

AERONAUTICAL MATERIAL SPECIFICATION

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SYNTHETIC RUBBER

Hot Oil and Coolant Resistant (65-75)

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. **FORM:** Sheet, strip, tubing, molded shapes, extrusions, or as ordered.
3. **APPLICATION:** Primarily for packings, bushings, and grommets requiring resistance to hot (300 F) oil and coolant.
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:** Unless otherwise specified, 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.

	Property	Value	Test Method
4.2.1	As Received:		
	Hardness, Durometer "A" or equiv.	70 \pm 5	
	Tensile Strength, psi, min	1000	ASTM D412-49T
	Elongation, %, min	250	ASTM D412-49T
4.2.2	Processing Oil Resistance:		ASTM D471-49T
	(Immediate Deteriorated Properties)		
	Hardness Change, Durometer "A" or equiv.	-20 to +5	Medium: ASTM Oil No. 3
	Elongation Reduction, %, max	70	Temperature: 300 F \pm 2
	Volume Change (Method A), %	0 to +45	Time: 70 hr
	Decomposition	None	
	Surface Tackiness	None	

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Property	Value	Test Method
4.2.3 <u>Lubricating Oil Resistance:</u> (Immediate Deteriorated Properties)		ASTM D471-49T
Hardness Change, Durometer "A" or equiv.	-10 to +10	Medium: ASTM Oil No. 1 Temperature: 300 F \pm 2 Time: 70 hr
Tensile Strength Reduction, %, max (based on area before immersion)	50	
Elongation Reduction, %, max	50	
Volume Change (Method A), %	0 to +10	
Decomposition	None	
Surface Tackiness	None	
4.2.4 <u>Coolant Resistance:</u> (Immediate Deteriorated Properties)		ASTM D471-49T
Hardness Change, Durometer "A" or equiv.	-15 to +15	Medium: Ethylene Glycol 97% Water 3% Temperature: 300 F \pm 2 Time: 70 hr
Tensile Strength Reduction, %, max	25	
Elongation Reduction, %, max	50	
Volume Change (Method A), %	0 to +20	
Decomposition	None	
Surface Tackiness	None	
4.2.5 <u>Dry Heat Resistance:</u>		ASTM D573-48
Hardness Change, Durometer "A" or equiv.	0 to +10	
Tensile Strength Reduction, %, max	25	Temperature: 212 F \pm 2
Elongation Reduction, %, max	40	Time: 70 hr
Bend (flat)	No cracks	
4.2.6 <u>Compression Set:</u>		ASTM D395-49T, Method B
Per cent of Original Deflection, max	50	Temperature: 250 F \pm 2
Per cent of Original Thickness, max	13	Time: 70 hr Compressed to 75 % of original thickness
4.2.7 <u>Low Temperature Brittleness:</u>		ASTM D736-46T
As Received	Pass	Temperature: -40 F \pm 2
After immersion in ASTM Oil No. 1, as in 4.2.3	Pass	Time: 5 hr

5. QUALITY: 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. TOLERANCES: Unless otherwise specified, the following tolerances apply:

6.1 Sheet and Strip:

Nominal Thickness Inch	Tolerance, Inch Plus and Minus
1/8 and under	1/64
Over 1/8 to 1/2, incl	1/32
Over 1/2	3/64