

Silicone (VMQ)

ASTM D1418 & ISO 1629 Designation: **Q, MQ, PMQ, VMQ, PVMQ**

ASTM D2000, SAE J200 Type/Class: **FC, FE, GE**

Mil-R-3065 (Mil-Std 417) Class: **TA**



Advantages: Excellent Heat and low temperature properties. Low compression set and good resilience. Moderate solvent resistance. Good release Characteristics. Silicone performs well in engine & transmission oils, mineral oils, ozone, and dry heat.

Limitations: Poor dynamic use due to high friction characteristic, low abrasion resistance, poor tear & tensile strength. Very gas permeable. Silicone performs poorly in petroleum oils and fuels, Ketones, steam and concentrated acids.

Physical & Mechanical Properties

Durometer or Hardness Range: 10-85 Shore A
Tensile Strength Range: 500 - 1,500 PSI
Elongation (Range%): 450% - 900%
Abrasion Resistance: Good
Adhesion to Metal: Fair
Adhesion to Rigid Materials: Fair
Compression Set: Excellent
Flex Cracking Resistance: Very Good
Impact Resistance: Good to Excellent
Resilience/Rebound: Good
Tear Resistance: Good
Vibration Dampening: Fair

Thermal Properties

General Temperature Range -75°F to 500°F
Min. for continuous Use (Static): -60°F
Brittle Point: -120°F
Max. for Continuous Use (Static): 400°F

Environmental Performance

Colorability: Excellent
Flame Resistance: Good to Excellent
Gas Permeability: Poor
Odor: Good
Ozone Resistance: Excellent
Oxidation Resistance: Excellent
Radiation Resistance: Good
Steam Resistance: Good
Sunlight Resistance: Very Good
Weather Resistance: Excellent
Water Resistance: Very Good

Chemical Resistance

Acids, Dilute: Fair
Acids, Concentrated: Poor
Acids, Organic (Dilute): ---
Acids, Organic (Concentrated): Poor
Alcohols: Good
Aldehydes: Very Good
Alkalies, Dilute: Very Good
Alkalies, Concentrated: Very Good
Amines: Fair
Animal & Vegetable Oils: Good
Brake Fluids, Non-Petroleum Based: Fair
Diester Oils: Poor
Esters, Alkyl Phosphate: Good
Esters, Aryl Phosphate: Good
Esters: ---
Fuel, Aliphatic Hydrocarbon: Poor
Fuel, Aromatic Hydrocarbon: Poor
Fuel, Extended (Oxygenated): Poor
Halogenated Solvents: Poor
Hydrocarbon, Halogenated: Poor
Ketones (MEK, acetone): Poor
Lacquer Solvents: Poor
LP Gases & Fuel Oils: Poor
Mineral Oils: Good
Oil Resistance: Poor
Petroleum Aromatic: Poor
Petroleum Non-Aromatic: Poor
Refrigerant Ammonia: Good
Refrigerant Halofluorocarbons: ---
Refrigerant Halofluorocarbons w/ Oil: ---
Silicone Oil: Poor to Fair
Solvent Resistance: Poor