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## Heat Shrink Tubing Thin Wall, 2:1 Shrink Ratio (Includes Assortment Packs)

### **Description:**

NTE's Thin Wall Heat Shrink Tubing is a high performance, multi purpose, professional grade, flexible, flame retardant, polyolefin based heat-shrinkable tubing with excellent electrical, chemical and physical properties. This tubing is used extensively in industrial and military applications for cable and wire harnessing, strain relief, insulation, color coding, identification and protection against fluids.

### **Specifications:**

- MIL-DTL-23053/5, Class 1 and 3, CSA C22.2 No 198.1
- UL 224, 125°C, VW1 (Except Clear)

### **Features:**

- Available in Black, Blue, Red, Green, Yellow, White, Clear, Brown, Grey, Orange and Violet
- Also available in assorted packages

### **Technical Data:**

| Properties                          | Test Method   | Typical Value                    |
|-------------------------------------|---------------|----------------------------------|
| <b>Physical</b>                     |               |                                  |
| Tensile Strength                    | ASTM D 638    | 13 N/mm <sup>2</sup>             |
| Elongation at Break                 | ASTM D 638    | 400%                             |
| Longitudinal Change                 | ASTM D 2671   | +5%, -5% Maximum                 |
| Water Absorption                    | ASTM D 570    | 0.15% Maximum                    |
| Specific Gravity                    | ASTM D 792    | 1.4                              |
| <b>Chemical</b>                     |               |                                  |
| Fungus Resistance                   | MIL-1-7444    | Inert                            |
| Fluid Resistance                    | MIL-1-23053/5 | Good                             |
| Copper Corrosion                    | ASTM D 2671 B | Good                             |
| <b>Thermal</b>                      |               |                                  |
| Continuous Operating Temperature    |               | -55° to +135°C                   |
| Minimum Shrink Temperature          |               | > +90°C                          |
| Heat Shock (4 Hours at +250°C)      | ASTM D 2671   | No Dripping, Cracking or Flowing |
| Heat Aging (168 Hours at +150°C)    | ASTM D 638    | Elongation 300%                  |
| Low Temperature Flexibility (-55°C) | ASTM D 2671 C | No Cracking                      |
| Flammability                        | UL 224 VW 1   | Pass (Except Clear)              |
| <b>Electrical</b>                   |               |                                  |
| Voltage Rating                      |               | 600V                             |
| Dielectric Strength                 | ASTM D 2671   | 25kV/mm                          |
| Volume Resistivity                  | ASTM D 257    | 10 @ 14 ohm.cm                   |

**Products Covered:** (Note 1, Note 2)

| NTE Catalog Number |             |             |             |             |         | Size<br>(inch) | I.D. (in mm) |      | Rec. Wall<br>Thickness<br>(mm) |
|--------------------|-------------|-------------|-------------|-------------|---------|----------------|--------------|------|--------------------------------|
| 100' Spool         | 50' Spool   | 25' Spool   | 48"         | 6"          | Qty/Pkg |                | Exp.         | Rec. |                                |
| 47-100100-XX       | 47-10050-XX | -           | 47-20048-XX | 47-20006-XX | 30      | 3/64           | 1.2          | 0.6  | 0.43                           |
| 47-101100-XX       | 47-10150-XX | -           | 47-20148-XX | 47-20106-XX | 30      | 1/16           | 1.6          | 0.8  | 0.43                           |
| 47-102100-XX       | 47-10250-XX | -           | 47-20248-XX | 47-20206-XX | 30      | 3/32           | 2.4          | 1.2  | 0.51                           |
| 47-103100-XX       | 47-10350-XX | -           | 47-20348-XX | 47-20306-XX | 30      | 1/8            | 3.2          | 1.6  | 0.51                           |
| 47-104100-XX       | 47-10450-XX | -           | 47-20448-XX | 47-20406-XX | 25      | 3/16           | 4.8          | 2.4  | 0.52                           |
| 47-105100-XX       | 47-10550-XX | -           | 47-20548-XX | 47-20506-XX | 20      | 1/4            | 6.4          | 3.2  | 0.65                           |
| 47-106100-XX       | 47-10650-XX | -           | 47-20648-XX | 47-20606-XX | 15      | 5/16           | 7.9          | 4.0  | 0.65                           |
| 47-107100-XX       | 47-10750-XX | -           | 47-20748-XX | 47-20706-XX | 15      | 3/8            | 9.5          | 4.7  | 0.65                           |
| 47-108100-XX       | 47-10850-XX | -           | 47-20848-XX | 47-20806-XX | 12      | 1/2            | 12.7         | 6.4  | 0.65                           |
| 47-109100-XX       | 47-10950-XX | 47-10925-XX | 47-20948-XX | 47-20906-XX | 10      | 3/4            | 19.1         | 9.5  | 0.77                           |
| 47-110100-XX       | 47-11050-XX | 47-11025-XX | 47-21048-XX | 47-21006-XX | 7       | 1              | 25.4         | 12.7 | 0.89                           |
| 47-111100-XX       | 47-11150-XX | 47-11125-XX | 47-21148-XX | 47-21106-XX | 4       | 1 1/2          | 38.1         | 19.1 | 1.00                           |
| 47-112100-XX       | 47-11250-XX | 47-11225-XX | 47-21248-XX | 47-21206-XX | 3       | 2              | 50.8         | 25.4 | 1.10                           |
| -                  | -           | -           | 47-21348-XX | -           | 1       | 3              | 77.0         | 39.0 | 1.20                           |

