Raychem Heat-Shrinkable NBCCS Tubing and Molded Parts

iS Rayfast

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NBCCS Tubing and Molded Parts

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KEY FEATURES

Tyco Electronics materials have been hardened to withstand the damaging effect of NBC contamination and decontamination

Maximum use of fluoropolymers that do not absorb contaminants and facilitate rapid removal with decontaminants

Survivable after live agent exposure to HD, VX and TGD at interior and exterior exposure levels

Three performance systems

Chemical agent tested – desorption and hazard contact area data available for NBC survivability modeling

Rugged materials protect wires during the harness production, installation,

DESCRIPTION

Tyco Electronics Raychem integrated 700 Series systems for harnessing applications requiring Nuclear Biological and Chemical contamination survivability (NBCCS).

700 Series NBC survivable Systems are System 770, System 780, and System 790. Each of these systems consist of Raychem heat-shrinkable tubing, molded parts, wire, adhesives, adapters, and other components necessary to build harnesses from one connector side to the other. These components in each system are specifically designed for application environments they may be exposed to.

Examples of these environmental elements may include common vehicular or aerospace fluids, extreme high or low temperatures, or mechanical abuse during installation, operation, and storage.

Raychem 700 Systems have been tested under both NBC warfare and conventional environmental conditions.

TEMPERATURE RATING

System 770	-55˚C to +125˚C
System 780	-55˚C to +175˚C
System 790	-65˚C to +200˚C

SPECIFICATIONS

General System Specification	RT-700

Tested to SCX-15112 and SCX-15111 for survivability in a variety of the harshest vehicle fluids at elevated temperatures

Tested to the Army Materiel Requirements for NBCCS in accordance with Test Operation Procedures for TOP 8-2-510, NBC Contamination Survivability

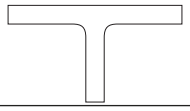
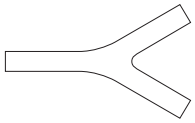
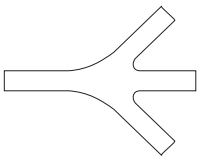
Creates compliance of chassis and engine compartment electrical harnesses in accordance with the Army Regulation 70-75 “Survivability of Army Personnel & Materiel”

	Wire	Tubing	Molded Parts	Adhesive
System 770	SPEC 44	RT-770 Type 1	RT-770 Type II	RT-1012
System 780	SPEC 55	RT-780 Type 1	RT-780 Type II	RT-1014
System 790	SPEC 55	RT-790 Type 1	RT-790 Type II	RT-1014

Other system component specifications not listed here are available from Tyco Electronics.

NBCCS Tubing and Molded Parts

MOLDED PARTS

Low-profile lipped boots for use with a circular connector adapter	202F211 to 274 222F211 to 274 202G211 to 253	
Compressible lipped boots for use with a circular connector adapter	202C611 to 653 202G611 to 653	
"T" Transitions "T" Transitions with reduced diameter	301A511 to 513 322C512 to 513	
"Y" Transitions "Y" Transitions with reduced diameter	381A301 to 303 382C302 to 332	
Trident Transitions	462A421 to 423	

KEY SYSTEM COMPONENTS

Description	System 770	System 780	System 790
Heat-shrinkable tubing	RT-770	RT-780	RT-790
Molded Part - boot	-770	-780	-790
Molded part - transition	-770	-780	TTR (Tinel Lock Transitions)
Adhesive	S1264	S1255-04	S1255-04
Wire - primary	SPEC 44	SPEC 55	SPEC 55
Marker sleeve	TMS-SCE	NBC-SCE	NBC-SCE
Marker protection sleeve	RT-375	RT-375	RT-375
Cable	Thermorad 770	Thermorad 780	Thermorad 790

NBCCS Tubing and Molded Parts

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ORDERING INFORMATION

Tyco Electronics offers a complete system of Raychem brand and other Tyco Electronics brand components that may be used for NBC contamination survivable applications/requirements.

