

Heat Shrink Selection Guide

Nelco #	Material/Typical Application	Operating Temp. Range	Shrink Temp. (min.)	Shrink Ratio	Standard Sizes Expanded Diam.	Dielectric Strength (V-SAE-AMS)	Volume Resistivity (ohm-cm)	Tensile Strength (PSI)	Ultimate Elongation (%)
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SINGLE-WALL POLYOLEFIN TUBING

NP-221	Flexible Polyolefin - General Purpose flame retardant insulation for UL, CSA and SAE-AMS-DTL-23053/5 applications; cable and component covering. Class 1 = opaque colors; Class 2 = clear.	-55°C to +135°C	212°F 100°C	2:1	3/64" to 4"	900	10 ¹⁵	2400	400
NP-221VW	Highly Flame-Retardant, Flexible Polyolefin - Insulation applications, flame-retardant applications requiring UL VW-1 and CSA OFT, fire resistant wiring.	-55°C to +135°C	212°F 100°C	2:1	3/64" to 4"	900	10 ¹⁵	2400	400
NP-203	Very Flexible Polyolefin - Shrink-fit jacketing and insulation of flexible wire bundles and temperature-sensitive components.	-55°C to +135°C	212°F 100°C	3:1	1/16" to 1-1/2"	700	10 ¹⁵	2600	400
NP-295	Semi-Rigid Polyolefin - Protective covering of fragile components; strain relief, wire markers. Class 1 = opaque colors; Class 2 = clear.	-55°C to +135°C	275°F 135°C	2:1	3/64" to 5"	800	10 ¹⁵	2600	400

ADHESIVE-LINED, POLYOLEFIN TUBING

NP-300	Multiple Wall Polyolefin - Insulation, strain relief and sealing of electrical connections, wire splices and components.	-55°C to +110°C	275°F 135°C	2.5:1	1/8" to 1"	900	10 ¹⁵	2200	400
NP-750	Environmental Protection Sleeve - Insulation, strain relief and environmental protection of electrical wire bundles and components.	-55°C to +110°C	250°F 121°C	2:1	1/8" to 2"	800	10 ¹⁴	2100	450
NP-321	Environmental Protection Sleeve - Insulation, strain relief and environmental protection for automotive and marine wire bundles and splices.	-55°C to +110°C	250°F 121°C	3:1	1/8" to 1-1/2"	700	10 ¹⁴	2100	450
NP-421	Environmental Protection Sleeve - Insulation, strain relief, and environmental protection for sealing voids in multiple wire bundles for automotive and marine applications.	-55°C to +110°C	250°F 121°C	4:1	.300" to .700"	700	10 ¹⁴	1900	400

SPECIAL PURPOSE TUBING

NP-350	Polyvinylidene Fluoride (Kynar®) - Heat-resistant transparent insulation and marking for electronic and appliance applications.	-55°C to +175°C	347°F 175°C	2:1	3/64" to 2"	900	10 ¹⁴	5500	350
NP-600	Modified Neoprene® - Insulation and abrasion resistant covering of wiring and cable harnesses. Oil resistant coverings.	-70°C to +121°C	275°F 135°C	2:1	1/8" to 3"	800	10 ¹²	2100	500
NP-650	Fluoroelastomer (Viton) - Synthetic fuel and hydraulic oil resistant applications, high-temperature coverings.	-55°C to +200°C	347°F 175°C	2:1	1/8" to 2"	500	10 ¹²	2400	450
PTFE-HS	Polytetrafluoroethylene Tubing - standard wall, flame retardant heat shrink tubing designed for high heat-resistance applications.	-75°C to 260°C	654°F +/- 25° 346°C +/- 5° to recover	2:1	1/8" to 1"	500	10 ¹⁸	4500	450
NP-105	PVC Heat Shrinkable Tubing - insulation and strain relief, dielectric and mechanical protection applications.	-20°C to 105°C	212°F 100°C	2:1	3/64" to 4"	1083 vpm	10 ¹²	3000	300

HEAVY-DUTY TUBING

NP-700MD	Medium-Duty - Excellent abrasion, corrosion and environmental protection. Flame retardant.	-55°C to +110°C	250°F 121°C	3:1	.400" to 4.30"	500	10 ¹⁴	2400	475
NP-700HD	Heavy-Duty - Fabricated from specially formulated cross-linked polyolefin, assuring long-term environmental protection. Highly chemical, abrasion and split resistant.	-55°C to +110°C	250°F 121°C	3:1	.300" to 7.00"	500	10 ¹⁴	2400	475

