

Material name, short description	EPDM
Material name, based on technical standards	Ethylene-propylene-diene rubber
Material description / intended use	Elastomer with good resistance to hot water and vapour as well as UV and ozone.
Color	black
Compound code	EPDM 70.503-00
Old, but still valid compound code	EPDM 70.502-03
Crosslinking/curing agent	Peroxide
Remarks	Testing for Mercosur GMS/RS N°54/97 (migration) is in progress

Mechanical properties

Hardness nominal	70 ±5 Shore A
Density nominal	1.18 ±0.03 g/cm ³ ISO 2781-A
Tensile strength	15.5 N/mm ² ISO 37-Typ 1
Elongation at break	218 % ISO 37-Typ 1
Compression set	12 % ISO 815-A 22 h, 150 °C
	22 % ISO 815-A 70 h, 150 °C
Tear resistance	28 N/mm ISO 34-1C

Thermal properties

Operating temperature min.*	-57 °C
Operating temperature max.*	150 °C
TR 10 value	-47 °C ASTM D 1329
Brittleness point	-60 °C ASTM D 2137-A

* Approximate value, dependent on the application

Storage in medium 1

Medium	Water
Test parameter	70 h, 100 °C
Test standard	ISO 1817
Value change	Hardness: -1 Points Tensile strength: +2 % Elongation at break: -3 % Volume: +1 % Weight: +1 %

Storage in medium 2

Medium	Water / Ethyleneglycole 50:50
Test parameter	70 h, 100 °C
Test standard	ISO 1817
Value change	Hardness: -1 Tensile strength: +5 % Elongation at break: +5 % Volume: +0.5 % Weight: +0.5 %

Storage in medium 3

Medium	Molykote 111
Test parameter	336 h, 23 °C
Test standard	DIN ISO 1817
Value change	Hardness: 0 Shore A Tensile strength: +3 % Elongation at break: +2 % Volume: -0.7 % Weight: -0.5 %

Storage in medium 4

Medium	Molykote 111
Test parameter	336 h, 70 °C
Test standard	DIN ISO 1817
Value change	Hardness: 0 Shore A Tensile strength: +12 % Elongation at break: +2 % Volume: -2.0 % Weight: -1.3 %

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	Molykote 111
Test parameter	672 h, 23 °C
Test standard	DIN ISO 1817
Value change	Hardness: -1 Shore A Tensile strength: +6 % Elongation at break: 0 % Volume: -0.9 % Weight: -0.6 %

Storage in medium 6

Medium	Molykote 111
Test parameter	672 h, 70 °C
Test standard	DIN ISO 1817
Value change	Hardness: 0 Shore A Tensile strength: +15 % Elongation at break: +3 % Volume: -2.0 % Weight: -1.4 %

Air aging 1

Test parameter	70 h, 100 °C
Test standard	ISO 188-B
Value change	Hardness: +1.5 Points Tensile strength: +3 % Elongation at break: -7 % Volume: -0.5 % Weight: -0.5 %

Air aging 2

Test parameter	70 h, 150 °C
Test standard	ISO 188-B
Value change	Hardness: +3 Points Tensile strength: +4 % Elongation at break: -16 % Volume: -1 % Weight: -1 %

Ozone test

Ozone concentration	100 pphm
Test standard	ISO 1431-1
Duration of test	72 h
Temperature during test	40 °C
Elongation during test	100 %
Relative humidity during test	72 %
Test result	PASSED

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Approvals / Compliance

Drinking water	UBA Conformity hygiene based on KTW-BWGL and DIN EN 16421:2015-05 for drinking water cold and hot up to 85°C, Product group P2
	NSF 61 cold and hot up to 82 °C
	ACS (DGS/VS4 n°99/217 dated 12/04/1999 and DGS/VS4 n°2000/232 dated 27/04/2000)
	AS/NZS 4020:2018
	D.M. 06/04/04 n°174
	DVGW EN 681-1 WA-WB-WC-WD
	DVGW W534 cold and warm drinking water
	KIWA (BRL-K17504) for cold and hot drinking water
	ÖNORM (B 5014-1) for drinking water for cold and hot water up to 85°C
Food & Beverage	WRAS (BS 6920-1:2000 specification) cold and hot up to 85 °C
	3-A Sanitary Standard N°18-03 Class II
	FDA CFR 21 - 177.2600 "Rubber articles intended for repeated use" a) - f)
	NSF 51 for all food contact types up to 100°C
	BfR XXI Category 4 (Migration test BfR XXI Category 3)
	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
	LFGB §30/31
	Regulation EC 1935/2004 (excl. article 15) and EC Regulation 2023/2006 (GMP)
Medical / Pharma	SR 817.023.21
	GB 4806.11-2016 (Migration test)
Oil & Gas	USP Class VI Chapter <87> (In Vitro) and Chapter <88> (In Vivo) - 121°C
Specific substance statements	DVGW CERT ZP 5101:2021-12 H ₂ mean permeability 1049 (cm ³ x mm) / (m ² x 24 h x bar) / 23°C
	ADI free (free of Animal Derived Ingredients) resp. TSE/BSE related substances
	Latex free
	PAH Category 1 (AfPS GS 2019:01)
	PAH Class I (AfPS GS 2019:01)



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