Examples of these components include Tinel-Lock backshells, CRES-Lock band adapters, molded parts, adhesives, heat-shrinkable tubing, over-braids, interconnection soldering devices, wires, cables, connectors, contacts, etc.

Part numbers, product sizes, additional characteristics of products can be found in Specification Control Drawings and Raychem RT specifications. Contact a Tyco Electronics representative or visit

PART NUMBERING*

WIRE

XX A X 1 1 X – XX – X/X – X

- Jacket Color per MIL-STD-681, white (9) preferred
- Primary Wire Insulation Color/Stripe Color, when applicable
- Conductor Size
- Conductor Type (1=Sn/Cu, 2=Ag/Cu, 3=Ni/Cu, 4=Ag/HSCA, 6=Ni/HSCA)
- Number of Conductors
- Class of Wire (1=600V equipment wire)
- Constructions (0=Primary, 1=Round Braid, 2=Flat Braid)
- Type (A= AWG Number)
- Basic Specification Number (44 or 55)

TUBING

RT – XXX – NN – 0 – SP

- Package Designation (SP = Spool)
- Color (0 = standard, black)
- Tubing Diameter
- Product Family Name (770, 780, or 790)

MOLDED PARTS

X X XX X XX – XXX – XX – 0

- Color (0= standard, black)
- Modification (Omit if not applicable)
- Material Number (770, 780, 790 or 791)
- Molded Part Size
- Family Designator
- Type of Part
- Angle or Part (0, 2, 6 or 8)
- Number of Openings (2, 3, or 4)

•Always confirm the validity of part numbers with appropriate Raychem Specification Control Drawings.

TYPICAL SURFACE CHEMICAL AGENT EXPOSURE LEVEL PERFORMANCE DATA

Interior (STB Decontamination)

	Agents (units)	System 770	System 780	System 790
Desorption	HD (µg/cm^2)	<0.23	<0.20	<0.16
	V_X (µg/cm^2)	0.10	<0.02	<0.01
	TGD (µg/cm^2)	6.38	1.40	0.50
Contact Hazard	HD (mg/cm^2)	<0.050	<0.050	<0.00001
	V_XA_{max} (m^2)	>65.6	>70.0	>22.6
	TGD A_{max} (m^2)	32.6	141	96.8

Exterior (DS2 Decontamination)

	Agents (units)	System 770	System 780	System 790
Desorption	HD (µg/cm^2)	<0.21	<0.21	<0.25
	V_X (µg/cm^2)	0.11	<0.05	<0.04
	TGD (µg/cm^2)	1.54	<0.04	<0.01
Contact Hazard	HD (mg/cm^2)	<0.020	<0.021	<0.00001
	V_XA_{max} (m^2)	>61.8	>70.0	>22.6
	TGD A_{max} (m^2)	194	>1500	726

Notes:
1. Refer to Raychem Specification RT-700 for additional performance specification.
2. NBC performance data is based on tests done in accordance with TOP 8-2-511
3. The details in regards to the above test data are available upon request from Tyco Electronics.
4. Contact Tyco Electronics for more information for these NBCCS and other Raychem brand integrated harnessing systems.
5. All information, including illustrations, is believed to be reliable. Users, however, should independently evaluate the suitability of each product for their application.

