

## Gasket Material Information

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### General description of Gislaved's extra hard EPDM materials for PHE-gasket applications

Gislaved's EPDM XH gasket materials are based on amorphous ethylene-propylene-diene terpolymer. The most important feature of ethylene-propylene-diene terpolymer is the fully saturated hydrocarbon polymer backbone which gives the best possible thermal and oxidizing stability of all pure hydrocarbon elastomers.

These EPDM XH materials are especially developed and tested to enable, not only high temperatures, but also to some extent low temperature duties. 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 150 °C for steam applications and the flexibility of the polymer allows for a minimum temperature as low as -30 °C.

EPDM XH is a "problem solver" within the EPDM application sphere. To use EPDM XH will add extra safety margins in duties where standard EPDM gaskets might be a doubtful or "on the limit" duty. However, due to the high gasket hardness metal plates in the PHE should have a thickness of at least 0,6 mm. Lower thickness might cause plate bending by assembling the PHE unit.

Resistance to water, steam, MDEA and some other amines, salt solutions, acids and alkalines is excellent with exception of strong oxidising acids, at higher concentrations, e.g. nitric acid or sulphuric acid.

Ethylene-propylene-diene is a non-polar pure hydrocarbon elastomer, which readily swells in all type of hydrocarbons. Consequently, the material is not resistant in crude oil, fuels, lubricating oil, any hydrocarbon solvents, heat transfer oils of hydrocarbon type, asphalt etc.

EPDM XH does, however, withstand aromatic hydrocarbons up to content below 300 ppm. Since alifatic mineral oils have a lower solubility in water, these are more critical and if exceeding 10 ppm these might be devastating even for EPDM XH.

Applications in vegetable oils and animals fats are normally not recommended.

The EPDM elastomer has good and in many cases excellent resistance in polar organic fluids such as alcohols, glycols, organic acids, ketones, aldehydes, ethanolamines, low molecular esters etc. The material is not affected by corrosion inhibitors normally used in steam systems. Resistance to sodium hydroxide is excellent.

Ozone resistance is excellent and storage of gaskets for a number of years is not critical. Gislaved's material designation:

- Industrial grades: 70903 (2,3 shrinkage) and 70910 (2,6 shrinkage)