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

AMS 3215G

Issued 12-1-42
Revised 8-15-58

SYNTHETIC RUBBER
Aromatic Fuel 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, molded shapes, extrusions, or as ordered.

3. APPLICATION: Primarily for gaskets, diaphragms, bushings, grommets, and sleeves requiring resistance to aromatic and non-aromatic fuels when continously or alternately exposed to both.

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 Ø 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 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.	70 ± 5	
4.2.1.2	Tensile Strength, psi, min	1500	ASTM D412-51T, Die B or C
4.2.1.3	Elongation, %, min	250	ASTM D412-51T, Die B or C
4.2.1.4 Ø	Tensile Stress at 100% Elongation psi, max (See Note 1)	1000	ASTM D412-51T, Die B or C

Ø 4.2.1.5 Tear Strength, lb per in., min	See Note 2	ASTM D624-54, Die B
Ø 4.2.1.6 Specific Gravity	See Note 3	ASTM D297-55T
4.2.2 Non-Aromatic Fuel Resistance: (After 24 hr drying at 158 F ± 2)		ASTM D471-57T Medium: ASTM Ref. Fuel A Temperature: 70 - 85 F
4.2.2.1 Volume Change (Method A), %, max	-5	Time: 24 hr
4.2.3 Aromatic Fuel Resistance: (Immediate Deteriorated Properties)		ASTM D471-57T Medium: ASTM Ref. Fuel B Temperature: 70 - 85 F
4.2.3.1 Hardness Change, Durometer "A" or equiv.	-20 to 0	Time: 168 hr
4.2.3.2 Tensile Strength Change, %, max (based on area before immersion)		
4.2.3.2.1 For parts other than extrusions	-50	
Ø 4.2.3.2.2 For extruded parts	-60	
4.2.3.3 Elongation Change, %, max	-45	
4.2.3.4 Volume Change (Method A) in 24 hr, %	0 to +35	
4.2.3.5 Volume Change (Method A) in 168 hr, % (calculated on basis of unimmersed volume)	0 to +35	
4.2.3.6 Volume Change on Drying (after Ø 168 hr aromatic fuel immersion) at 158 F ± 2 for 24 hr, %, max (based on unimmersed volume)	-10	
4.2.4 Dry Heat Resistance:		ASTM D573-53 Temperature: 212 F ± 2 Time: 70 hr
4.2.4.1 Hardness, Change, Durometer "A" or equiv.	0 to +10	
4.2.4.2 Tensile Strength Change, %, max	-20	
4.2.4.3 Elongation Change, %, max	-40	
4.2.4.4 Bend (flat)	No cracking or checking	
Ø 4.2.5 Compression Set:		ASTM D395-55, Method B Temperature: 212 F ± 2 Time: 70 hr
4.2.5.1 Per cent of original deflection, max		Compressed to 75% of original thickness
4.2.5.1.1 For parts other than extrusions	75	
Ø 4.2.5.1.2 For extruded parts	80	

4.2.5.2 Per cent of original thickness, max

4.2.5.2.1 For parts other than extrusions 19

Ø 4.2.5.2.2 For extruded parts 20

4.2.6 Low Temperature Resistance:

4.2.6.1 Ø	Brittleness	All Pass	ASTM D746-57T Temperature: -10 F ± 2 Time: 10 min
4.2.6.2 Ø	Young's Modulus, psi, max (See Note 4)	30,000	ASTM D797-46 Temperature: -10 F ± 2 Time: 5 hr

Ø Note 1. Specimen to be prestretched twice to 125% elongation within 5 minutes of test.

Ø Note 2. Value to be reported.

Note 3. Ø Value to be reported. Production material to be within ± 0.02 of the value agreed upon by purchaser and vendor.

Note 4. Ø This test is not normally required, but shall be used as a referee test 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

6.2 Tubing:

6.2.1

Nominal OD or ID (not both), Inches	Tolerance Plus and Minus	Ovality, % (See Note 5)
1/2 and under	0.020 in.	10
Over 1/2 to 1, incl	0.030 in.	15
Over 1	4%	15

Note 5. Ovality applies to tubing ordered in straight lengths with wall thickness of 1/16 in. and over, and shall be computed from the difference of the minor and major axis diameter measurements, taken at the same location on the tube, expressed as a percentage of the nominal diameter.