

Gasket Material Information

Subject	Ref. No.	Page
HNBR (Hydrogenated Nitrile Rubber)		1 / 1
Issued by	Department	Date
Markus Nykvist	R & D	April, 2020

HNBR for Gasket applications

The HNBR gasket materials are especially developed oil resistant grades typically used for oil and gas applications.

The HNBR polymers used are based on fully hydrogenated copolymers from butadiene and acrylonitrile monomers. The most important feature of the HNBR polymers is the polarity achieved from the acrylonitrile content together with the saturated polymer backbone. This polarity will contribute to the material's good resistance to unpolar mineral oils-based hydrocarbons. In this respect, there is in principle no difference for HNBR compared to NBR polymer. However, the saturated polymer gives the material a significant improvement with respect of heat ageing compared to standard NBR

The HNBR materials are especially developed and tested to enable high temperatures in steam. However, the low temperature properties are not as good as for NBR as the flexibility of the polymer is affected by the fact that there is no unsaturation left. In order to secure the best aging and stress relaxation/compression set properties a well-balanced cure system containing the right type of peroxide combined with an efficient activator system has been selected. The maximum temperature is up to 160 °C for steam applications and the flexibility of the polymer allows for a minimum temperature of -10 °C

Resistance to water, steam, mineral oils, petroleum fuel, hydrocarbon solvents, heat transfer oils of hydrocarbon type, paraffinic hydrocarbons, vegetable oils and animal fats is very good.

For amines, ketones, aldehydes, low molecular esters, salt solutions, organic acids, alkaline, oxidising acids such as hydrochloric acid, nitric acid or sulphuric acid the resistance is poor.

Ozone resistance is not critical, and gaskets should be stored in warehouse in accordance with the supplier's instructions.

Markus Nykvist
R&D Manager