

HNBR 70.10-09



HNBR is widely used in applications, where fat and oil resistance is needed or mechanical challenges on product side with abrasive media ask for a mechanical stronger compound. This is also valid for gas applications, where HNBR's mechanical and chemical longevity gives customers peace of mind. In some application cases it was replaced with fluorinated materials in the past, like Angst + Pfister offers them with its own PERTEC® CIP FKM and PERTEC® UP FKM materials made with the latest technology. But with PFAS regulations on the rise, customers want to explore fluorine-free materials, being able to adapt to nowadays' challenges.

With its yellow HNBR 70.10-09 Angst + Pfister offers a specially designed compound for applications within the gas industry, another high-tech compound out of their portfolio. With HNBR providing excellent mechanical properties traditionally, HNBR 70.10-09 fulfills the regulatory demands imposed on materials on the one hand, on the other it offers the chemical resistance needed for typical industry-specific applications in gas and especially hydrogen contact.

Since it is based exclusively on non-fluorinated polymers and will not be affected by any future PFAS regulation, Angst+Pfister's HNBR 70.10-09 is an interesting alternative material solution for applications in contact with gas and especially hydrogen, where FKM should not be used and HNBR is sufficient.

Features

- Wide temperature range of -40°C up to +150°C
- Suitable for the production of complex engineered moulded parts as well as for O-Rings
- For static and dynamic applications
- Tested with hydrogen up to 100%

Benefits

- Yellow HNBR compound prevents mix-up of materials
- Excellent mechanical properties
- Complies with DVGW testing including Hydrogen up to 100%
- Higher thermal resistance for temperatures above +100°C
- Increased ozone resistance improves life-time and performance compared to NBR compounds
- Better chemical resistance makes HNBR 70.10-09 suitable for synthetic oils, too, and offers an option between NBRs' and FKMs' performance level.

Our contact details

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Mechanical properties

Hardness nominal	70 ±5 Shore A
Density nominal	1.33 ±0.03 g/cm ³
Tensile strength	12 N/mm ²
Elongation at break	340 %
Compression set	27 % ASTM D 395-B 72 h, -20 °C
	15 % ASTM D 395-B 168 h, +125 °C

Storage in medium 1

Medium	IRM 902 Oil (ASTM 2)
Test parameter	168 h, +100 °C
Test standard	ASTM D 471
Value change	Hardness: +1 Points Volume: -2 %

Air aging

Test parameter	168 h, +125 °C
Test standard	ASTM D 573
Value change	Hardness: +8 Points Tensile strength: +7 % Elongation at break: -20 %

Ozone

Ozone concentration	50 ppm
Duration of test	48 h
Temperature during test	+40 °C
Elongation during test	15 %
Relative humidity during test	48 %
Test result	PASSED

Storage in medium 2

Medium	ASTM Pentane
Test parameter	70 h, +23 °C
Test standard	ASTM D 573
Value change	Volume: +10 %

Certificares

HNBR 70.10-09 complies with the following regulations for the oil and gas industry

DVGW CERT ZP 5101:2021-12 H₂ mean permeability
582 (cm³ x mm) / (m² x 24 h x bar) / +23 °C

DVGW EN 549 C2 / H3

DVGW EN 682 Type GBL

Upon request Angst+Pfister can offer many more approvals.

Industries/Segments			Typical Products
Gas 	Hydrogen 	Oil 	O-rings Moulded parts Dynamic seals