

Material name, short description	NBR
Material name, based on technical standards	Acrylic-Butadiene-Rubber
Material description / intended use	Elastomer with good resistance to mineral and vegetable oils/greases, alkalis, alcohols, gas, water
Color	black
Compound code	NBR 60.45-03
Old, but still valid compound code	NBR 60.445-01
Remarks	ASTM code: ASTM D2000 M2BG610 B14 EO14 EO34 EF11 EF21 EA14 Z1 / with ozone protection

Mechanical properties

Hardness nominal	60 $\pm$ 5 Shore A ASTM D 2240
Density nominal	1.24 $\pm$ 0.03 g/cm ³ ASTM D 1817
Tensile strength	12.4 N/mm ² ASTM D 412-C
Elongation at break	446 % ASTM D 412-C
Compression set	6 % ASTM D 395-B 22 h, 100 °C

Thermal properties

Operating temperature min.*	-30 °C
Operating temperature max.*	100 °C

* Approximate value, dependent on the application

Storage in medium 1

Medium	IRM 901 Oil (ASTM 1)
Test parameter	70 h, 100 °C
Test standard	ASTM D 471
Value change	Hardness: +5 Points Tensile strength: +12 % Elongation at break: -13 % Volume: -9 %

Storage in medium 2

Medium	IRM 903 Oil (ASTM 3)
Test parameter	70 h, 100 °C
Test standard	ASTM D 471
Value change	Hardness: -1 Tensile strength: +3 % Elongation at break: -11 % Volume: +1 %

Storage in medium 3

Medium	ASTM Fuel A
Test parameter	70 h, 23 °C
Test standard	ASTM D 471
Value change	Hardness: 0 Points Tensile strength: -6 % Elongation at break: -5 % Volume: -1 %

Storage in medium 4

Medium	ASTM Fuel B
Test parameter	70 h, 23 °C
Test standard	ASTM D 471
Value change	Hardness: -9 Points Tensile strength: -42 % Elongation at break: -38 % Volume: +21 %

In compliance with **RoHS** and **REACH** directives.

This information is based on our available data. These values are measured on standard test specimens and are within the normal tolerance range of material properties and do not represent guaranteed property values. Therefore they shall not be used for specification purposes. The customer is solely responsible for quality and suitability of material for his application. He has to test usage and processing prior to use. Angst+Pfister makes no guarantees for the suitability of the material for any given application and assumes no obligation or liability in connection with the information provided above.

Storage in medium 5

Medium	Water ASTM
Test parameter	70 h, 100 °C
Test standard	ASTM D 471
Value change	Hardness: 0 Points Tensile strength: -6 % Elongation at break: -14 % Volume: +4 %

Ozone test

Ozone concentration	50 ppm
Duration of test	72 h
Temperature during test	40 °C
Relative humidity during test	72 %
Test result	PASSED

Air aging 1

Test parameter	70 h, 100 °C
Test standard	ASTM D 573
Value change	Hardness: +9 Points Tensile strength: +15 % Elongation at break: -16 % Volume: -7 %

In compliance with **RoHS** and **REACH** directives.

This information is based on our available data. These values are measured on standard test specimens and are within the normal tolerance range of material properties and do not represent guaranteed property values. Therefore they shall not be used for specification purposes. The customer is solely responsible for quality and suitability of material for his application. He has to test usage and processing prior to use. Angst+Pfister makes no guarantees for the suitability of the material for any given application and assumes no obligation or liability in connection with the information provided above.