

**-780**

**CBRN Fluoroelastomer Molded Component**

**Product Facts**

- Hardened to withstand effect of NBC decontamination agents including DS-2 and STB
- Tested in live agent tests with HD, VX and TGD for interior and exterior exposure
- Meets the demands of flammability and fluid resistance of current military ground vehicles
- Offered with compatible tubing, adhesive, wire and other harness components for a survivable system



**Applications**

-780 heat shrinkable molded shapes are made of a chemically resistant fluoroelastomer that is suited for use where moisture, fungus and vehicle fluids and fuels are a concern. Chemical resistance has been tested in accordance with Army TOP 8-2-510 for NBC Contamination Survivability.

**Installation**

Boots shrink with temperatures in excess of 150°C  
 Product is provided with a minimum 2:1 expansion ratio  
 Optimum application range is 10% above recovered ID to 85% of the expanded ID for all openings.

**Operating Temperature Range**

-55°C to 175°C  
 [-67°F to 347°F]

Available in:	Americas	Europe	Asia Pacific
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**Specifications/Approvals**

Military	TE
SC-X15112 TOP-8-2-510	RT-780 type II (Molded Parts)

**Product Characteristics**

**Physical**

PROPERTY	UNIT	RT-780 TYPE I TUBING	RT-780 TYPE II MOLDED PARTS	TEST METHOD
Dimensions	Inches ( <i>mm</i> )	In accordance with Table 1	In accordance with applicable SCD	RT-770
Tensile Strength	Psi ( <i>MPa</i> )	3000 ( <i>20.7</i> ) minimum	3000 ( <i>20.7</i> ) minimum	ASTM D 412
Ultimate Elongation	Percent	300 minimum	300 minimum	ASTM D 412
Secant Modulus (expanded), 2%	Psi ( <i>MPa</i> )	50,000 ( <i>345</i> ) maximum	50,000 ( <i>345</i> ) maximum	ASTM 882
Specific Gravity	--	2.0 maximum	2.0 maximum	ASTM D 792
Low Temperature Flexibility 4 hours at -55±3°C (-67±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 ( <i>MPa</i> )	2000 ( <i>13.8</i> ) minimum	2000 ( <i>13.8</i> ) 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 ( <i>kV/mm</i> )	200 ( <i>7.9</i> ) minimum	200 ( <i>7.9</i> ) minimum	ASTM D 149
Volume Resistivity	Ohm-cm	1 x 10 <sup>11</sup> minimum	1 x 10 <sup>11</sup> 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 ( <i>MPa</i> )	2000 ( <i>13.8</i> ) minimum	2000 ( <i>13.8</i> ) minimum	
Ultimate Elongation	Percent	150 minimum	150 minimum	

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**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 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	--	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	Seconds	--	15 maximum	ASTM D 635-98
Average extent of burning	Inches		1 maximum	
Fluid Resistance 24 hours at 23±3°C (73±5°F) a) JP-8 Jet Fuel (MIL-DTL-83133)				RT-780
Followed by tests for:				
Tensile Strength	Psi (MPa)	2000 (13.8) minimum	2000 (13.8) 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-525571) 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)	2000 (13.8) minimum	2000 (13.8) 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)	2000 (13.8) minimum	2000 (13.8) minimum	
Ultimate Elongation	Percent	250 minimum	250 minimum	
Weight Increase	Percent	3 maximum	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				RT-780
Followed by tests for:				
Tensile Strength	Psi (MPa)	2000 (13.8) minimum	2000 (13.8) minimum	
Ultimate Elongation	Percent	250 minimum	250 minimum	
Weight Increase	Percent	3 maximum	3 maximum	