



AEROSPACE MATERIAL SPECIFICATION	AMS3197™	REV. N
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Sponge, Chloroprene (CR) Rubber Soft		

RATIONALE

This document has been determined to contain basic and stable technology which is not dynamic in nature.

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1. SCOPE

1.1 Form

This specification covers a chloroprene (CR) rubber sponge in the form of sheet, strip, molded shapes, or other forms, as ordered.

1.2 Application

These products have been used typically for general applications requiring the use of open-cell, soft rubber sponge pads and seals operating from -40 to +176 °F (-40 to +80 °C), but usage is not limited to such applications.

1.3 Safety - Hazardous Materials

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AMS2810 Identification and Packaging Elastomeric Products

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2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM D1056 Flexible Cellular Materials Sponge or Expanded Rubber

3. TECHNICAL REQUIREMENTS

3.1 Material

Shall be a compound, based on a chloroprene (CR) elastomer with agents to form an open-cell sponge, suitably cured to produce a product meeting the technical requirements of this specification.

3.1.1 Color

Shall be black.

3.1.2 Finish

The top and bottom surfaces of sheet and strip and the exterior surfaces of molded parts shall have a natural skin finish. Fabric or wire mesh type of surface impressions are not objectionable.

3.1.3 Vulcanized Joints

Vulcanized joints are permissible in molded products where the finished product is larger than is usual industry practice to mold in one section. If a vulcanized joint is necessary, the joint shall have the same strength, size, and color as the parent material.

3.2 Properties

Sponge shall conform to the following requirements; tests shall be performed on the sponge supplied and in accordance with ASTM D1056 except as otherwise specified herein.

3.2.1 Compression Deflection

Shall be 1 to 4 psi (6.9 to 27.6 kPa) at 68 to 86 °F (20 to 30 °C).

3.2.2 Specific Volume

Shall be as shown in Table 1 for each nominal thickness; a tolerance of $\pm 10\%$ will be allowed.

3.2.3 Hydrogen Ion Concentration (pH)

Shall be 7.0 ± 1.0 , determined in accordance with 4.5.1.

3.2.4 Dry Heat Resistance

Shall be as follows, determined in accordance with 4.5.2.

Table 1 - Specific volume

Nominal Thickness Inches	Nominal Thickness Millimeters	Specific Volume Cubic Inches per Pound	Specific Volume Cubic Centimeters per Gram
1/32	0.8	26	0.92
1/16	1.6	36	1.30
3/32	2.4	42	1.52
1/8	3.2	48	1.73
3/16	4.8	55	1.99
1/4	6.4	58	2.10
5/16	7.9	61	2.20
3/8	9.5	63	2.28
1/2	12.7	66	2.38
5/8	15.9	70	2.53
3/4	19.0	73	2.64
7/8	22.2	77	2.78
1	25.4	80	2.89
1-1/2	38.1	87	3.14

3.2.4.1 Compression Deflection Change

-5 to +30%.

3.2.4.2 Specific Volume Change

-10 to +10%.

3.2.4.3 Bend (Flat)

No cracking or checking.

3.2.5 Compression Set

Shall be as follows, determined at 158 °F ± 2 °F (70 °C ± 1 °C) for 22 hours ± 0.2 hour.

3.2.5.1 Percent of Original Deflection

Not higher than 40.

3.2.5.2 Percent of Original Thickness

Not higher than 20.

3.2.6 Low-Temperature Flexibility

When specified, the product shall have low-temperature flexibility acceptable to purchaser, determined by a procedure agreed upon by purchaser and vendor.

3.2.7 Weather Resistance

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

3.3 Quality

The product, as received by purchaser, shall be uniform in quality and condition, smooth, as free from foreign materials as commercially practicable, and free from imperfections detrimental to usage of the product.

3.4 Dimensions and Tolerances

Dimensions and tolerances shall be as specified in the parts standard, drawing or purchase document. If not specified, shall conform to the following values; measurements shall be made in accordance with ASTM D1056.

3.4.1 Sheet and Strip

3.4.1.1 Thickness

Shall be specified in Table 2:

Table 2

Table 2A - Thickness tolerance, inch/pound units

Nominal Thickness Inch	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

Table 2B - Thickness tolerance, SI units

Nominal Thickness Millimeters	Tolerance, Millimeters Plus and Minus
Up to 3.2, incl	0.4
Over 3.2 to 12.7, incl	0.8
Over 12.7	1.2

3.4.1.2 Width

Shall be specified in Table 3:

Table 3

Table 3A - Width tolerance, inch/pound units

Nominal Width Inches	Tolerance, Inch Plus and Minus
Up to 6, incl	1/16
Over 6 to 18, incl	1/8
Over 18	1/4

Table 3B - Width tolerance, SI units

Nominal Width Millimeters	Tolerance, Millimeters Plus and Minus
Up to 152, incl	1.6
Over 152 to 457, incl	3.2
Over 457	6.4

3.5 Toxicological Formulations

The material shall have no adverse effects on the health of personnel when used for its intended purpose in accordance with manufacturer's instructions and with appropriate handling procedures.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for Inspection

The supplier of the product shall be responsible for performance of all required tests. Purchaser reserves the right to sample and perform any testing deemed necessary to ensure that the product conforms to the AMS requirements.

4.2 Classification of Tests

All technical requirements are acceptance tests and preproduction tests and shall be performed prior to or on the initial shipment of sponge to a purchaser, on each lot, when a change in ingredients and/or processing requires reapproval as in 4.4.2, and when purchaser deems confirmatory testing to be required.

4.3 Sampling and Testing

Shall be as follows:

4.3.1 For Acceptance Tests

Sufficient sponge shall be taken at random from each lot to perform all required tests. The number of determinations for each requirement shall be as specified in the applicable test procedure or, if not specified therein, not less than three.

4.3.1.1 A batch shall be all material run through a mixer at one time.

4.3.1.2 A lot shall be not more than 2500 pounds (1134 kg) of sponge from one batch.

4.3.1.3 When a statistical sampling plan has been agreed upon by purchaser and vendor, sampling shall be in accordance with such plan in lieu of sampling as in 4.3.1 and the report of 4.6 shall state that such plan was used.

4.3.2 For Preproduction Tests

As agreed upon by purchaser and vendor.

4.4 Approval

4.4.1 If required by the purchaser, sponge shall be approved by purchaser before sponge for production use is supplied, unless such approval be waived by purchaser. Results of tests on production sponge shall be essentially equivalent to those on the approved sample.

4.4.2 Vendor shall use ingredients, manufacturing procedures, processes, and methods of inspection on production sponge which are essentially the same as those used on the approved sample. If necessary to make any change in ingredients, in type of equipment for processing, or in manufacturing procedures, vendor shall submit for reapproval a statement of the proposed changes in ingredients and/or processing and, when requested, sample sponge. Production sponge made by the revised procedure shall not be shipped prior to receipt of reapproval.