

## Chemical Guide

The Chemical Guides in this section are offered as a general indication of the compatibility of the various materials used in Parker/Dayco hose with the chemicals and fluids listed. The basis for the ratings in this guide include actual service experience, the advice of various polymer suppliers, and the considered opinion of our rubber chemists. When in doubt, a sample of the compound should always be tested with the particular chemical it is to handle. Some of the variables that come into play in the resistance of a compound to a chemical attack are:

**1. Temperature of the Material Transmitted:** Higher temperatures increase the effect of chemicals on rubber compounds. The increase varies with the polymer and the chemical. A compound quite suitable at room temperature might fail very quickly at higher temperatures.

**2. Service Conditions:** A rubber compound usually swells when exposed to a chemical. With a given percent of swell, a hose tube may function satisfactorily if the hose is in a static condition, but may fail quickly if the hose is subject to flexing.

**3. The Grade or Blend of the Rubber Compound:** Basic rubber polymers are sometimes mixed or blended together to enhance a particular property for a specific service. As an example, the NBR used as the tube material for Parker/Dayco aircraft refueling hose may vary slightly in its makeup from the NBR used in the tube of Thoro-Flo Multi-Purpose hose. The reaction to a particular chemical may, therefore, be somewhat different.

When in doubt, a sample of the compound should always be tested with the particular chemical it is going to handle.

### General Chemical Resistance of Parker Hose Compounds

See the following pages for specific applications.

Common Name	ASTM Designation D1418-64	Composition	General Properties	Hose Element
Buna-N or Nitrile	NBR	Nitrile-Butadiene	Excellent oil resistance. Good physical properties.	Tube/Cover
Cross Linked Polyethylene	XPE	Cross Linked Polyethylene	Excellent resistance to most solvents, oils and Tube Polyethylene chemicals. Do not confuse with chemical properties of standard polyethylene.	Tube
EPT or EPDM	EPDM	Ethylene-propylene-dieneterpolymer	Good general purpose polymer. Excellent heat ozone, and and weather resistance. Not oil resistant.	Tube/Cover
Flouorocarbon resin (Teflon)	TFE	Polytetra-flouroethylene	Excellent chemical and solvent resistance, inert to most materials. Smooth anti-adhesive surface – easily cleaned.	Tube
GRS or SBR	SBR	Styrene-Butadiene	Good physical properties, including abrasion resistance. Not oil resistant. Poor weathering and ozone resistance.	Tube/Cover
Hypalon	CSM	Chloro-sulfonated polyethylene	Excellent ozone, weathering and acid resistance. Good abrasion Good abrasion and heat resistance. Can be compounded for good oil resistance.	Tube/Cover
Natural	NR	Isoprene Rubber (Natural)	Excellent physical properties, including abrasion resistance. Not oil resistant.	Tube
Neoprene	CR	Chloroprene	Excellent weathering resistance. Flame retarding. Good oil resistance. Good physical properties.	Tube/Cover
Chlorinated polyethylene	CM	Chloropolyethylene	Good long term resistance to UV and weathering. Good oil and and chemical resistance. Excellent flame resistance. Good low temperature impact resistance.	Tube
Viton	FKM	Fluorocarbon rubber	Excellent high temperature resistance, particularly in air or oil. Very good chemical resistance.	Tube/Cover
Epichlorohydrin	ECO	Ethylene oxide Chloromethyl	Excellent oil and ozone resistance. Fair flame resistance and low permeability to gases. Good low temperature properties.	Tube/Cover
Butyl	IIR	Isobutene-isoprene	Very good weathering resistance, low permeability to air. Good physical properties. Poor resistance to petroleum based fluids.	Tube/Cover
Ultra-High Molecular Weight Polyethylene	UHMW	Ultra-High Molecular Weight Polyethylene	Excellent chemical resistance.	Tube