



HANNA RUBBER COMPANY

# Types of Rubber

## Epichlorohydrin (ASTM D2000 Designation CH)

Epichlorohydrin rubber, also known as ECH/ECO (Epichlorohydrin Ethylene Oxide) or GECO (Glycidyl Ether Copolymer) rubber, is a type of synthetic elastomer derived from epichlorohydrin. It is a copolymer of epichlorohydrin and ethylene oxide or sometimes other comonomers. This rubber is known for its excellent resistance to oil, fuel, and various chemicals, making it suitable for use in automotive and industrial applications.

**Some physical properties of epichlorohydrin rubber include:**

**Appearance:** Generally black or off-white in color, can be produced in various colors based on the application.

**Hardness:** Shore A hardness typically ranges from 50 to 90, depending on the specific formulation.

**Tensile Strength:** Varies between 10-20 MPa (1,450-2,900 psi), depending on the specific formulation.

**Elongation at Break:** Ranges from 100% to 300%.

**Specific Gravity:** 1.20 - 1.30 g/cm<sup>3</sup>, depending on the specific formulation.

**Operating Temperature Range:** -40°C to 135°C (-40°F to 275°F), with short-term exposure up to 150°C (302°F).

**Chemical Resistance:** Excellent resistance to oils, fuels, ozone, and UV radiation. Good resistance to acids, alkalis, and other chemicals.

**Low-Temperature Flexibility:** Better than nitrile rubber (NBR) but not as good as silicone or fluorosilicone rubber.

**Compression Set:** Good to very good compression set resistance, depending on the specific formulation.

Epichlorohydrin rubber is commonly used in applications that require excellent resistance to oil and fuels, such as automotive fuel systems, hoses, seals, gaskets, and diaphragms. It is also used in industrial applications where chemical resistance and durability are critical, including chemical processing plants and power generation facilities.

It is worth noting that epichlorohydrin rubber is not recommended for applications involving exposure to ketones, esters, and some other solvents, as it may degrade in their presence.