

**GPS 78**

**REVISION A**

**25 October 2011**

**RUBBER, FLUROSILICONE/SILICONE ELASTOMER 70/30 BLEND FOR MOLDED PARTS,  
OIL AND FUEL RESISTANT FOR AERONAUTICAL AND AEROSPACE APPLICATIONS**

**This specification is approved for use in all of Glenair, Inc. departments and is restricted in distribution without an NDA in place between Glenair, Inc. and the other party.**

**1. SCOPE:**

1.1 This specification covers rubber blend of Fluorosilicone at 70% (FVMQ) and Silicone at 30% (VMQ) which are used for molding of the components used in electrical military connectors supplied by Glenair, Inc. which are used in Operational Temperature range of -60C to 210C. Color of this compound shall be BLUE per FED-STD-595/15180.

**2. APPLICABLE DOCUMENTS:**

DEPARTMENT OF DEFENSE MATERIAL SPECIFICATIONS:

MIL-DTL-25988 - RUBBER, FLUROSILICONE ELASTOMER

A-A-59588 - RUBBER, SILICONE

**3. REQUIREMENTS:**

3.1 Elastomers used in this blend shall exhibit following criteria when in pure state (before, but ready for blending):

Silicone: Silicone used in this blend shall meet all of the requirements per A-A- 59588, Class 2A. Grade per table I, 40, 50 or 70.

Fluorosilicone: Fluorosilicone used in this blend shall meet all of the requirements per MIL-DTL-25988, Type II, Class 1. Grade per table I, 40, 50 or 70.

- 3.2 Elastomers, when blended, shall meet the following criteria:  
 70/30 Fluorosilicone/Silicone Blend (for further use in this paragraph will be used as the Blend) shall maintain the percent volumetric ratio at all times.  
 The Blend shall exhibit following physical properties when tested per ASTM:

TABLE I

PROPERTY	GRADE 40	GRADE 50	GRADE 70
Tensile Strength, psi, min	700	700	650
Elongation, %, min	225	200	150
Tear strength, ppi, min	40	40	75
Specific gravity, g/cm <sup>3</sup>	1.29 +/- .03	1.34 +/- .03	1.36 +/- .03
Compression set, %, max*	15	15	15
Water absorption, %, max	2.5	2.5	2.5
Hardness, points, Shore A	40 +/- 5	50 +/- 5	70 +/- 5

\* After air aging for 70 hrs. at 75+/-5 F.

The Blend shall exhibit following chemical resistance (after molding):

No swelling, cracking, pitting or any other signs of visual degradation as well as loss of hardness (shore decrease) and reduction in electrical properties will be allowed when this Blend is subjected to the following chemicals:

Fluids and the test parameters are consistent to EIA-364-10 specification.

Hydraulic fluid per	MIL-H-5606
Turbine fluid, grade JP8 per	MIL-DTL-83133
Lubricating oil per	MIL-L-7808
Lubricating oil per	MIL-PRF-23699
Defrosting fluid per	SAE-AMS-1424
Cleaning solution per	MIL-PRF-87937, type I
Gasoline per	ASTM-D-4814
Gasohol per	A-A-52530
Isopropyl alcohol per	TT-I-735 grade A or B
Mineral spirits per	A-A-2904, type II, grade A
Coolant, synthetic silicate per	MIL-PRF-47220

**4. VERIFICATION:**

- 4.1 Lot shall consist of all materials of the same identity, blended at the same time, from the same production run. Lot shall be supplied to Glenair, Inc. accompanied with the physical properties certificate per delivery batch. Certificate to be issued to this specification name GPS 78, and it may cross reference any of the manufacturers' compound names that adhere to the guidelines of this document.
  
- 4.2 Glenair, Inc. reserves the right to test to any or all of these claims at any time, and mandates a supplier to notify Glenair, Inc. of any pending changes to the material listed within this specification including but not limited to the future availability.

**SUGGESTED SOURCE OF SUPPLY:**

Momentive Performance Materials Inc.  
4045 Cheyenne Court  
Chino, CA 91710

Grade 40 to Momentive compound name 23590-BLU  
Grade 50 to Momentive compound name 23598-BLU  
Grade 70 to Momentive compound name 23599-BLU

REVISION	DATE	APPROVED ENGINEERING	APPROVED QUALITY
A	10/25/11	Greg Brown	Lorrie Duke