Q&P

Quality & Precision Sealing

FICHAS

RUBBERS

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Material Data Sheet AF101-B85

AFLAS* AF101 – black (bisphenol cross linked)

General

AF101-B85 is a Tetrafluoroethylene/Propylene copolymere (TFE/P), commonly referred to as FEPM or AFLAS*. AFLAS* has a very high resistance to hydraulic fluids (incl. Alkyl-Acryl-Phosphate Esters), all break fluids (on glycol, mineral and silicone base), acids, steam and hot water, sour oils/gases (H2S) and heavily formulated oils with amine additives.

Physical properties

Density:	DIN 53479	g/cm^3	1,68
Hardness at 20°C:	DIN 53505	Shore A	85 ±5
Tensile strength:	DIN 53504	N/mm^2	7,2 ±15%
Elongation at break:	DIN 53504	%	236 ±20%
Modulus 100%:	DIN 53504	N/mm	4,2 ±30%
Tear strength:	DIN 53507B	N/mm	7,2
Compression set: 70h/RT	DIN 53517A	%	27,0 ±20%
Compression set: 22h/70°C	DIN 53517A	%	24,7 ±20%
Compression set: 22h/100°C	DIN 53517A	%	19,8 ±20%
Compression set: 24h/175°C	DIN 53517	%	24,5 ±20%
Min. service temperature:		°C	-15
Max. service temperature:		°C	210
Short time max. service temp. in air:		°C	280

Chemical resistance

Water up to 90°	R	Ozone	R
Steam	R	Break Fluids	R
HFA, HFB fluids	R	Solvents	S
HFC, HFD fluids	R	Air up to 200°	R
Mineral oils	R		
Vegetable oils	R		
Fuels	S		

Key to chemical resistance: R = resistant S = suitable U = unsuitable

Main application

Static and dynamic seals (standard and special), wipers, O-rings, flange seals, rotary seals, rubber energizers (preload elements). Applications where high temp. and/or chemical resistance is required,

oil and gas industry.

Analysis and Evaluation

The mentioned properties are only valid for test pieces of the corresponding ISO, DIN and ASTM standards. They cannot be directly related to seals, gaskets and other sealing products and should be used only as a general guide

*) AFLAS is a reg. trademark of Asahi Glass Co./Japan.

Material Data Sheet E131-B85

EPDM E131 – black (peroxide cross linked)

General

E131-B85 is a black Ethylene Propylene Rubber, commonly referred to as EPDM. This material is often used in hot water steam applications as well as in fire resistant fluids where synthetic oils are used. EPDM materials are also used in bases, acids and alcohols. EPDM is also used for brake fluids, but we recommend observing local safety-regulations before installing an EPDM seal in breaking systems. EPDM is not resistant to mineral- vegetable- and animal oils.

Physical properties

Density:	DIN 53479	g/cm^3	1,22
Hardness at 20°C:	DIN 53505	Shore A	85 ±5
Tensile strength:	DIN 53504	N/mm^2	12,8 ±15%
Elongation at break:	DIN 53504	%	200 ±20%
Modulus 100%:	DIN 53504	N/mm	6,2 ±30%
Tear strength:	DIN 53507B	N/mm	3,2
Compression set: 70h/RT:	DIN 53517A	%	20,9 ±20%
Compression set: 22h/70°C:	DIN 53517A	%	20,7 ±20%
Compression set: 22h/100°C:	DIN 53517A	%	19,8 ±20%
Compression set: 22h/150°C:	DIN 53517A	%	40,9 ±20%
Min. service temperature:		°C	-50
Max. service temperature:		°C	130

Chemical resistance

Water up to 90°	R	Biodegradeable oils	U
Steam up to 180°	R	Fuels	U
HFA, HFB, HFD-S fluids	U	Ozone, Oxygen	R
HFC, HFD-R fluids	R	Alcohols	R
Mineral oils	U	Ketones, Esters	R
Vegetable oils	U	Air up to 100°	R
Silicone oils	S	Air up to 150°	U

Key to chemical resistance: **R = resistant** **S = suitable** **U = unsuitable**

Main application

Static and dynamic seals (standard and special), wipers, O-rings, flange seals, rotary seals, rubber energizers (preload elements); cleaning and washing technology.