Note 1. Replace XX with: BK = Black, BL = Blue, R = Red, G = Green, Y = Yellow, W = White, CL = Clear, BR = Brown, GR = Grey, OR = Orange and VT = Violet.

Note 2. Premium colors (Brown, Grey, Orange and Violet) are only available in 48" lengths and in sizes from 3/64" up to 1".

**Assorted Thin Wall Packages:**

| NTE Part No. | Color                                                                           | Diameter<br>(Inches)                                                                                          | Length<br>(Inches) | Pieces | Bag/Box |
|--------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------|--------|---------|
| HS-ASST-1    | Black                                                                           | 3/32, 1/8, 3/16, 1/4, 3/8, 1/2<br>(4 Pieces of Each Diameter)                                                 | 6                  | 24     | Bag     |
| HS-ASST-2    | Black                                                                           | 1/16 (60 Pieces), 1/8 (40 Pieces),<br>3/16 (20 Pieces), 1/4 (18 Pieces),<br>3/8 (10 Pieces), 1/2 (10 Pieces)  | 2 1/2              | 158    | Box     |
| HS-ASST-3    | Red                                                                             | 1/16 (60 Pieces), 1/8 (40 Pieces),<br>3/16 (20 Pieces), 1/4 (18 Pieces),<br>3/8 (10 Pieces), 1/2 (10 Pieces)  | 2 1/2              | 158    | Box     |
| HS-ASST-4    | Black                                                                           | 1/16, 3/32, 1/8, 3/16, 1/4, 3/8, 1/2<br>(4 Pieces of Each Diameter)                                           | 4                  | 28     | Bag     |
| HS-ASST-5    | (2) Black, (2) Red, (2) Clear,<br>(1) Green, (1) Blue,<br>(1) Yellow, (1) White | 1/8                                                                                                           | 6                  | 10     | Bag     |
| HS-ASST-6    | (2) Black, (2) Red, (2) Clear,<br>(1) Green, (1) Blue,<br>(1) Yellow, (1) White | 3/16                                                                                                          | 6                  | 10     | Bag     |
| HS-ASST-7    | (2) Black, (2) Red, (2) Clear,<br>(1) Green, (1) Blue,<br>(1) Yellow, (1) White | 1/4                                                                                                           | 6                  | 10     | Bag     |
| HS-ASST-8    | (2) Black, (2) Red, (2) Clear,<br>(1) Green, (1) Blue,<br>(1) Yellow, (1) White | 3/8                                                                                                           | 6                  | 10     | Bag     |
| HS-ASST-9    | Black, Red, Clear, Green,<br>Blue, Yellow, White                                | 1/16 (60 Pieces), 3/32 (35 Pieces),<br>1/8 (25 Pieces), 3/16 (20 Pieces),<br>1/4 (10 Pieces), 3/8 (10 Pieces) | 4                  | 160    | Box     |
| HS-ASST-10   | (2) Black, (2) Red, (2) Clear,<br>(1) Green, (1) Blue,<br>(1) Yellow, (1) White | 1/16                                                                                                          | 6                  | 10     | Bag     |

**Assorted Thin Wall Packages (Cont'd):**

| <b>NTE Part No.</b> | <b>Color</b>                                                                    | <b>Diameter<br/>(Inches)</b> | <b>Length<br/>(Inches)</b> | <b>Pieces</b> | <b>Bag/Box</b> |
|---------------------|---------------------------------------------------------------------------------|------------------------------|----------------------------|---------------|----------------|
| HS-ASST-11          | (2) Black, (2) Red, (2) Clear,<br>(1) Green, (1) Blue,<br>(1) Yellow, (1) White | 3/32                         | 6                          | 10            | Bag            |
| HS-ASST-12          | (2) Black, (2) Red, (2) Clear,<br>(1) Green, (1) Blue,<br>(1) Yellow, (1) White | 1/2                          | 6                          | 10            | Bag            |