Return To Index

O-Ring Material Selection

Standard O-rings supplied with Parker tube fittings and adapters are 90 durometer hard nitrile (Buna-N) Parker compound #N0552. These O-rings are well suited for most industrial hydraulic and pneumatic systems. They have high extrusion resistance making them suitable for very high pressure static applications. Optional high temperature fluorocarbon, Parker compound #V0894, is also available for higher temperature specifications.

O-rings for other than normal hydraulic media or higher temperature applications can be selected from the following chart. The chart should be used only as a general guide. Before making final selection for a given application, it is recommended that appropriate tests be conducted to assure compatibility with the fluid, temperature, pressure and other environmental conditions.

For fluids not shown in the chart, please contact the Tube Fittings Division.

Polymer	Abbreviated Name	Parker Compound No.	Color	SAE J515 Type	Hardness Shore "A"7)	Temperature Range	Recommended For	Not Recommended For
Nitrile-Butadiene	NBR	N0552	Black	CH[2)]	90[6)]	-30° to 250° F	Petroleum base oils and	Phosphate ester base
Nitrile-Butadiene	NBR	N0674	Black	–	70	-30° to 250° F	fluids, mineral oils, ethylene	hydraulic fluids, auto-
Nitrile-Butadiene	NBR	N0103	Black	–	70	-65° to 225° F	glycol base fluids, silicone	motive brake fluids,
Nitrile-Butadiene (Low compression set)	NBR	N1059	Black	CH[2)]	90	-30° to 275° F	and di-ester base lubricants, air, water under 150°F, and natural gas.	strong acids, ozone, freons, ketones, halogenated hydrocarbons,
Nitrile-Butadiene	NBR	N0507	Black	–	90	-65° to 180° F	Hydrogen fuel cells.	and methanol.
Nitrile-Butadiene	NBR	N0 304	Black	–	75	-65° to 225° F	Hydrogen fuel cells.	
Nitrile-Butadiene	NBR	N0508	Black	–	75	-35° to 250° F	Meets FDA requirements for food products.	
Nitrile-Butadiene	NBR	N0756	Black	–	75[6)]	-65° to 275°F	CNG Applications	
Ethylene-Propylene	EPDM	E0540	Black	CA[3)]	80	-65° to 275° F	Phosphate ester base	Petroleum base oils
Ethylene-Propylene	EPDM	E0893	Purple[1)]	CA[3)]	80	-65° to 275° F	hydraulic fluids, hot water, steam to 400°F, silicone oils and greases, dilute acids and alkalis, ketones, alcohols and automotive brake fluids.	and di-ester base lubricants.
Ethylene-Propylene	EPDM	E0962	Black	–	90	-65° to 275° F	CO_2 climate control systems.	
Neoprene	CR	C0873	Black	–	70	-45° to 250° F	Refrigerants (freons,	Phosphate ester fluids
Neoprene	CR	C0944	Red[1)]	–	70	-45° to 250° F	ammonia), high aniline point petroleum oils, mild acids, and silicate ester lubricants.	and ketones.
Fluorocarbon	FKM[5)]	V0747	Black	–	75	-15° to 400° F	Petroleum base oils and	Ketones, skydrol fluids,
	or	V0884	Brown[1)]	–	75	-15° to 400° F	fluids, some phosphate	amines (VDMH),
	FPM	V0894	Brown[1)]	HK[4)]	90[6)]	-15° to 400° F	ester base fluids, silicone and silicate ester base lubricants, di-ester base lubricants, acids and halogenated hydrocarbons.	anhydrous ammonia, low molecular weight esters and ethers, and hot hydrofluoric or chlorosulfonic acids.
Silicone	Si	S0604	Rust[1)]	–	70	-65° to 450° F	Dry heat (air to 400°F) and high aniline point oils.	Most petroleum fluids, ketones, water and steam.

Table U6 — O-Ring Selection

1) These Parker “Chromassure” color assurance O-rings are available from the Parker Hannifin O-Ring Division. They help eliminate assembly errors, reduce warranty costs and liability risks, and assure safety in aftermarket business.
2) Formerly SAE Type I.
3) Formerly SAE Type II.
4) Formerly SAE Type III.
5) “FKM” is the ASTM designation for fluorocarbon. Its ISO designation is “FPM”.
6) Standard compounds available from stock.
7) Use 90 durometer hard O-rings for applications with 1500 psi or higher pressures.