

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 70.10-02
Old, but still valid compound code	NBR 70.5/P5F
Crosslinking/curing agent	sulfur
Manufacturing process	moulded parts
Remarks	ACN content 33% ASTM code: ASTM D2000 SAEJ200-M2 BG714 A14 B14 EA14 EF11 EF21 EO14 EO34

**Mechanical properties**

Hardness nominal	70 ±5 Shore A ASTM D 2240
Density nominal	1.3 ±0.03 g/cm <sup>3</sup> ASTM D 297
Tensile strength	14 N/mm <sup>2</sup> ASTM D 412-C
Elongation at break	270 % ASTM D 412-C
Compression set	18 % ASTM D 395-B 22 h, 125 °C  23 % ASTM D 395-B 70 h, 100 °C
Tear resistance	40 N/mm ASTM D 624-B
Abrasion	155 mm <sup>3</sup> ISO 4649

**Thermal properties**

Operating temperature min.*	-20 °C
Operating temperature max.*	125 °C
TR 10 value	-20 °C ASTM D 1329
Brittleness point	-20 °C ASTM D 2137-A

\* 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: 0 Points Tensile strength: -24 % Elongation at break: -29 % Volume: -3 %

**Storage in medium 2**

Medium	IRM 903 Oil (ASTM 3)
Test parameter	70 h, 100 °C
Test standard	ASTM D 471
Value change	Hardness: -9 Tensile strength: -20 % Elongation at break: -18 % Volume: +15 %

**Air aging 2**

Test parameter	70 h, 110 °C
Test standard	ASTM D 573
Value change	Hardness: +7 Points Tensile strength: +5 % Elongation at break: -34 %

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 3

Medium	Water ASTM
Test parameter	70 h, 100 °C
Test standard	ASTM D 471
Value change	Hardness: -6 Points Tensile strength: -9 % Elongation at break: -10 % Volume: +8 %

## Air aging 1

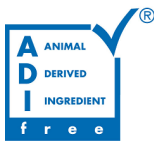
Test parameter	70 h, 100 °C
Test standard	ASTM D 573
Value change	Hardness: +5 Points Tensile strength: 0 % Elongation at break: -20 %

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## Approvals / Compliance

Drinking water	NSF 61 cold and hot up to 85 °C
	ACS (DGS/VS4 n°99/217 dated 12/04/1999 and DGS/VS4 n°2000/232 dated 27/04/2000) expiring date 20.12.2023
	CLP (DGS/VS4 n°99/217 dated 12/04/1999 and DGS/VS4 n°2000/232 dated 27/04/2000)
	D.M. 06/04/04 n°174
	ÖNORM (B 5014-1) for drinking water cold and hot up to 85 °C
	UBA Conformity for drinking water cold and hot up to 85°C, Product group P2 and P3
	WRAS (BS 6920-1:2000 specification) cold water 23 °C
Food & Beverage	FDA CFR 21 - 177.2600 "Rubber articles intended for repeated use" a) - f)
	D.M. 21/03/1973 (Migration test)
	Dlgs. 25.01.1992 n.108 Art.2 (ex. DPR 777/82 art 2) - Complies with Arsenic content limits
	Regulation EC 1935/2004 (excl. article 15, based on FDA) and EC Regulation 2023/2006 (GMP)
	Resolution ResAP (2004) 4
	GB 4806.11-2016 (Migration test)
Oil & Gas	DVGW CERT ZP 5101:2021-12 H <sub>2</sub> mean permeability 638 (cm <sup>3</sup> x mm) / (m <sup>2</sup> x 24 h x bar) / 23°C
	DVGW EN 549 B1/H3
Specific substance statements	ADI free (free of Animal Derived Ingredients) resp. TSE/BSE related substances
	PAH Category 2 (AfPS GS 2019:01)



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