Analysis and Evaluation

The mentioned properties are only valid for test pieces of the corresponding ISO, DIN and ASTM standards. They cannot be directly related to seals, gaskets and other sealing products and should be used only as a general guide.

Material Data Sheet E133-B85

EPDM-KTW-W270 E133 – black (peroxide cross linked)

General

E133-B85 is a black Ethylene Propylene Rubber, commonly referred to as EPDM. This material is often used in hot water steam applications as well as in fire resistant fluids where synthetic oils are used. EPDM materials are also used in bases, acids and alcohols. EPDM is also used for brake fluids, but we recommend to observe local safety-regulations before installing an EPDM seal in breaking systems. EPDM is not resistant to mineral- vegetable- and animal oils.

Physical properties

Density:	DIN 53479	g/cm³	1,18	±0,03
Hardness at 23°C:	DIN 53505	Shore A	88	±5
100% Modulus:	DIN 53504	N/mm²	14,6	9
Tensile strength:	DIN 53504	N/mm²	19,7	9
Elongation at break:	DIN 53504	%	168,0	9
Tear resistance:	DIN 53515	kN/m	63,9	9
Rebound resiliance:	DIN 53512	6	47,0	9
Compression set, 24h, 70°C, 25%:	DIN 53517	%	5,5	9
Compression set, 24h, 100°C, 25%:	DIN 53517	%	2,6	9

* mentioned values are subject to a tolerance of +/- 25%

Temperature range: **-45°C to 120°C**

Chemical resistance

Resistant to:	Water up to 90°C, HFC, HFD-R Fluids, Ozone, Oxygen, Alcohols, Ketones, Esters, Air up to 100°C
Not Resistant to:	Steam up to 180°C, HFA, HFB, HFD-S Fluids, Mineral Oils, Vegetable Oils, Biodegradable Oils, Fuels, Air up to 150°C

Main application

Static and dynamic seals (standard and special), wipers, O-rings, flange seals, rotary seals, rubber energizers (preload elements); cleaning and washing technology; applications where KTW and W270 requirements are needed.

Analysis and Evaluation

Values mentioned above are based on several tests performed during development and production of the material. Tests have been performed on standard test pieces specified within the relevant standard within the laboratory. Tests performed on any other pieces which are not related to the corresponding standard or made out of any (semi)finished part or any other part deviating in production process, dimension or age of the material from above may result in different values. The data represent our present empirical values and do not disengage the processor or user from his obligation to examine the usage of the material for his specific application.
We reserve the right to update this data sheet from time to time if new empirical values are available. Errors and omissions excepted. B1!/

Material Data Sheet E132-W85

EPDM-FDA E132 – white (sulphur cross linked)

General

E132-W85 is a white Ethylene Propylene Rubber, commonly referred to as EPDM. This material is often used in hot water steam applications as well as in fire resistant fluids where synthetic oils are used. EPDM materials are also used in bases, acids and alcohols. EPDM is also used for brake fluids, but we recommend observing local safety-regulations before installing an EPDM seal in breaking systems. EPDM is not resistant to mineral- vegetable- and animal oils.

EPDM-FDA E132 – white is approved for the use of applications in contact with foodstuff.

Physical properties

Density:	DIN 53479	g/cm^3	1,39
Hardness at 20°C:	DIN 53505	Shore A	85 ±5
Tensile strength:	DIN 53504	N/mm^2	7,3 ±15%
Elongation at break:	DIN 53504	%	374 ±20%
Modulus 100%:	DIN 53504	N/mm	4,2 ±30%
Tear strength:	DIN 53507B	N/mm	5,8
Compression set: 70h/RT:	DIN 53517A	%	22,3 ±20%
Compression set: 22h/70°C:	DIN 53517A	%	45,1 ±20%
Compression set: 22h/100°C:	DIN 53517A	%	77,9 ±20%
Min. service temperature:		°C	-50
Max. service temperature:		°C	100
Short time max. service temp. in air:		°C	130

Chemical resistance

Water up to 90°	R	Biodegradeable oils	U
Steam up to 180°	R	Fuels	U
HFA, HFB, HFD-S fluids	U	Ozone, Oxygen	R
HFC, HFD-R fluids	R	Alcohols	R
Mineral oils	U	Ketones, Esters	R
Vegetable oils	U	Air up to 100°	R
Silicone oils	S	Air up to 150°	U

Key to chemical resistance: R = resistant S = suitable U = unsuitable

Material Data Sheet F111-B85

FPM-black F111 (bisphenole cross linked)

General

F111-B85 is a black Fluorocarbon elastomere, commonly referred to as VITON* and FPM. FPM materials have a very high resistance to hydraulic fluids, chemicals and a number of organic compounds and operate in temperatures between -25 to +210°C. F111-B85 is recommended for applications where its outstanding resistance to heat, chemicals, weathering and ozone is required.

