AERONAUTICAL
MATERIAL SPECIFICATIONS
SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

AMS 3237A
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SYNTHETIC RUBBER
Phosphate Ester Resistant
Butyl Type (35 - 45)

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, molded shapes, extrusions, or as ordered.

3. APPLICATION: Primarily for parts such as diaphragms, gaskets, grommets, and seals requiring resistance to phosphate esters or low permeability to gases. Not suitable for use in contact with petroleum base fluids due to excessive swell.

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. When the product supplied is an extrusion of such shape that suitable test specimens cannot be cut from the product, a separate flat strip test sample shall be supplied upon request. This strip shall be prepared from a 1 in. + 1/16 OD by 0.075 in. ± 0.008 thick wall tubing which shall be mechanically split and flattened into a strip while being extruded, and then cured in the same manner as production material.

4.2.1 As Received:

4.2.1.1	Hardness, Durometer "A" or equiv.	40 ± 5	
4.2.1.2	Tensile Strength, psi, min	1100	ASTM D412-51T, Die B or C
4.2.1.3	Elongation, %, min	550	ASTM D412-51T, Die B or C
4.2.1.4	Tear Strength, lb per in.	To be Reported	ASTM D624-48, Die B

4.2.2	Phosphate Ester Resistance: (Immediate Deteriorated Properties)		ASTM D471-55T Medium: Tri-n-butyl phosphate Temperature: 212 F ± 2 Time: 70 hr
4.2.2.1 Ø	Hardness Change, Durometer "A" or equiv.	0 to -20	
4.2.2.2 Ø	Tensile Strength Change, %, max (based on area before immersion)	-40	
4.2.2.3	Elongation Change, %, max	-20	
4.2.2.4	Volume Change (Method A), %	0 to +35	
4.2.3	Dry Heat Resistance:		ASTM D573-53 Temperature: 212 F ± 2 Time: 70 hr
4.2.3.1	Hardness Change, Durometer "A" or equiv.	0 to +15	
4.2.3.2	Tensile Strength Change, %, max	-25	
4.2.3.3	Elongation Change, %, max	-50	
4.2.4	Compression Set:		ASTM D395-55, Method B Temperature: 212 F ± 2 Time: 70 hr Compressed to 60% original thickness
4.2.4.1	Per cent of original deflection, max	85	
4.2.4.2	Per cent of original thickness, max	34	
4.2.5	Low Temperature Resistance:		
Ø 4.2.5.1	Brittleness	Pass	ASTM D746-55T, Procedure B Temperature: -40 F ± 2 Time: 10 min.
4.2.5.2	Young's Modulus, psi, max (See Note 1)	10,000	ASTM D797-46 Temperature: -40 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 foreign materials and from imperfections detrimental to fabrication appearance, or performance of parts.

6. TOLERANCES: Unless otherwise specified, the following tolerances apply:

6.1 Sheet and Strip:

Nominal Thickness Inches	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