AERONAUTICAL MATERIAL SPECIFICATIONS

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AMS 3332

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Revised

SILICONE RUBBER
Extreme Low Temperature Resistant
(15 - 30)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. FORM: Molded shapes, sheet, or as ordered.

3. APPLICATION: Primarily for rubber-like parts required to operate or seal at temperatures from -100 to +450 F, compounded especially for operation at extreme low temperatures. Silicone rubber is resistant to deterioration by weathering and by high aniline point petroleum base oils, and remains flexible over the temperature range noted. This material is not normally suitable for use in contact with low aniline point petroleum base fluids, including fuels, due to excessive swelling.

4. TECHNICAL REQUIREMENTS:

4.1 General:

4.1.1 Condition: Unless otherwise specified, a suitably cured product shall be furnished.

4.1.2 Weathering: When specified, the product shall have weather resistance acceptable to the purchaser as determined by a procedure agreed upon by purchaser and vendor.

4.1.3 Corrosion: The product shall not have a corrosive 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.

4.2.1 As Received:

4.2.1.1 Hardness, Durometer "A" or equiv.	15 - 30	
4.2.1.2 Tensile Strength, psi, min	400	ASTM D412-51T, Die B or C
4.2.1.3 Elongation, %, min	350	ASTM D412-51T, Die B or C
4.2.1.4 Tear Resistance, lb per in., min	30	ASTM D624-54, Die B

4.2.2	Lubricating Oil Resistance: (Immediate Deteriorated Properties)		ASTM D471-55T Medium: ASTM Oil No. 1 Temperature: 350 F ± 5 Time: 70 hr
4.2.2.1	Hardness Change, Durometer "A" or equiv.	-10 to +5	
4.2.2.2	Tensile Strength Change, %, max (based on area before immersion)	-50	
4.2.2.3	Elongation Change, %, max	-20	
4.2.2.4	Volume Change (Method A), %	0 to +25	
4.2.2.5	Decomposition	None	
4.2.2.6	Surface Tackiness	None	
4.2.3	Dry Heat Resistance:		ASTM D573-53 Temperature: 450 F ± 5 Time: 24 hr
4.2.3.1	Hardness Change, Durometer "A" or equiv.	-5 to +10	
4.2.3.2	Tensile Strength Change, %, max	-15	
4.2.3.3	Elongation Change, %, max	-20	
4.2.3.4	Bend (flat)	No cracking or checking	
4.2.4	Compression Set:		ASTM D395-55, Method B Temperature: 300 F ± 5 Time: 70 hr Compressed to 60% original thickness
4.2.4.1	Per cent of original deflection, max	60	
4.2.4.2	Per cent of original thickness, max	24	
4.2.5	Low Temperature Resistance:		
4.2.5.1	Brittleness	Pass	ASTM D746-55T, Procedure B Temperature: -110 F ± 2
4.2.5.2	Young's Modulus, psi, max (See Note 1)	1000	ASTM D797-46 Temperature: -100 F ± 2

Note 1. This test is not normally required but may be used in case of disagreement on the results of the brittleness test.

5. QUALITY: The product shall be uniform in quality and condition, clean, smooth, and free from chalky spots, foreign materials, and imperfections detrimental to fabrication, appearance, or performance of parts.