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AEROSPACE MATERIAL SPECIFICATIONS

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

AMS 3229D

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SYNTHETIC RUBBER Hot Oil Resistant, Low Swell 75 - 85

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 oils.
4. **TECHNICAL REQUIREMENTS:**
 - 4.1 **General:**
 - 4.1.1 **Condition:** Unless otherwise specified, a suitably cured product shall be supplied.
 - 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 the issue of specified ASTM methods listed in the latest issue of AMS 2350, 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 1 in. $\pm$ 1/16 OD by 0.075 in $\pm$ 0.008 thick wall tubing which shall be mechanically slit and flattened into a strip while being extruded and then cured in the same manner as production material.
 - 4.2.1 **As Received:**

Ø 4.2.1.1 Hardness, Durometer "A" or equiv.	80 $\pm$ 5	ASTM D676
4.2.1.2 Tensile Strength, psi, min	1000	ASTM D412, Die B or C
4.2.1.3 Elongation, %, min	150	ASTM D412, Die B or C
4.2.2 Processing Oil Resistance:		ASTM D471
Ø (Immediate Deteriorated Properties)		Medium: ASTM Oil No. 3
4.2.2.1 Hardness, Change, Durometer "A" or equiv.	-20 to +5	Temperature: 150 C $\pm$ 3 (302 F $\pm$ 5.4)
		Time: 70 hr
4.2.2.2 Volume Change, %	0 to +45	
4.2.2.3 Decomposition	None	
4.2.2.4 Surface Tackiness	None	

4.2.3 Lubricating Oil Resistance:

Ø (Immediate Deteriorated Properties)

ASTM D471

Medium: ASTM Oil No. 1

Temperature: $150\text{ C} \pm 3$
($302\text{ F} \pm 5.4$)

Time: 70 hr

4.2.3.1 Hardness Change, Durometer "A" or equiv. -5 to +10

4.2.3.2 Volume Change, % 0 to +10

4.2.3.3 Decomposition None

4.2.3.4 Surface Tackiness None

4.2.3.5 Bend (90 deg over radius
5 times specimen thickness) No cracking
or checkingØ 4.2.4 Compression Set:

ASTM D395, Method B

Temperature: $125\text{ C} \pm 2$
($257\text{ F} \pm 3.6$)

Time: 70 hr

4.2.4.1 Per cent of Original Deflection, max 50

4.2.4.2 Per cent of Original Thickness, max 13

4.2.5 Low Temperature Brittleness:

Pass

ASTM D736 (See Note 1)

Temperature: $-40\text{ C} \pm 1$
($-40\text{ F} \pm 1.8$)

Time: 5 hr

Note 1. To be used only until satisfactory replacement test and values are established.

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
Up to 1/8, incl	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 2)
Ø	Up to 1/2, incl	0.020 in.	10
	Over 1/2 to 1, incl	0.030 in.	15
	Over 1	4%	15

Note 2. 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 transverse plane on the tube, expressed as a percentage of the nominal diameter.