

NBR

(Nitrile rubber, Buna-N, or acrylonitrile-butadiene rubber)



The reliable Elastomer for Oil, Fuel & Industrial Applications

NBR, also known as Buna-N, is a synthetic rubber made from acrylonitrile and butadiene.

It is valued for its **oil resistance**, **durability**, and **cost-effectiveness**, making it one of the most widely used elastomers across industries.

- Adjustable formulation for **oil/fuel resistance** or **low-temperature flexibility**
- Proven in demanding environments for over 70 years.
- Available in standard, food-grade, and specialty grades

Key Features

- ✓ Excellent resistance to oils, fuels, hydrocarbons
- ✓ Good **mechanical strength & abrasion resistance**
- ✓ Moderate **temperature range**: -30 °C to +120 °C
- ✓ Reliable sealing with good **compression set resistance**
- ✓ Full range available & cost-effective solutions

Applications - Seals, Gaskets, O-Rings, Hoses and Gloves

NBR is a versatile elastomer used across industries where **oil, fuel, and chemical resistance** are essential. From **seals, gaskets, hoses, and diaphragms** in automotive and industrial systems to **disposable gloves** in **healthcare** and **fuel system components** in **aerospace**, NBR delivers proven durability and performance in demanding environments.

Industrial & Automotive

- O-rings, gaskets, seals
- Fuel & oil hoses, hydraulic systems.
- Diaphragms, membranes, pump components

Protective & Consumer

- Disposable nitrile gloves
- Conveyor belts, rollers, footwear, coatings

Aerospace & Specialty

- Fuel system seals and hoses
- Synthetic leather and adhesives

Technical Data Sheet

Specification: Nitrile Butadiene Rubber (NBR)

Colour:  Black

Description:

A robust high-performance nitrile butadiene rubber compound with a nominal hardness of 70 Shore A, designed for use in applications requiring **exceptional resistance to oils, fuels, and hydrocarbons**. NBR compounds are widely specified in automotive, aerospace, and industrial sealing due to their proven performance in contact with lubricants, fuels, and hydraulic fluids.

The material demonstrates **strong mechanical strength, abrasion resistance, and reliable sealing under compression**, making it ideal for **O-rings, gaskets, hoses, and diaphragms**. With a typical service temperature range of -30 °C to +120 °C, this formulation provides a cost-effective balance of **durability and chemical compatibility**, ensuring long-term performance in demanding environments.

Unique Properties:

Material: (NBR) Nitrile Butadiene Rubber

Recommended Temperature Range: -30 °C to +100 °C (short-term peaks up to +120 °C)

Features:

- **Temperature**
 - Optimal service temperature: -30 °C to +100 °C (short-term peaks up to +120 °C).
 - Continuous operation near the upper limit accelerates ageing and hardening.
 - Lower acrylonitrile grades offer better cold flexibility but reduced oil resistance.
- **Chemical Exposure**
 - Excellent resistance to **oils, fuels, lubricants, and hydrocarbons** ensures long service life in contact with these media.
 - Prolonged exposure to **aromatic hydrocarbons, esters, ketones, or chlorinated solvents** will significantly shorten product life.
- **Mechanical Factors**
 - Good **abrasion and tear resistance** supports durability in dynamic applications such as hoses, seals, and diaphragms.
 - Low **compression set** helps maintain sealing performance over time.
- **Environmental Resistance**
 - Limited resistance to **ozone, UV light, and outdoor weathering**; life expectancy in outdoor use may be reduced without protective measures (e.g. coatings or additives).
 - Indoor or fluid-immersed applications generally extend service life.
- **Expected Service Life**
 - **Indoor / protected use:** 5-10 years depending on duty cycle and fluid contact.
 - **Outdoor / exposed use:** 2-5 years without UV/ozone protection.
 - In many controlled industrial environments, **NBR components can perform reliably for several years with minimal degradation**, provided they remain within recommended operating conditions.

Typical Applications: Seals, Gaskets, O-Rings, Hoses and Gloves

Harltex can support custom formulations for food-grade or aerospace standards (on request). Please contact our sales team for further information.