



# Standard Specification for Crosslinked Chlorinated Polyolefin Heat-Shrinkable Tubing for Electrical Insulation<sup>1</sup>

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## 1. Scope

1.1 This specification covers flexible crosslinked chlorinated polyolefin heat-shrinkable tubing used for electrical insulating purposes. It is supplied in an expanded form and will shrink to the specified diameter when heated.

1.2 The values stated in inch-pound units are to be regarded as the standard accept for temperature, which is stated in degrees Celsius. SI values in parentheses are for information only.

## 2. Referenced Documents

### 2.1 ASTM Standards:

D 412 Test Methods for Vulcanized Rubber and Thermo-

plastic Rubbers and Thermoplastic Elastomers—Tension<sup>2</sup>

D 1711 Terminology Relating to Electrical Insulation<sup>3</sup>

D 2671 Test Methods for Heat-Shrinkable Tubing for Electrical Use<sup>4</sup>

D 3636 Practice for Sampling and Judging Quality of Solid Electrical Insulating Materials<sup>4</sup>

### 2.2 Military Standards:<sup>5</sup>

MIL-H-5606 Hydraulic Fluid Petroleum Base, Aircraft, Missile and Ordnance

MIL-T-5624 Turbine Fuel, Aviation, Grades JP4 and JP5

MIL-L-7808 Lubrication Oil, Aircraft, Turbine Engine, Synthetic Base

MIL-L-23699 Lubrication Oil, Aircraft, Turbine Engines, Synthetic Base

MIL-A-8243 Anti-Icing and De-Icing Defrosting Fluid

MIL-G-5572 Fuel, Aviation, Grades 100 and 130

### 2.3 Federal Standard:

SS-S-550 Sodium Chloride, Technical, for Water Softening Units<sup>5</sup>

## 3. Terminology

3.1 *Definitions*: For definitions of terms used in this standard, refer to Terminology D 1711.

3.2 *Definitions of Terms Specific to This Standard*:

3.2.1 *chlorinated polyolefin, n*—a polymer or polymer blend based on chlorinated polyolefin(s), chlorinated olefin copolymer(s) or chlorinated polybutadiene polymer(s).

## 4. Classification

4.1 *Type I*—Normal operating temperature.

4.2 *Type II*—Extended operating temperature.

## 5. Ordering Information

5.1 When ordering to this specification the purchaser must state the type, class, and size of the tubing required.

## 6. Materials and Manufacture

6.1 The compound used in the manufacture of this heat-shrinkable tubing shall be based on chlorinated polyolefin as defined in Section 3, Terminology. The finished compound shall be free of foreign matter other than antioxidants, flame retardants, processing aids, crosslinking agents, pigments or other additives as appropriate.

6.2 The tubing shall be extruded, crosslinked and then expanded to the required dimensions.

## 7. Chemical Property Requirements

7.1 The material shall conform to the chemical requirements specified in Tables 1 and 2.

7.2 Every lot of material manufactured requires testing for flammability, but the other chemical property requirements may be tested less frequently or with a frequency agreed upon by the purchaser and seller.

## 8. Other Property Requirements

8.1 The material shall conform to the mechanical, thermal, and electrical requirements of Table 3.

8.2 Every lot of material manufactured shall be tested for heat shock, tensile strength, and elongation, but other requirements may be tested less frequently or with a frequency agreed upon by the purchaser and seller.

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee D-9 on Electrical and Electronic Insulating Materials and is the direct responsibility of Subcommittee D09.07 on Flexible and Rigid Insulating Materials.

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 09.01.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 10.01.

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 10.02.

<sup>5</sup> Available from Naval Publications and Forms Center, 5801 Tabor Ave., Philadelphia, PA 19120.