NBR General 90S

NBR-GEN90S-01 · NBR · 90 Shore A · Sulfur cure · −25 °C to +121 °C

NO POLE MARK

Hard nitrile for oilfield pressure.

READ THE CODE NBR-GEN90S-01 = NBR, GEN duty (general reference grade), 90 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 90 Shore A sulfur-cured NBR for oilfield and hydraulic seals where pressure and extrusion matter more than temperature, targeted at API 6A temperature class U (to 121 °C) after immersion testing.

POLYMER	NBR (nitrile)
DUTY	GEN: reference grades
CHEMISTRY	Sulfur-cured nitrile, medium acrylonitrile, high modulus
CURE	Sulfur
HARDNESS	90 Shore A nominal
DESIGN RANGE	−25 °C to +121 °C
COLOUR	Black
PORTFOLIO	Wave 1, must-have
POLE MARKS	None

Applications

- Wellhead and valve seals in sweet service to 121 °C
- Hydraulic cylinder and actuator seals
- Back-up rings and anti-extrusion parts
- Mud and water handling equipment

Properties: targets and release limits

PROPERTY	TARGET	RELEASE LIMIT	UNIT	TEST METHOD
Hardness	**90**	**85 to 95**	Shore A	ASTM D2240 / ISO 48-4, 1 s
Specific gravity	**1.28**	**±0.02 of approved value**	—	ASTM D297 / ISO 2781
Tensile strength	**16**	**min 13**	MPa	ASTM D412 die C / ISO 37 type 2
Elongation at break	**150**	**min 110**	%	ASTM D412 die C / ISO 37 type 2
Modulus at 100 %	**10**	**8 to 13**	MPa	ASTM D412 die C / ISO 37 type 2
Compression set, 22 h at 100 °C	**15**	**max 25**	%	ASTM D395 method B, button
TR10	**−20**	**max −18**	°C	ASTM D1329 / ISO 2921
IRM 903, 70 h at 100 °C, volume change	**+5**	**max +10**	%	ASTM D471 / ISO 1817

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 GEN duty: Standard property data (an ASTM D2000 line call-out where one applies).

TEST	STANDARD OR METHOD	CONDITIONS	STATUS
Elastomer immersion	API 6A Annex F, sweet material classes (AA to CC)	At least 160 h at 121 °C (temperature class U)	Planned
Rapid gas decompression (optional)	ISO 23936-2 Annex B	As for the RGD grades	Planned
Specification call-out	ASTM D2000 line call-out	To be issued	Planned

Processing

Press cure guide: 8 to 10 min at 165 °C (thicker sections longer).

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.