NBR H2 70P

NBR-H2-70P-01 · NBR · 70 Shore A · Peroxide cure · −30 °C to +100 °C

NO POLE MARK

For the gas grid as the hydrogen share goes up.

READ THE CODE NBR-H2-70P-01 = NBR, H2 duty (hydrogen service), 70 Shore A, P for peroxide cure, recipe 01.

DEVELOPMENT TARGETS: NOT MEASURED RESULTS. Every value on this sheet is a design target or a release limit for development. Replace targets with measured typical values (mean of production lots, with the number of lots) and the test report reference before external use.

Description

A 70 Shore A peroxide-cured NBR for seals and diaphragms in gas distribution and gas appliances carrying natural gas blended with hydrogen, up to 100 % hydrogen: low hydrogen permeation for a nitrile and low compression set, with DVGW ZP 5101 and EN 549 testing planned.

POLYMER	NBR (nitrile)
DUTY	H2: Hydrogen
CHEMISTRY	Peroxide-cured nitrile, medium-high acrylonitrile, low permeation, gas grade
CURE	Peroxide
HARDNESS	70 Shore A nominal
DESIGN RANGE	−30 °C to +100 °C
COLOUR	Black
PORTFOLIO	Wave 2, probable
POLE MARKS	None

Applications

- Seals and diaphragms in gas meters, regulators and valves
- Domestic and commercial gas appliance seals
- City gas distribution fittings and couplings
- Hydrogen-ready retrofits of existing networks

Properties: targets and release limits

PROPERTY	TARGET	RELEASE LIMIT	UNIT	TEST METHOD
Hardness	**70**	**65 to 75**	Shore A	ASTM D2240 / ISO 48-4, 1 s
Specific gravity	**1.24**	**±0.02 of approved value**	—	ASTM D297 / ISO 2781
Tensile strength	**14**	**min 11**	MPa	ASTM D412 die C / ISO 37 type 2
Elongation at break	**350**	**min 250**	%	ASTM D412 die C / ISO 37 type 2
Compression set, 22 h at 100 °C	**12**	**max 20**	%	ASTM D395 method B, button
Compression set, 1,000 h at 70 °C	**20**	**max 30**	%	ISO 815-1
TR10	**−28**	**max −25**	°C	ASTM D1329 / ISO 2921
IRM 903, 70 h at 100 °C, volume change	**+5**	**max +10**	%	ASTM D471 / ISO 1817
Hydrogen permeability, 23 °C	**To report**	**Reported, no limit yet**	—	ISO 15105-1 / ISO 2782-1

Qualification plan

The grade code says what this compound is designed for. This table says what it has passed: a duty is claimed only once its report is on file. Evidence for the H2 duty: Hydrogen decompression or permeation data at the stated conditions, and the stack maker's ageing tests for fuel cells and electrolysers.

TEST	STANDARD OR METHOD	CONDITIONS	STATUS
Hydrogen compatibility and permeation	DVGW ZP 5101 (to 100 vol.% H2)	Certification testing at an approved laboratory	Planned
Gas appliance seal materials	EN 549	Class and temperature range agreed with the appliance or regulator maker	Planned
Hydrogen permeability	ISO 15105-1 / ISO 2782-1	Hydrogen at 23 °C	Planned
Long-term compression set	ISO 815-1	1,000 h at 70 °C	Planned
Rapid gas decompression (optional module)	DVGW ZP 5101 RGD extension (December 2025)	Where the network sees fast pressure changes	Planned

Processing

Press cure guide: 8 min at 175 °C. Post-cure guide: 2 h at 120 °C (optional, for the lowest compression set).

Storage and lot record

Target 6 months at or below 25 °C. Every lot ships with its Passport: results against these limits, the rheometer cure curve and the raw-material lots.

How to read this sheet

Target: the value the compound is designed to reach, used until measured data exists.

Typical: the mean of measured production lots, stated with the number of lots. Replaces the target.

Release limit: the window every lot is tested against. A lot outside it does not ship.

Method: the standard, specimen and conditions behind each number.

Supply

Supplied as uncured compound by the batch, with the lot Passport. Test slabs, buttons and trial quantities are available for qualification.

Tell us the fluid, the temperature range, the pressure and the seal design, and we will say whether this grade fits, and which one does if it does not.

Pole marks

This is a reference or general grade and carries no pole mark. The red HPHT mark is for high-pressure duty at 160 °C or above; the blue HPLT mark is for sealing under pressure at −30 °C or below.

Typical values are indicative and are not a warranty. Targets are design values, not measured results. The user is responsible for confirming suitability in the actual application. Pascalor · Compounds with a paper trail.