Raychem RT-770 Series

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PRODUCT DIMENSIONS

Size	As Supplied Inside Diameter		Recovered Dimensions							
			Inside Diameter		Wall Thickness					
	Minimum		Maximum		Minimum		Maximum		Nominal	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
1/8	0.125	*3.17*	0.062	*1.57*	0.011	*0.28*	0.017	*0.43*	0.014	*0.35*
3/16	0.187	*4.74*	0.093	*2.36*	0.013	*0.33*	0.019	*0.48*	0.016	*0.41*
1/4	0.250	*6.35*	0.125	*3.17*	0.015	*0.38*	0.022	*0.56*	0.018	*0.46*
3/8	0.375	*9.50*	0.187	*4.74*	0.018	*0.46*	0.024	*0.61*	0.020	*0.51*
1/2	0.500	*12.70*	0.250	*6.35*	0.020	*0.51*	0.026	*0.66*	0.022	*0.56*
5/8	0.625	*15.90*	0.312	*7.93*	0.023	*0.58*	0.030	*0.76*	0.026	*0.66*
3/4	0.750	*19.05*	0.375	*9.50*	0.029	*0.74*	0.036	*0.91*	0.032	*0.81*
1	1.000	*25.40*	0.500	*12.70*	0.034	*0.86*	0.041	*1.04*	0.037	*0.99*
1-1/4	1.250	*31.75*	0.625	*15.87*	0.037	*0.94*	0.044	*1.12*	0.040	*1.01*
1-1/2	1.500	*38.10*	0.750	*19.05*	0.041	*1.04*	0.048	*1.22*	0.045	*1.14*
2	2.000	*50.80*	1.000	*25.40*	0.044	*1.12*	0.052	*1.32*	0.048	*1.22*

PHYSICAL

PROPERTY	UNIT	RT-770 TYPE I TUBING	RT-770 TYPE II MOLDED PARTS	TEST METHOD
Dimensions	Inches (*mm*)	In accordance with Table 1	In accordance with applicable SCD	RT-770
Tensile Strength	Psi (*MPa*)	2500 (*17.2*) minimum	2500 (*17.2*) minimum	ASTM D 412
Ultimate Elongation	Percent	300 minimum	300 minimum	ASTM D 412
Secant Modulus (expanded), 2%	Psi (*MPa*)	100,000 (*689*) maximum	100,000 (*689*) maximum	ASTM 882
Specific Gravity	--	1.85 maximum	1.85 maximum	ASTM D 792
Low Temperature Flexibility 4 hours at -55±3˚C (*-67±5˚F*)	--	No cracking	No cracking	RT-770
Heat Shock 4 hours at 225±5˚C (*437±9˚F*)	--	No dripping, flowing or cracking	No dripping, flowing or cracking	RT-770
Heat Resistance 336 hours at 175±3˚C (*347±5˚F*) Followed by tests for:				RT-770
Tensile Strength	Psi (*MPa*)	2000 (*13.8*) minimum	2000 (*13.8*) minimum	
Ultimate Elongation	Percent	250 minimum	250 minimum	

ELECTRICAL

PROPERTY	UNIT	RT-770 TYPE I TUBING	RT-770 TYPE II MOLDED PARTS	TEST METHOD
Dielectric Strength	Volts/mil (*kV/mm*)	400 (*15.7*) minimum	400 (*15.7*) minimum	ASTM D 149
Volume Resistivity	Ohm-cm	1 x 10^{11} minimum	1 x 10^{11} minimum	ASTM D 257

NUCLEAR

PROPERTY	UNIT	RT-770 TYPE I TUBING	RT-770 TYPE II MOLDED PARTS	TEST METHOD
Radiation Resistance -10 Mrads gamma Followed by tests for:				RT-770
Tensile Strength	Psi (*MPa*)	2000 (*13.8*) minimum	2000 (*13.8*) minimum	
Ultimate Elongation	Percent	150 minimum	150 minimum	