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Longitudinal Change (±%)	Specific Gravity	Flammability	Corrosive Effect	Abrasion Resistance	Flexibility	Fuel & Oil Resistance	Solvent Resistance	Resistance to Acids & Alkalis	Applicable Specifications
5	1.3	Self-Extinguish meets UL 224 All-Tubing Flame Test (except clear)	Non-Corrosive	Good	3	Good	Exc.	Exc.	SAE-AMS-DTL-23053/5, Class 1, 2; AMS-3636 & 3637; UL File E39100; CSA LR38227; ABS; RoHS compliant
+1, -10	1.5	Self-Extinguish meets UL 224 VW-1 Test	Non-Corrosive	Good	3	Good	Exc.	Exc.	SAE-AMS-DTL-23053/5, Class 3; UL File E39100, VW-1; CSA LR38227, OFT; RoHS compliant
5	1.29	Self-Extinguish	Non-Corrosive	Good	3	Good	Good	Exc.	SAE-AMS-DTL-23053/5, Class 1; UL File E48398; CSA LR38227; RoHS compliant
5	1.25	Self-Extinguish (except clear)	Non-Corrosive	Good	7	Good	Exc.	Exc.	SAE-AMS-DTL-23053/6, Class 1, 2; AMS-3638 & 3639; UL File E319303; RoHS compliant
+1, -10	1.0	Non-Flame Retardant	Non-Corrosive	Good	7	Good	Good	Exc.	SAE-AMS-DTL-23053/4, Class 1; AMS-3634; UL File E157227; RoHS compliant
+1, -5	1.3	Self-Extinguish meets UL 224 All-Tubing Flame Test (jacket)	Non-Corrosive	Good	3	Good	Good	Exc.	SAE-AMS-DTL-23053/4, Class 2; UL File E39100; RoHS compliant
+1, -15	1.3	Self-Extinguish meets UL 224 All-Tubing Flame Test (jacket)	Non-Corrosive	Good	3	Good	Good	Exc.	SAE-AMS-DTL-23053/4, Class 3; UL File E157227; ABS; RoHS compliant
+1, -10	1.25	Self-Extinguish	Non-Corrosive	Good	7	Good	Good	Exc.	UL File E157227; RoHS compliant
+1, -10	1.7	Self-Extinguish Meets UL 224 VW-1 Test	Non-Corrosive	Exc.	10	Exc.	Exc.	Exc.	SAE-AMS-DTL-23053/18, Class 1; SAE-AMS-DTL-23053/8; AMS-3632; UL File E39100, VW-1, E69751; CSA LR38227 OFT; RoHS compliant
+1, -10	1.3	Self-Extinguish	Non-Corrosive	Exc.	1	Exc.	Good	Exc.	MIL-R-46846; Type 1, Class 1; SAE-AMS-DTL-23053/1, Class 1, 2; AMS-3623; RoHS compliant
+1, -10	1.7	Self-Extinguish	Non-Corrosive	Exc.	4	Exc.	Exc.	Exc.	MIL-R-46846, Type III, Class 1; SAE-AMS-DTL-23053/13; RoHS compliant
+1, -10	2.13-2.0	UL 94 VO	Non-Corrosive	Exc.	10	Exc.	Exc.	Exc.	SAE-AMS-DTL-23053/12 Class 2. RoHS compliant
-15	1.3	Meets UL 224 VW-1 Test	Non-Corrosive	Exc.	3	Exc.	Good	Good	Lead free and RoHS compliant. CSA OFT rated for 600 V. ASTM D 3150. SAE-AMS-DTL-23053/2 Class 2; RoHS compliant
+1, -10	1.28	Self-Extinguish	Non-Corrosive	Good	8	Good	Good	Exc.	SAE-AMS-DTL-23053/15, Class 2; ABS; RoHS compliant
+1, -10	1.28	Self-Extinguish	Non-Corrosive	Good	9	Good	Good	Exc.	SAE-AMS-DTL-23053/15, Class 1; ABS; RoHS compliant