

Standard Reference Elastomers (SRE): BAM-E015

Elastomer ISO 6072 NBR 1

1. Scope and field application

These SREs are representative of peroxide-cured NBR materials such as are used, e. g., for parts in contact with petroleum products in the mechanical-engineering and automotive sector.

They are used for the characterization of service fluids such as mineral-based, fire-resistant and biodegradable hydraulic fluids with regard to their effect on peroxide-cured nitrile rubbers.

From the changes in volume, hardness, tensile strength and elongation at break, which SRE test specimen undergo when immersed in a certain fluid under specified test conditions, an elastomer compatibility index (ECI) can be established for this fluid. This ECI allows selection of suitable combinations of fluids and elastomeric materials without prolonged testing and may provide enough information so as to eliminate totally unsuitable elastomer/fluid combinations.

2. Formulation of the rubber mixture

Parts by mass

a) NBR with 28 % by mass of acrylonitrile (Perbunan NT 2845)	100,0
b) Antidegradant TMQ (Vulkanox HS)	0,5
c) Zinc oxide (Zinkoxyd aktiv)	5,0
d) Carbon black N 550 (Corax N 550)	70,0
e) Dicumyl peroxide (40 % by mass; Perkadox BC 40)	3,0

Conditions of vulcanization: 170 °C, 20 min

3. Specifications

a) Density according to ISO 2781	(1,21 - 1,25) g/cm ³
b) Hardness according to ISO 48-2	(77 - 83) IRHD
c) Tensile strength according to ISO 37	20 MPa min.
d) Elongation at break	150 % min.
e) Compression set according to ISO 815-1	20 % max.
e) Increase in mass in liquid B for fuels, as in ISO 1817; 23 °C, 22 h	(22 - 32) %

4. Dimensions

2 mm x 181 mm x 181 mm

5. Storage

Cool, dry, protected from light and kept in a protective cover (e.g. polyethylen bag) completely closed.

6. Guarantee

If used properly: 1 year.

7. Identification

The standard reference elastomer sheet is labelled indicating the producer (BAM), the year of production, the standard, the type of SRE and serial number.

The SRE is produced, certified and supplied by

Bundesanstalt für Materialforschung und -prüfung (BAM)

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