CHEMICAL

PROPERTY	UNIT	RT-770 TYPE I TUBING	RT-770 TYPE II MOLDED PARTS	TEST METHOD
Copper Mirror Corrosion 16 hours at 175±3°C (*347±5°F*)	--	Non Corrosive	Non Corrosive	ASTM D 2671 Procedure A
Fungus Resistance	Growth	Rating of 1 or less	Rating of 1 or less	ASTM G21
Water Absorption 24 hours at 23±3°C (*73±5°F*)	Percent	0.5 maximum	0.5 maximum	ASTM D 570
Flammability Average Burn Time	Seconds	15 maximum	--	ASTM D 2671 Procedure A
Average Burn Time Average extent of burning	Seconds Inches	--	15 maximum 1 maximum	ASTM D 635-98
Fluid Resistance 24 hours at 23±3°C (*73±5°F*) a) JP-8 Jet Fuel (MIL-DTL-83133) b) Diesel Fuel (VV-F-800, DF-2) Followed by tests for: Tensile Strength Ultimate Elongation Weight Increase	 Psi (MPa) Percent Percent	 2000 (*13.8*) minimum 250 minimum 3 maximum	 2000 (*13.8*) minimum 250 minimum 3 maximum	RT-770
24 hours at 50±3°C (*122±5°F*) a) Bore Cleaner (MIL-PRF-372 b) Anti-Icing Fluid (SAE-AMS-1424) c) Salt-5% solution (ASTM D 632) d) Lubricating Oil (MIL-PRF-2104) e) Lubricating Oil (MIL-PRF-23699) f) Arctic Lube (MIL-PRF-46167) g) Cleaning Compound (A-A-59133) h) Electrolyte (P/N 10873919) Followed by tests for: Tensile Strength Ultimate Elongation Weight Increase	 Psi (MPa) Percent Percent	 2000 (*13.8*) minimum 250 minimum 3 maximum	 2000 (*13.8*) minimum 250 minimum 3 maximum	
24 hours at 71±3°C (*160±5°F*) Hydraulic, synthetic (MIL-PRF-46170) Followed by tests for: Tensile Strength Ultimate Elongation Weight Increase	 Psi (MPa) Percent Percent	 2000 (*13.8*) minimum 250 minimum 3 maximum	 2000 (*13.8*) minimum 250 minimum 3 maximum	
4 hours at 23±3°C (*73±5°F*) a) Decontaminating Agent, DS-2 (MIL-D-50030) b) Decontaminating Agent, STB (MIL-DTL-12468) 5% Solution Followed by tests for: Tensile Strength Ultimate Elongation Weight Increase	 Psi (MPa) Percent Percent	 2000 (*13.8*) minimum 250 minimum 3 maximum	 2000 (*13.8*) minimum 250 minimum 3 maximum	RT-770

Raychem RT-780 Series

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PRODUCT DIMENSIONS

Size	As Supplied Inside Diameter		Recovered Dimensions							
			Inside Diameter		Wall Thickness					
	Minimum		Maximum		Minimum		Maximum		Nominal	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
1/8	0.125	*3.17*	0.062	*1.57*	0.011	*0.28*	0.017	*0.43*	0.014	*0.35*
3/16	0.187	*4.74*	0.093	*2.36*	0.013	*0.33*	0.019	*0.48*	0.016	*0.41*
1/4	0.250	*6.35*	0.125	*3.17*	0.015	*0.38*	0.022	*0.56*	0.018	*0.46*
3/8	0.375	*9.50*	0.187	*4.74*	0.018	*0.46*	0.024	*0.61*	0.020	*0.51*
1/2	0.500	*12.70*	0.250	*6.35*	0.020	*0.51*	0.026	*0.66*	0.022	*0.56*
5/8	0.625	*15.90*	0.312	*7.93*	0.023	*0.58*	0.030	*0.76*	0.026	*0.66*
3/4	0.750	*19.05*	0.375	*9.50*	0.029	*0.74*	0.036	*0.91*	0.032	*0.81*
1	1.000	*25.40*	0.500	*12.70*	0.034	*0.86*	0.041	*1.04*	0.037	*0.99*
1-1/4	1.250	*31.75*	0.625	*15.87*	0.037	*0.94*	0.044	*1.12*	0.040	*1.01*
1-1/2	1.500	*38.10*	0.750	*19.05*	0.041	*1.04*	0.048	*1.22*	0.045	*1.14*
2	2.000	*50.80*	1.000	*25.40*	0.044	*1.12*	0.052	*1.32*	0.048	*1.22*

