

# Elastomer Material Selection Guide

Technical Reference for Industrial Rubber Applications

RubberQ Technical Resources

## 1. ASTM D2000 Classification System

The ASTM D2000 standard provides a systematic classification for rubber materials based on heat resistance (Type) and oil resistance (Class). Example: M2BG714 indicates Metric units, Grade 2, Type B (100°C), Class G (40% swell), 70 Shore A, 14 MPa tensile.

## 2. Material Properties Comparison

Material	Temp Range (°C)	Shore A	Tensile (MPa)	Oil Resist.	Ozone
FKM (Viton)	-20 to +204	60-85	10-20	Excellent	Excellent
EPDM	-55 to +150	40-90	10-20	Poor	Excellent
NBR (Nitrile)	-40 to +108	40-95	10-25	Excellent	Poor
HNBR	-30 to +150	60-90	20-30	Excellent	Good
Silicone (VMQ)	-60 to +230	30-85	5-10	Fair	Excellent
CR (Neoprene)	-40 to +121	40-95	10-25	Fair	Good

## 3. Application Selection Guide

- Automotive Fuel Systems: FKM or HNBR (excellent fuel and oil resistance)
- Steam & Hot Water: EPDM (excellent steam resistance, poor oil resistance)
- Hydraulic Systems: NBR or HNBR (excellent oil resistance)
- Extreme Temperatures: Silicone VMQ (-60°C to +230°C range)
- Outdoor/Weather Exposure: EPDM or CR (excellent ozone resistance)
- Chemical Processing: FKM or FFKM (broad chemical resistance)

## 4. Chemical Resistance Ratings

Material	Oils	Fuels	Acids	Alkalis	Ozone	Steam
FKM	E	E	E	F	E	F
EPDM	P	P	G	E	E	E
NBR	E	G	F	F	P	F
HNBR	E	E	G	F	G	F
Silicone	F	P	F	F	E	F
CR	F	F	F	G	G	F

Legend: E = Excellent, G = Good, F = Fair, P = Poor