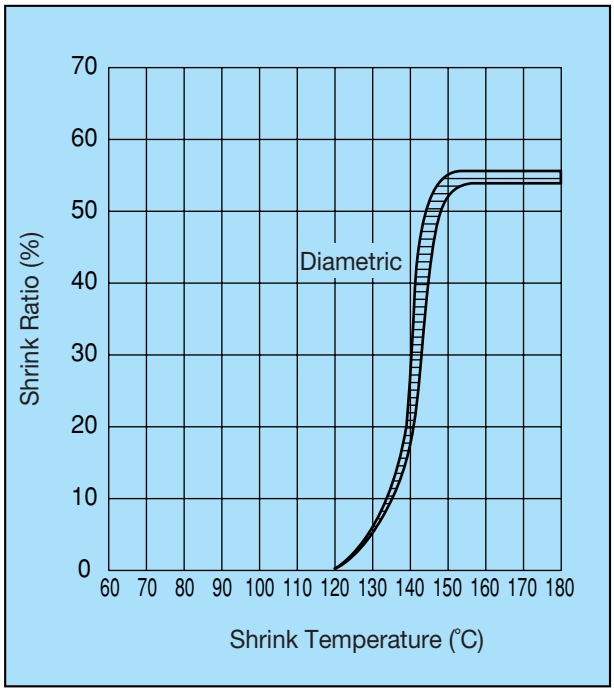
Catalog No. 875

✓RoHS directive

## Basic Properties

(1) Materials : Irradiated cross-linked semi-rigid flame-retardant PVdF
(2) Shrink temperature : min. 150˚C
(3) Shrink Ratio : Radial change: min. 50%
: Longitudinal change (K): 0 +/- 10%
: Longitudinal change (K2): -10 to 5%
(4) Continuous Operating Temperature : -55 to 175˚C

## Shrink Property




## Features

(1) SAE-AMS/UL approved (and CSA for K)
(2) Flame-retardant
(3) Transparent colours
(4) Thin wall
(5) Semi-rigid
(6) Highly resistant against oil and chemicals

## Specification/Approvals

Sumitube™ K: SAE-AMS-DTL-23053/8

UL224
File No. E75077
Catalog No. Sumitube™ K or 852
Rating temperature: 150˚C
Rating voltage: 600V
Flammability: VW-1

CSA C22.2 No. 198.1
File No. LR33298
Rating temperature: 150˚C
Rating voltage: 600V
Flammability: VW-1

Electrical Appliance and Material Safety Law (Japan)
Flammability rating (-F-) test registration No.: F-STS3-017 - F-STS3-020

Sumitube™ K2: SAE-AMS-DTL-23053/18 Class 1

UL224
File No. E70631
Catalog No. Sumitube™ K2 or 875
Flammability: VW-1

Electrical Appliance and Material Safety Law (Japan)
Flammability rating (-F-) test registration No.: F-STS3-017 - F-STS3-020

## Application

(1) Insulation, protection and reinforcement for termination and joints of electric wire
(2) Protection for wire and devices which are used under high temperature, chemicals and oils.
(3) Mechanical protection for metal wire
(4) Fixing and protection for cable labels
(5) Insulation and protection for thermistor, resistor and condenser

## Colours

Black, Red, Green, Blue, White, Clear

## Properties

Sumitube™ K [SAE-AMS-DTL-23053/8]

| Properties | Items | Requirements | Typical values*1 |
|---|---|---|---|
| Mechanical | Tensile strength (before aging) | min. 34.5MPa | 41.0MPa |
| | Elongation (before aging) | min. 150% | 405% |
| | Elongation (after aging) | 250˚C x 7 days, min. 50% | 357% |
| | Low temperature flexibility | -55˚C x 4 hours, no crack | pass |
| | Heat shock | 300˚C x 4 hours, no crack | pass |
| | Gravity | max. 1.80 | 1.75 |
| Electrical | Dielectric strength | min. 31.5kV/mm (for 1/2 inch and smaller) | 43.6kV/mm |
| | | min. 23.6kV/mm (for over 1/2 inch) | 31.4kV/mm |
| | Volume resistivity | min. 1.0 x $10^{13}\Omega$·cm | 3.8 x $10^{15}\Omega$·cm |
| Chemical | Transparent stability | 175˚C x 24 hours, no change | pass |
| | Fluid resistance | After immerced at 24˚C x 24 hours, | |
| | Tensile strength | min. 34.5MPa | 38.1MPa |
| | Dielectric strength | min. 19.7kV/mm | 28.6kV/mm |
| | Flammability | Flame-retardant, pass VW-1 | pass |

*1: For reference use only

Sumitube™ K2 [SAE-AMS-DTL-23053/18 Class 1]

| Properties | Items | Requirements | Typical values*1 |
|---|---|---|---|
| Mechanical | Tensile strength (before aging) | min. 24.1MPa | 37.8MPa |
| | Elongation (before aging) | min. 200% | 404% |
| | Elongation (after aging) | 250˚C x 7 days, min. 100% | 383% |
| | Low temperature flexibility | -55˚C x 4 hours, no crack | pass |
| | Heat shock | 275˚C x 4 hours, no crack | pass |
| | Gravity | max. 1.90 | 1.75 |
| Electrical | Dielectric strength | min. 15.7kV/mm | 35.4kV/mm |
| | Volume resistivity | min. 1.0 x $10^{11}\Omega$·cm | 2.8 x $10^{15}\Omega$·cm |
| Chemical | Transparent stability | 200˚C x 24 hours, no change | pass |
| | Fluid resistance | After immerced at 24˚C x 24 hours, | |
| | Tensile strength | min. 13.9MPa | 37.4MPa |
| | Dielectric strength | min. 15.7kV/mm | 25.2kV/mm |
| | Elongation | min. 100% | 419.00% |
| | Flammability | Flame-retardant, pass VW-1 | pass |

*1: For reference use only

## Sizes

| Nominal size (inch) | Supplied ID (mm) | | Recovered ID (mm) | | Unit length (min.) (m) | |
|---|---|---|---|---|---|---|
| | Inside diameter (min.) | Wall thickness (nom.) | Inside diameter (max.) | Wall thickness | K | K2 |
| 3/64 | 1.20 | 0.10 | 0.60 | 0.25 ± 0.05 | 1.22 | 305 |
| 1/16 | 1.60 | 0.10 | 0.80 | 0.25 ± 0.05 | 1.22 | 305 |
| 3/32 | 2.40 | 0.12 | 1.20 | 0.27 ± 0.04 | 1.22 | 152.5 |
| 1/8 | 3.20 | 0.12 | 1.60 | 0.27 ± 0.04 | 1.22 | 152.5 |
| 3/16 | 4.80 | 0.12 | 2.40 | 0.27 ± 0.04 | 1.22 | 61 |
| 1/4 | 6.4 | 0.14 | 3.20 | 0.33 ± 0.05 | 1.22 | 61 |
| 3/8 | 9.5 | 0.14 | 4.80 | 0.33 ± 0.05 | 1.22 | 61 |
| 1/2 | 12.7 | 0.14 | 6.4 | 0.33 ± 0.05 | 1.22 | 61 |
| 3/4 | 19.1 | 0.18 | 9.5 | 0.43 ± 0.07 | 1.22 | 61 |
| 1 | 25.4 | 0.20 | 12.7 | 0.48 ± 0.07 | 1.22 | 61 |