PHYSICAL

PROPERTY	UNIT	RT-780 TYPE I TUBING	RT-780 TYPE II MOLDED PARTS	TEST METHOD
Dimensions	Inches (*mm*)	In accordance with Table 1	In accordance with applicable SCD	RT-780
Tensile Strength	Psi (*MPa*)	3000 (*20.7*) minimum	3000 (*20.7*) minimum	ASTM D 412
Ultimate Elongation	Percent	300 minimum	300 minimum	ASTM D 412
Secant Modulus (expanded), 2%	Psi (*MPa*)	50,000 (*345*) maximum	50,000 (*345*) maximum	ASTM 882
Specific Gravity	--	2.0 maximum	2.0 maximum	ASTM D 792
Low Temperature Flexibility 4 hours at -55±3˚C (*-65±5˚F*)	--	No cracking	No cracking	RT-780
Heat Shock 4 hours at 275±5˚C (*527±9˚F*)	--	No dripping, flowing or cracking	No dripping, flowing or cracking	RT-780
Heat Resistance 336 hours at 200±3˚C (*392±5˚F*) Followed by tests for:				RT-780
Tensile Strength	Psi (*MPa*)	2000 (*13.8*) minimum	2000 (*13.8*) minimum	
Ultimate Elongation	Percent	250 minimum	250 minimum	

ELECTRICAL

PROPERTY	UNIT	RT-780 TYPE I TUBING	RT-780 TYPE II MOLDED PARTS	TEST METHOD
Dielectric Strength	Volts/mil (*kV/mm*)	200 (*7.9*) minimum	200 (*7.9*) minimum	ASTM D 149
Volume Resistivity	Ohm-cm	1 x 10^{11} minimum	1 x 10^{11} minimum	ASTM D 257

NUCLEAR

PROPERTY	UNIT	RT-780 TYPE I TUBING	RT-780 TYPE II MOLDED PARTS	TEST METHOD
Radiation Resistance -10 Mrads gamma Followed by tests for:				RT-780
Tensile Strength	Psi (*MPa*)	2000 (*13.8*) minimum	2000 (*13.8*) minimum	
Ultimate Elongation	Percent	150 minimum	150 minimum	

CHEMICAL

PROPERTY	UNIT	RT-780 TYPE I TUBING	RT-780 TYPE II MOLDED PARTS	TEST METHOD
Copper Mirror Corrosion 16 hours at 175±3°C (*347±5°F*)	--	Non Corrosive	Non Corrosive	ASTM D 2671 Procedure A
Fungus Resistance	Growth	Rating of 1 or less	Rating of 1 or less	ASTM G 21
Water Absorption 24 hours at 23±3°C (*73±5°F*)	Percent	0.5 maximum	0.5 maximum	ASTM D 570
Flammability	--	1) 25% max. flag burn 2) No burning of cotton 3) No flaming or glowing longer than 30 seconds		ASTM D 2671 Procedure C
Average Burn Time Average extent of burning	Seconds Inches	--	15 maximum 1 maximum	ASTM D 635-98
Fluid Resistance 24 hours at 23±3°C (*73±5°F*) a) JP-8 Jet Fuel (MIL-DTL-83133) Followed by tests for: Tensile Strength Ultimate Elongation Weight Increase	 Psi (MPa) Percent Percent	 2000 (*13.8*) minimum 250 minimum 3 maximum	 2000 (*13.8*) minimum 250 minimum 3 maximum	RT-780
24 hours at 50±3°C (*122±5°F*) a) Bore Cleaner (MIL-PRF-372 b) Diesel Fuel DF-2 (A-A-52557A) c) Anti-Icing Fluid (SAE-AMS-1424) d) Salt-5% solution (ASTM D 632) e) Lubricating Oil (MIL-PRF-2104) f) Lubricating Oil (MIL-PRF-23699) g) Arctic Lube (MIL-PRF-46167) h) Cleaning Compound (A-A-59133) i) Electrolyte (P/N 10873919) Followed by tests for: Tensile Strength Ultimate Elongation Weight Increase	 Psi (MPa) Percent Percent	 2000 (*13.8*) minimum 250 minimum 3 maximum	 2000 (*13.8*) minimum 250 minimum 3 maximum	
24 hours at 71±3°C (*160±5°F*) Hydraulic, synthetic (MIL-PRF-46170) Followed by tests for: Tensile Strength Ultimate Elongation Weight Increase	 Psi (MPa) Percent Percent	 2000 (*13.8*) minimum 250 minimum 3 maximum	 2000 (*13.8*) minimum 250 minimum 3 maximum	
4 hours at 23±3°C (*73±5°F*) a) Decontaminating Agent, DS-2 (MIL-D-50030) b) Decontaminating Agent, STB (MIL-DTL-12468) 5% Solution Followed by tests for: Tensile Strength Ultimate Elongation Weight Increase	 Psi (MPa) Percent Percent	 2000 (*13.8*) minimum 250 minimum 3 maximum	 2000 (*13.8*) minimum 250 minimum 3 maximum	RT-780

