Guide to Hose Compounds, Properties, and Their Applications

When choosing the right hose for your application, it is helpful to understand the benefits of different hose materials. Before we get into the various types of rubber compounds, let's begin with a primer into the origin of natural rubber. The para' rubber tree is the major source of natural rubber latex in the world and is designated as natural gum rubber vs. a synthetic or man-made rubber. The para' rubber tree is indigenous to South America but is now successfully grown in India, Malaysia, Indonesia, and Thailand.

Natural Gum Rubber
Typically used in such applications as cement discharge or suction hose, construction aggregate conveyance, and even tubing for medical devices. Natural gum rubber displays elastic properties (think rubber band or latex gloves), is typically tan in color, and very abrasion-resistant.

- **Applications**: Cement/concrete/aggregate industries.
- **Products**: Parker EW708 Dredge Sand Suction Hose, Parker SW409 Sand Recovery Hose
- **Temperature Range**: -40F to 150F

Neoprene
Sometimes referred to as chloroprene, neoprene is a very common synthetic rubber that is used widely throughout the world today. Invented by Dupont, it was originally sold as "Duprene" before the name neoprene was widely adopted after the trademark was dropped. It resists degradation from mild oils and chemicals and handles a wider temperature range. It's often black in color but is also offered in other colors, neoprene is a very cost-effective rubber elastomer (an elastomer being an elastic substance resembling rubber).

- **Applications**: General use, low-cost rubber compound.
- **Products**: Parker Maximaire, Parker Thoro-Braid, Parker MPT II
- **Temperature Range**: -20F to 180F (212F for some styles)

Ethylene Propylene Diene Monomer (EPDM)
EPDM is visually similar to Neoprene. Its main ingredients are formed from oil and

natural gas, causing the raw material cost to fluctuate from worldwide supply and demand for oil. EPDM's properties make it a great choice for outdoor applications because of its resistance to the effects of ozone, heat, and temperature. One example of a smart use for EPDM is the cover of a typical garden hose you might use at home.

- **Applications**: Outdoors
- **Products**: Parker Dragon Breath hot air blower hose, Parker GST 11, Parker 7211 Super-Lok
- **Temperature Range**: -40F to 212F

NBR-Nitrile Butadiene Rubber (Buna-N)
Buna-N was patented in 1934 and has been widely used. It has great resistance to oil and other chemicals and makes a great choice for conveying petroleum-based products such as diesel fuel, and crude oil. Like EPDM, Buna-N has a very similar look and feel to neoprene, which reinforces the importance of using the correct rubber compound for the hose made specifically for the job. Due to its durability, nitrile-butadiene rubber is also commonly used in O-rings.

- **Applications**: Petroleum-Based Products,
- **Products**: Parker Jiffy Push On Hose, Parker Super MPT II
- **Temperature Range**: -20F to 212F

Choosing the exact elastomeric compound for your application is vitally important. Chemical compatibility, temperature, pressure, and environment all influence our recommendations for you. For example, a neoprene lined hose wouldn't be appropriate for a high abrasion application, just like a natural gum rubber lined hose wouldn't be good for a job involving a petroleum-based product, as it could cause a catastrophic hose failure. Contact us today to speak with one of our hose experts about your specific application.