HNBR Packer 75S

HNBR-PKR75S-01 · HNBR · 75 Shore A · Sulfur cure · −25 °C to +150 °C

NO POLE MARK

The soft centre of a packer that has to stay set.

READ THE CODE HNBR-PKR75S-01 = HNBR, PKR duty (packer elements), 75 Shore A, S for sulfur 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 75 Shore A sulfur-cured HNBR for the centre element of multi-durometer packers: high elongation and tear strength so it can flow into the casing gap and seal, with HNBR heat and chemical resistance.

Applications

- Centre elements of retrievable and permanent production packers
- Bridge plugs and non-dissolvable frac plugs
- Liner hanger packers
- Test packers and inflatable elements (with reinforcement)

POLYMER	HNBR (hydrogenated nitrile)
DUTY	PKR: packer elements
CHEMISTRY	Sulfur-cured hydrogenated nitrile (partially saturated grade), medium acrylonitrile
CURE	Sulfur
HARDNESS	75 Shore A nominal
DESIGN RANGE	−25 °C to +150 °C
COLOUR	Black
PORTFOLIO	Wave 1, must-have
POLE MARKS	None

Properties: targets and release limits

PROPERTY	TARGET	RELEASE LIMIT	UNIT	TEST METHOD
Hardness	**75**	**70 to 80**	Shore A	ASTM D2240 / ISO 48-4, 1 s
Specific gravity	**1.22**	**±0.02 of approved value**	—	ASTM D297 / ISO 2781
Tensile strength	**24**	**min 20**	MPa	ASTM D412 die C / ISO 37 type 2
Elongation at break	**380**	**min 300**	%	ASTM D412 die C / ISO 37 type 2
Modulus at 100 %	**4**	**3 to 6**	MPa	ASTM D412 die C / ISO 37 type 2
Tear strength	**50**	**min 40**	kN/m	ASTM D624 die C
Compression set, 70 h at 150 °C	**35**	**max 45**	%	ASTM D395 method B, button
TR10	**−24**	**max −20**	°C	ASTM D1329 / ISO 2921
IRM 903, 70 h at 150 °C, volume change	**+8**	**max +15**	%	ASTM D471 / ISO 1817
Heat ageing 70 h at 150 °C, hardness change	**+5**	**0 to +8**	points	ASTM D573 / ISO 188

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 PKR duty: Compound data (modulus, compression set, gap extrusion); packer validation to ISO 14310 / API 11D1 is done on the tool.

TEST	STANDARD OR METHOD	CONDITIONS	STATUS
Packer element test	API 11D1 / ISO 14310, with a packer OEM	Validation grade V3 or V1 (to be confirmed) on the OEM design	Planned
Completion brine ageing	In-house method, published with results	CaCl2 / CaBr2 brines, 168 h at 150 °C	Planned
Sour ageing and life prediction	ISO 23936-2 Annex A / NORSOK M-710	Sour multiphase fluid (hydrocarbon liquid, water, gas with H2S) at three temperatures; Arrhenius extrapolation to service temperature	Planned

Processing

Press cure guide: 15 min at 160 °C (thick sections longer). Bond to steel with a suitable primer and adhesive system.

Storage and lot record

Target 3 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.