Physical properties

Density:	DIN 53479	g/cm^3	1,88
Hardness at 20°C:	DIN 53505	Shore A	85 ±5
Tensile strength:	DIN 53504	N/mm^2	11,5 ±15%
Elongation at break:	DIN 53504	%	180 ±20%
Modulus 100%:	DIN 53504	N/mm	7,3 ±30%
Tear strength:	DIN 53507B	N/mm	6,4
Compression set: 70h/RT	DIN 53517A	%	32,0 ±20%
Compression set: 22h/70°C	DIN 53517A	%	27,3 ±20%
Compression set: 22h/100°C	DIN 53517A	%	25,3 ±20%
Compression set: 24h/175°C	DIN 53517	%	32,8 ±20%
Min. service temperature:		°C	-25
Max. service temperature:		°C	210
Short time max. service temp. in air:		°C	280

Chemical resistance

Water up to 90°	S	Biodegradable oils	R
Steam	U	Hydrocarbons	R
HFA, HFB, HFC Fluids	S	Alcohols	U
HFD-S, R	R	Diesel, Gasoline, Fuels	R
Mineral oils	R	Ozone, Oxygen	R
Vegetable oils	R	Air up to 200°	R
Silicone oils	R		

Key to chemical resistance: **R = resistant** **S = suitable** **U = unsuitable**

Material Data Sheet F800-B85 RGD

FPM-F800-RGD-black (peroxide cross linked)

General

F800-B85-RGD is a black fluorocarbone rubber, with excellent physical characteristics and chemical resistance to the most common hydraulic fluids, sour oils/gases (H2S) and crude oils.
F800-B85-RGD has been optimized to withstand the risk of rapid gas decompression (RGD) or explosive decompression (ED) which is an essential demand in the oil and gas industry.

Physical properties

Density:	DIN 53479	g/cm³	2,26	±0,03
Hardness at 23°C:	DIN 53505	Shore A	88	±5
100% Modulus:	DIN 53504	.! <	4,7	=
Tensile strength:	DIN 53504	.! <	5,9	=
Elongation at break:	DIN 53504	%	193,0	=
Tear resistance:	DIN 53515	kN/m	34,1	=
Rebound resiliance:	DIN 53512	:	8,0	=
Compression set, 24h, 70°C, 25%:	DIN 53517	%	10,7	=
Compression set, 24h, 100°C, 25%:	DIN 53517	%	10,7	=
Compression set, 22h, 175°C, 25%:	DIN 53517	:	11,7	=

* mentioned values are subject to a tolerance of +/- 25%

Temperature range: **-30°C to 210°C**

Chemical resistance

Resistant to: HFD-S and HFD-R Fluid, Mineral Oils, Vegetable Oils, Silicone Oils, Biodegradable Oils, Hydrocarbons, Alcohols, Diesel, Gasoline, Fuels, Ozone, Oxygen, Air up to 200°C

Not Resistant to: Steam

Main application

Static and dynamic seals (standard and special), wipers, O-rings, flange seals, rotary seals, rubber energizers (preload elements). Applications where high temperature and/or chemical resistance is required.

Rapid Gas Decompression (RGD) validation:

The compound has passed the RGD test at MERL UK with the highest possible rating of 0000.
Test conditions, according Norsok M-710, were 10 decompressions cycles with 90% Methane + 10% Carbon dioxide gas at 100° C and 150 bar test pressure. A certificate is available on request.

