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## O-Ring Compound N70 Data Sheet

Material: Butadiene Acrylonitrile Copolymer  
70 Durometer, Black

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### **General Information:**

Nitrile, Buna, or NBR is one of the most common sealing elastomers due to its resistance to petroleum-based fuels and lubricants. Nitrile elastomers are copolymers of acrylonitrile and butadiene.

### **Cure System:**

Sulfur-cured compounds show better low-temperature properties, however are more prone to hardening with high temperatures.

**Temperature Range:** -40°C (-40°F) to 100°C (212°F)

### **Attributes:**

- Color: Black
- 70±5 Shore A durometer
- Shelf-life: 15 years

### **Performs Well In:**

- Petroleum based oils and fuels
- Aliphatic hydrocarbons
- Vegetable oils
- Silicone oils and greases
- Ethylene glycol
- Dilute acids
- Water to below 100°C (212°F)

### **Doesn't Perform Well In:**

- Aromatic hydrocarbons
- Automotive brake fluid
- Chlorinated hydrocarbons
- Ketones
- Ethers
- Esters
- Phosphate ester hydraulic fluids
- Strong acids
- Ozone/weathering/sunlight

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## TEST REPORT FOR COMPOUND N70

MATERIAL: BUTADIENE ACRYLONITRILE COPOLYMER

DUROMETER: 70

COLOR: BLACK

ASTM\* D2000 M2BG714 A14 B14 EA14 EF11 EF21 EO14 EO34 Z1

| SECTION OF SPEC. | PROPERTIES                            | REQUIREMENTS | RESULTS     | ASTM TEST METHOD |
|------------------|---------------------------------------|--------------|-------------|------------------|
|                  | <b>ORIGINAL PHYSICAL PROPERTIES</b>   |              |             |                  |
|                  | Hardness, Shore A                     | 70±5         | 70.5        | D2240-05         |
|                  | Tensile Strength, psi (MPa)           | 2031 (min)   | 2206 (15.2) | D412-06a         |
|                  | Elongation, min, percent              | 250 (min)    | 326         | D412-06a         |
|                  | Modulus @ 100%, psi (Mpa)             |              | 530 (3.66)  | D412-06a         |
|                  | Specific Gravity (g/cm <sup>3</sup> ) |              | 1.23        |                  |
| A14              | <b>HEAT AGE</b>                       |              |             | D573-04          |
|                  | <b>70 hours at 100°C (212°F)</b>      |              |             |                  |
|                  | Hardness Change, points               | ±15          | +4          |                  |
|                  | Tensile Strength Change, percent      | -20(max)     | +9          |                  |
|                  | Elongation Change, percent            | -40(max)     | -13.0       |                  |
|                  | Weight Change, percent                |              | -1          |                  |
| B14              | <b>COMPRESSION SET, METHOD B</b>      |              |             | D395-03B         |
|                  | 22 hours at 100°C (212°F), percent    | 25 (max)     | 7           |                  |
| EA14             | <b>WATER RESISTANCE</b>               |              |             | D471-06          |
|                  | <b>70 hours at 100°C (212°F)</b>      |              |             |                  |
|                  | Hardness Change, points               | ±10          | +1          |                  |
|                  | Tensile Change, max, percent          |              | +1          |                  |
|                  | Elongation Change, max, percent       |              | -11         |                  |
|                  | Volume Change, percent                | ±15          | +0.1        |                  |
| EF11             | <b>FUEL A RESISTANCE</b>              |              |             | D471-06          |
|                  | <b>70 hours at 23°C (73.4°F)</b>      |              |             |                  |
|                  | Hardness Change, points               | ±10          | -1          |                  |
|                  | Tensile Change, max, percent          | -25(max)     | -3          |                  |
|                  | Elongation Change, max, percent       | -25(max)     | -6          |                  |
|                  | Volume Change, percent                | -5 to +10    | +0.3        |                  |
| EF21             | <b>FUEL B RESISTANCE</b>              |              |             | D471-06          |
|                  | <b>70 hours at 23°C (73.4°F)</b>      |              |             |                  |
|                  | Hardness Change, points               | 0 to -30     | -12         |                  |
|                  | Tensile Change, max, percent          | -60(max)     | -31         |                  |
|                  | Elongation Change, max, percent       | -60(max)     | -29         |                  |
|                  | Volume Change, percent                | 0 to +40     | 18.9        |                  |
| EO14             | <b>IRM 901 OIL</b>                    |              |             | D471-06          |
|                  | <b>70 hours at 100°C (212°F)</b>      |              |             |                  |
|                  | Hardness Change, points               | -5 to +10    | +7          |                  |
|                  | Tensile Change, max, percent          | -25(max)     | +5          |                  |
|                  | Elongation Change, max, percent       | -45(max)     | -21         |                  |
|                  | Volume Change, percent                | -10 to +5    | -9.8        |                  |
| EO34             | <b>IRM 903 OIL</b>                    |              |             | D471-06          |
|                  | <b>70 hours at 100°C (212°F)</b>      |              |             |                  |
|                  | Hardness Change, points               | -10 to +5    | +1          |                  |
|                  | Tensile Change, max, percent          | -45(max)     | +5          |                  |
|                  | Elongation Change, max, percent       | -45(max)     | -15         |                  |
|                  |                                       |              |             |                  |

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