

## **VMQ / PMQ / PVMQ - Silicone or Polydimethylsiloxane Rubber**

**Hardness Range** 20 to 90 Durometer Shore A

**Temperature Range** - 50° C to + 210° C

**Advantages** in performance...

- for adhesion to metal & rigid materials, compression set, and resilience & rebound.
- in concentrated alkalis, animal & vegetable oils, and refrigerant ammonia.
- for coloring capability, flame resistance, ozone resistance, oxidation resistance, sunlight resistance, taste retention, weather resistance, and water resistance.

**Limitations** in performance...

- for abrasion resistance, flex cracking resistance, impact resistance, and tear resistance.
- in concentrated acids, dilute alkalis, concentrated alkalis, diester oils, ethers, aliphatic hydrocarbon fuels, aromatic hydrocarbon fuels, extended or oxygenated fuels, halogenated solvents, halogenated hydrocarbons, ketones, lacquer solvents, mineral oils, refrigerant halofluorocarbons with & without oils, and silicone oils.
- for gas permeability and radiation resistance.

## ***Rubber Material Selection Guide VMQ, PMQ, or PVMQ Silicone Rubber***

- Abbreviation VMQ, PMQ, PVMQ
- ASTM D-2000 Classification FC, FE, GE
- Chemical Definition Polydimethylsiloxane

### **◆ Physical & Mechanical Properties**

• Durometer or Hardness Range	20 – 90 Shore A
• Tensile Strength Range	200 – 1,500 PSI
• Elongation (Range %)	100 % – 900 %
• Abrasion Resistance	Poor to Good
• Adhesion to Metal	Good
• Adhesion to Rigid Materials	Good
• Compression Set	Good to Excellent
• Flex Cracking Resistance	Poor to Good
• Impact Resistance	Poor to Good
• Resilience / Rebound	Good to Excellent
• Tear Resistance	Poor to Good
• Vibration Dampening	Fair to Good

**◆ Chemical Resistance**

- |                                 |              |
|---------------------------------|--------------|
| • Acids, Dilute                 | Fair to Good |
| • Acids, Concentrated           | Poor to Fair |
| • Acids, Organic (Dilute)       | Good         |
| • Acids, Organic (Concentrated) | Fair         |
| • Acids, Inorganic              | Fair to Good |

***.Rubber Material Selection Guide VMQ, PMQ, or PVMQ Silicone Rubber*****◆ Chemical Resistance**

- |  |                   |
|--|-------------------|
| • Alcohol's                            | Fair to Good      |
| • Aldehydes                            | Good              |
| • Alkalies, Dilute                     | Poor to Good      |
| • Alkalies, Concentrated               | Poor to Excellent |
| • Amines                               | Good              |
| • Animal & Vegetable Oils              | Good to Excellent |
| • Brake Fluids, Non-Petroleum Based    | Good              |
| • Diester Oils                         | Poor to Fair      |
| • Esters, Alkyl Phosphate              | Good              |
| • Esters, Aryl Phosphate               | Good              |
| • Ethers                               | Poor              |
| • Fuel, Aliphatic Hydrocarbon          | Poor to Fair      |
| • Fuel, Aromatic Hydrocarbon           | Poor              |
| • Fuel, Extended (Oxygenated)          | Poor              |
| • Halogenated Solvents                 | Poor              |
| • Hydrocarbon, Halogenated             | Poor              |
| • Ketones                              | Poor              |
| • Lacquer Solvents                     | Poor              |
| • LP Gases & Fuel Oils                 | Fair              |
| • Mineral Oils                         | Poor              |
| • Oil Resistance                       | Fair              |
| • Petroleum Aromatic                   | Fair              |
| • Petroleum Non-Aromatic               | Good              |
| • Refrigerant Ammonia                  | Excellent         |
| • Refrigerant Halofluorocarbons        | Poor              |
| • Refrigerant Halofluorocarbons w/ Oil | Poor              |
| • Silicone Oil                         | Poor              |
| • Solvent Resistance                   | Poor              |

## **Rubber Material Selection Guide VMQ, PMQ, or PVMQ Silicone Rubber**

### ◆ **Environmental Performance**

• Colorability	Excellent
• Flame Resistance	Fair to Excellent
• Gas Permeability	Poor to Fair
• Odor	Good
• Ozone Resistance	Excellent
• Oxidation Resistance	Excellent
• Radiation Resistance	Poor to Good
• Steam Resistance	Fair to Good
• Sunlight Resistance	Excellent
• Taste Retention	Good to Excellent
• Weather Resistance	Excellent
• Water Resistance	Excellent

For assistance in identifying the appropriate polymer or material, or to develop and formulate a silicone rubber compound to meet your specific application and performance requirements, please contact ILGA S.R.L at e-mail: [ilga@ilgagomma.com](mailto:ilga@ilgagomma.com) or phone: +39 0456336521 / 0456336514.

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