

Parco

# 1933-70 Fluorosilicone Seals

## Want the best M25988/1 O-rings?

### 1933-70 Meets Your Needs

#### 1. Exceeds the MIL-DTL-25988 Type 1, Class 1, Grade 70 Specification

Seals made from Parco's 70-durometer fluorosilicone compound 1933-70 greatly exceed the tensile strength, elongation, and low temperature requirements of MIL-DTL-25988 (see test report on reverse side). Parco supplies seals to 28 military and aerospace specifications, and we supply Qualified Products List (QPL) rubber seals. Our quality system is certified to ISO 9001, ISO/TS 16949, AC7115, and AS9100. So when you specify 1933-70, rest assured that you've made the right choice.

#### 2. Excellent Performance at Low Temperatures

Our 1933-70 seals can be used in static applications with continuous service temperatures as low as -90°F. The excellent low-temperature properties of 1933-70 seals enable them to resist cracking in low-temperature applications (see Figure 1).

#### 3. Outstanding Resistance to Compression Set

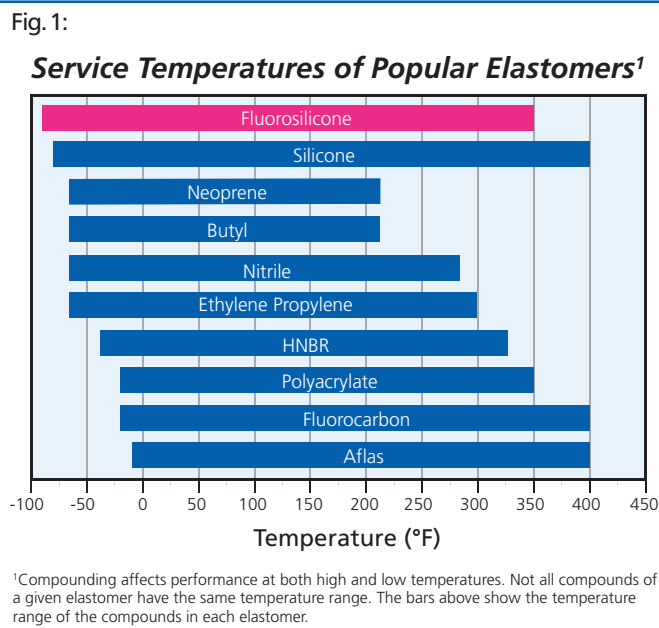
To perform properly, most seals must resist taking a set from compression after being installed. When a seal takes a set, it no longer exerts force on the mating surfaces, resulting in leakage. A compound with low compression set, like 1933-70,

better maintains its elastomeric properties and original thickness, preserving seal integrity. After testing 1933-70 for 22 hours at 347°F, it had compression set of only nine percent.

### Applications

Parco's 70-durometer fluorosilicone compound 1933-70 is ideal for aircraft and automotive fuel seals. 1933-70 resists common aircraft fuels, oils, and lubricants (see chemical resistance chart on reverse side). 1933-70 was specifically tested in jet fuel and di-ester polyols. Seals made from 1933-70 are recommended for static applications and should not be used in high pressure dynamic applications.

**Order as: Parco 1933-70 size AS568-XXX**  
(reference Parco O-ring Size Chart for AS568 sizes)



## Key Features

- **Exceeds military and aerospace requirements:**  
Parco 1933-70 seals exceed the requirements of the MIL-DTL-25988 Type 1, Class 1, Grade 70 specification.
- **Excellent performance at low temperatures:**  
Parco 1933-70 seals can be used in static applications with continuous service temperatures as low as -90°F.
- **Outstanding resistance to compression set:**  
Parco 1933-70 seals have a compression set of only 9 percent after 22 hours at 347°F.
- **Wide range of service temperatures:**  
Parco 1933-70 seals are suitable for applications ranging from -90 to +350°F.
- **Color:**  
Parco 1933-70 seals are blue.

## Chemical Resistance

USE WITH	DO NOT USE WITH
Automatic Transmission Fluid Gasoline Military Aircraft Hydraulic Fluid Silicone Oil Toluene	Acetone Ethyl Acetate

## Typical Values for Compound 1933-70

### 70-durometer fluorosilicone for MIL-DTL-25988 Type 1, Class 1, Grade 70

Section of Spec.	Physical Property	Requirement <sup>1</sup>	Typical Value	ASTM <sup>2</sup> Test Method
	<b>Original Properties</b>			
Z1	Hardness, Shore A	70 ± 5	74	D2240
	Tensile strength, MPa (psi), min.	6(870)	7(1010)	D412
	Ultimate elongation, pct., min.	150	168	D412
Z2	Modulus at 100 pct., elongation, psi, min.	Report	680	D412
Z3	Specific gravity	Report	1.58	D297
Basic	<b>Compression Set</b> 22 hours at 175°C (347°F) Pct. of original deflection, max.	50	9	D395 Method B
A19	<b>Heat Aging</b> 70 hours at 225°C (437°F) Hardness change, pts., Shore A, max. Tensile strength change, pct., max. Ultimate elongation change, pct., max.	15 -45 -45	0 -37 -15	D573
EF31	<b>Fluid Aging, ASTM Reference Fuel C</b> 70 hours at 23°C (73°F) Hardness change, pts., Shore A Tensile strength change, pct., max. Ultimate elongation change, pct., max. Volume change, pct.	-15 to 0 -60 -50 0 to 25	-12 -19 -21 22	D471
EO36	<b>Fluid Aging, IRM<sup>3</sup> 903 Oil</b> 70 hours at 150°C (302°F) Hardness change, pts., Shore A Tensile strength change, pct., max. Ultimate elongation change, pct., max. Volume change, pct.	-10 to 0 -35 -30 0 to 10	-5 -12 -2 4	D471
Z4	<b>Low Temperature Properties</b> TR-10 °C (°F)	Report	-61(-77)	D1329

<sup>1</sup>Compound 1933-70 meets the requirements shown above for ASTM D2000 M2FK606 A19 EF31 EO36 Z1 Z2 Z3 Z4. Compound 1933-70 also meets the requirements for Aerospace Material Specification MIL-DTL-25988 Type 1, Class 1, Grade 70, *Rubber, Fluorosilicone Elastomer, Oil and Fuel-Resistant, Sheets, Strips, Molded Parts, and Extruded Shapes*. The properties reported are typical for compound 1933-70 but do not reflect the requirements of MIL-DTL-25988 Type 1, Class 1, Grade 70. <sup>2</sup>ASTM is the initialism for the American Society for Testing and Materials. <sup>3</sup>IRM is the initialism for Industry Reference Material.

Source: Parco Test Report 9318.

⚠ This brochure is intended as a guideline and reference. Appropriate testing and validation by users having technical expertise is necessary for proper use of Parco products.

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Parco, Inc., 1801 S. Archibald Ave., Ontario, California 91761  
909-947-2200 Fax 909-923-0288 [parcoinc.com](http://parcoinc.com)