Raychem RT-790 Series

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PRODUCT DIMENSIONS

Size	As Supplied Inside Diameter Minimum		Recovered Dimensions							
			Inside Diameter Maximum		Wall Thickness					
					Minimum		Maximum		Nominal	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
1/8	0.125	*3.17*	0.062	*1.57*	0.010	*0.25*	0.016	*0.41*	0.012	*0.30*
3/16	0.187	*4.74*	0.093	*2.36*	0.011	*0.28*	0.018	*0.46*	0.014	*0.36*
1/4	0.250	*6.35*	0.125	*3.17*	0.013	*0.33*	0.020	*0.51*	0.016	*0.41*
3/8	0.375	*9.50*	0.187	*4.74*	0.016	*0.41*	0.023	*0.58*	0.019	*0.48*
1/2	0.500	*12.70*	0.250	*6.35*	0.016	*0.41*	0.023	*0.58*	0.019	*0.48*
5/8	0.625	*15.90*	0.313	*7.95*	0.019	*0.48*	0.026	*0.66*	0.022	*0.56*
3/4	0.750	*19.05*	0.375	*9.50*	0.024	*0.61*	0.031	*0.79*	0.027	*0.69*
1	1.000	*25.40*	0.500	*12.70*	0.028	*0.71*	0.035	*0.89*	0.031	*0.79*
1-1/4	1.250	*31.75*	0.625	*15.87*	0.030	*0.76*	0.037	*0.94*	0.033	*0.84*
1-1/2	1.500	*38.10*	0.750	*19.05*	0.034	*0.86*	0.041	*1.04*	0.037	*0.94*
2	2.000	*50.80*	1.000	*25.40*	0.037	*0.94*	0.044	*1.12*	0.040	*1.02*

PHYSICAL

PROPERTY	UNIT	RT-790 TYPE I TUBING	RT-790 TYPE II MOLDED PARTS	TEST METHOD
Dimensions	Inches (*mm*)	In accordance with Table 1	In accordance with applicable SCD	RT-790
Tensile Strength	Psi (*MPa*)	4000 (*27.6*) minimum	4000 (*27.6*) minimum	ASTM D 412
Ultimate Elongation	Percent	300 minimum	300 minimum	ASTM D 412
Secant Modulus (expanded), 2%	Psi (*MPa*)	50,000 (*345*) maximum	50,000 (*345*) maximum	ASTM 882
Specific Gravity	--	2.0 maximum	2.0 maximum	ASTM D 792
Low Temperature Flexibility 4 hours at -65±3˚C (*-85±5˚F*)	--	No cracking	No cracking	RT-790
Heat Shock 4 hours at 300±5˚C (*572±9˚F*)	--	No dripping, flowing or cracking	No dripping, flowing or cracking	RT-790
Heat Resistance 336 hours at 250±3˚C (*482±5˚F*) Followed by tests for:				RT-790
Tensile Strength	Psi (*MPa*)	2000 (*13.8*) minimum	2000 (*13.8*) minimum	
Ultimate Elongation	Percent	150 minimum	150 minimum	

