

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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Revised

SYNTHETIC RUBBER Electrical Resistant, Chloroprene Type (65-75)

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. **FORM:** Sheet, strip, molded shapes, extrusions, or as ordered.
3. **APPLICATION:** Primarily for applications requiring resistance to electrical breakdown and the embrittling action of corona and ozone.
4. **TECHNICAL REQUIREMENTS:**

4.1 General:

- 4.1.1 **Weathering:** When specified, the product shall have weather resistance acceptable to the purchaser as determined by a procedure agreed upon by purchaser and vendor.
- 4.1.2 **Corrosion:** The product shall not have a corrosive or other deleterious effect on other materials when exposed to conditions normally encountered in service. Discoloration of metal shall not be considered objectionable.
- 4.2 **Properties:** The product shall conform to the following requirements; tests shall be performed on the product supplied and in accordance with listed ASTM methods, insofar as practicable:

	<u>Property</u>	<u>Value</u>	<u>Test Method</u>
4.2.1	As Received:		
	Hardness, Durometer "A" or equiv.	70 + 5	
	Tensile Strength, psi, min	1,000	ASTM D412-49T
	Elongation, %, min	400	
	Power Factor (60 cycles per sec), %, max	10	ASTM D150-47T
	Dielectric Strength (short time test - 0.075 in. thick specimen), v per mil, min	300	ASTM D149-44
	Flammability	Shall not support combustion	
4.2.2	Lubricating Oil Resistance:		ASTM D471-49T
	(Immediate Deteriorated Properties)		
	Hardness Change, Durometer "A" or equiv.	0 to -10	
	Tensile Strength Reduction, %, max	20	Medium: ASTM Oil No. 1
	Elongation Reduction, %, max	40	Temperature: 212 F + 2
	Volume Change (Method A), %	0 to +15	Time: 70 hr
	Decomposition	None	
	Surface Tackiness	None	

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	<u>Property</u>	<u>Value</u>	<u>Test Method</u>
4.2.3	<u>Water Resistance:</u> (Immediate Deteriorated Properties)		ASTM D471-49T
	Weight Increase, %, max	5	Medium: Distilled Water
	Dielectric Strength		Temperature: 77 F + 2
	(short time test - 0.075 in. thick specimen), v per mil, min	200	Time: 48 hr
4.2.4	<u>Dry Heat Resistance:</u>		ASTM D573-48
	Hardness Change, Durometer "A" or equiv.	0 to +10	
	Tensile Strength Reduction, %, max	35	Temperature: 212 F + 2
	Elongation Reduction, %, max	50	Time: 70 hr
	Surface Hardening	None	
	Bend (Flat)	No Cracking	
4.2.5	<u>Compression Set:</u>		ASTM D395-49T, Method B
	Per cent of Original		Temperature: 212 F + 2
	Deflection, max	85	Time: 70 hr
	Per cent of Original		Compressed to 75% of
	Thickness, max	21	original thickness
4.2.6	<u>Low Temperature Brittleness:</u>	Pass	ASTM D736-46T
			Temperature: -40 F + 2
			Time: 5 hr
4.2.7	<u>Ozone Resistance:</u> Material shall show no cracking after 30 minutes exposure, at room temperature, to ozone when tested as follows:		
4.2.7.1	Place sufficient mercury in a 500-ml Erlenmeyer flask to form a pool covering the bottom. Place a 1 x 1/2 x 0.075-in. specimen of the rubber in a wooden specimen holder, 1 x 1/2 x 5/16 in. with two grooves each 3/16 in. deep x 3/32 in. wide x 1/2 in. long spaced 1/4 in. between sides of grooves, so that specimen forms a half loop. Place specimens in holders in the flask so that the holders float on the surface of the mercury near side of flask. Stopper the flask with a rubber stopper through which is inserted a brass electrode, approximately 1/4 in. in diameter, cross filed at the lower end to produce 4 points, extending to within 1 in. of the surface of the mercury. Place the flask on a metal plate and connect the plate and the electrode to a source of 15,000 volt, 60 cycle alternating current. Pass this current through the flask.		
5.	<u>QUALITY:</u> The product shall be uniform in quality and condition, clean, smooth, and free from foreign materials and from defects detrimental to fabrication, appearance, or performance of parts.		
6.	<u>TOLERANCES:</u> Unless otherwise specified, the following tolerances apply:		