ELECTRICAL

PROPERTY	UNIT	RT-790 TYPE I TUBING	RT-790 TYPE II MOLDED PARTS	TEST METHOD
Dielectric Strength	Volts/mil (*kV/mm*)	200 (*7.9*) minimum	200 (*7.9*) minimum	ASTM D 149
Volume Resistivity	Ohm-cm	1×10^{11} minimum	1×10^{11} minimum	ASTM D 257

NUCLEAR

PROPERTY	UNIT	RT-790 TYPE I TUBING	RT-790 TYPE II MOLDED PARTS	TEST METHOD
Radiation Resistance -10 Mrads gamma Followed by tests for:				RT-790
Tensile Strength	Psi (*MPa*)	3000 (*20.7*) minimum	3000 (*20.7*) minimum	
Ultimate Elongation	Percent	150 minimum	150 minimum	

CHEMICAL

PROPERTY	UNIT	RT-790 TYPE I TUBING	RT-790 TYPE II MOLDED PARTS	TEST METHOD
Copper Mirror Corrosion 16 hours at 200±3˚C (*392±5˚F*)	--	Non Corrosive	Non Corrosive	ASTM D 2671 Procedure A
Fungus Resistance	Growth	Rating of 1 or less	Rating of 1 or less	ASTM G 21
Water Absorption 24 hours at 23±3˚C (*73±5˚F*)	Percent	0.5 maximum	0.5 maximum	ASTM D 570
Flammability	--	1) 25% max. flag burn 2) No burning of cotton 3) No flaming or glowing longer than 30 seconds		ASTM D 2671 Procedure C
Average Burn Time Average extent of burning	Seconds Inches	--	15 maximum 1 maximum	ASTM D 635-98
Fluid Resistance 24 hours at 23±3˚C (*73±5˚F*) a) JP-8 Jet Fuel (MIL-DTL-83133) Followed by tests for:				RT-790
Tensile Strength	Psi (MPa)	3500 (*24.1*) minimum	3500 (*24.1*) minimum	
Ultimate Elongation	Percent	250 minimum	250 minimum	
Weight Increase	Percent	3 maximum	3 maximum	
24 hours at 50±3˚C (*122±5˚F*) a) Bore Cleaner (MIL-PRF-372 b) Diesel Fuel DF-2 (A-A-52557A) c) Anti-Icing Fluid (SAE-AMS-1424) d) Salt-5% solution (ASTM D 632) e) Lubricating Oil (MIL-PRF-2104) f) Lubricating Oil (MIL-PRF-23699) g) Arctic Lube (MIL-PRF-46167) h) Cleaning Compound (A-A-59133) i) Electrolyte (P/N 10873919) Followed by tests for:				
Tensile Strength	Psi (MPa)	3500 (*24.1*) minimum	3500 (*24.1*) minimum	
Ultimate Elongation	Percent	250 minimum	250 minimum	
Weight Increase	Percent	3 maximum	3 maximum	
24 hours at 71±3˚C (*160±5˚F*) Hydraulic, synthetic (MIL-PRF-46170) Followed by tests for:				
Tensile Strength	Psi (MPa)	3500 (*24.1*) minimum	3500 (*24.1*) minimum	
Ultimate Elongation	Percent	250 minimum	250 minimum	
Weight Increase	Percent	3 maximum	3 maximum	
4 hours at 23±3˚C (*73±5F*) a) Decontaminating Agent, DS-2 (MIL-D-50030) b) Decontaminating Agent, STB (MIL-DTL-12468) 5% Solution Followed by tests for:				RT-790
Tensile Strength	Psi (MPa)	3500 (*24.1*) minimum	3500 (*24.1*) minimum	
Ultimate Elongation	Percent	250 minimum	250 minimum	
Weight Increase	Percent	3 maximum	3 maximum	

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