Analysis and Evaluation

Values mentioned above are based on several tests performed during development and production of the material. Tests have been performed on standard test pieces specified within the relevant standard within the laboratory. Tests performed on any other pieces which are not related to the corresponding standard or made out of any (semi)finished part or any other part deviating in production process, dimension or age of the material from above may result in different values. The data represent our present empirical values and do not disengage the processor or user from his obligation to examine the usage of the material for his specific application.
We reserve the right to update this data sheet from time to time if new empirical values are available. Errors and omissions excepted. V2.0

Material Data Sheet F109-BR85 (genuine VITON®)

FPM F109 – brown (bisphenole cross linked)

General

F109-BR85 is a brown Fluorocarbon elastomere, commonly referred to as VITON® and FPM. FPM materials have a very high resistance to hydraulic fluids, chemicals and a number of organic compounds and operating temperature ranges between -20 to +210°C. F109-BR85 is recommended for applications where its outstanding resistance to heat, chemicals, weathering and ozone is required.

Physical properties

Density:	DIN 53479	g/cm^3	2,44
Hardness at 20°C:	DIN 53505	Shore A	85 ±5
Tensile strength:	DIN 53504	N/mm^2	11,7 ±15%
Elongation at break:	DIN 53504	%	154 ±20%
Modulus 100%:	DIN 53504	N/mm	8,8 ±30%
Tear strength:	DIN 53507B	N/mm	4,2
Compression set: 70h/RT	DIN 53517A	%	14,1 ±20%
Compression set: 22h/70°C	DIN 53517A	%	9,4 ±25%
Compression set: 22h/100°C	DIN 53517A	%	6,0 ±25%
Compression set: 24h/175°C	DIN 53517	%	9,4 ±25%
Min. service temperature:		°C	-20
Max. service temperature:		°C	210
Short time max. service temp. in air:		°C	280

Chemical resistance

Water up to 90°	S	Biodegradable oils	R
Steam	U	Hydrocarbons	R
HFA, HFB, HFC Fluids	S	Alcohols	U
HFD-S, R	R	Diesel, Gasoline, Fuels	R
Mineral oils	R	Ozone, Oxygen	R
Vegetable oils	R	Air up to 200°	R
Silicone oils	R		

Key to chemical resistance: R = resistant S = suitable U = unsuitable

Main application

Static and dynamic seals (standard and special), wipers, O-rings, flange seals, rotary seals, rubber energizers (preload elements). Applications, where high temperature and/or chemical resistance is required.

Analysis and Evaluation

The mentioned properties are only valid for test pieces of the corresponding ISO, DIN and ASTM standards. They cannot be directly related to seals, gaskets and other sealing products and should be used only as a general guide.

Material Data Sheet F110-BR85

FPM-FDA F110 – brown (bisphenole cross linked)

General

F110-BR85 is a brown Fluorocarbon elastomere, commonly referred to as VITON* and FPM. FPM materials have a very high resistance to hydraulic fluids, chemicals and a number of organic compounds and operate in temperatures between -25 to +210°C. F110-BR85 is recommended for applications where its outstanding resistance to heat, chemicals, weathering and ozone is required.

FPM-FDA F110 – brown is approved for the use of applications in contact with foodstuff.

Physical properties

Density:	DIN 53479	g/cm^3	2,62
Hardness at 20°C:	DIN 53505	Shore A	85 ±5
Tensile strength:	DIN 53504	N/mm^2	7,7 ±15%
Elongation at break:	DIN 53504	%	160 ±20%
Modulus 100%:	DIN 53504	N/mm	6,55 ±30%
Tear strength:	DIN 53507B	N/mm	4,3
Compression set: 70h/RT	DIN 53517A	%	-
Compression set: 22h/70°C	DIN 53517A	%	-
Compression set: 22h/100°C	DIN 53517A	%	-
Compression set: 24h/175°C	DIN 53517	%	27 ±20%
Min. service temperature:		°C	-25
Max. service temperature:		°C	210
Short time max. service temp. in air:		°C	280

Chemical resistance

Water up to 90°	S	Biodegradable oils	R
Steam	U	Hydrocarbons	R
HFA, HFB, HFC Fluids	R	Alcohols	U
HFD-S, R	R	Diesel, Gasoline, Fuels	R
Mineral oils	R	Ozone, Oxygen	R
Vegetable oils	R	Air up to 200°	R
Silicone oils	R		

Key to chemical resistance: R = resistant S = suitable U = unsuitable

Main application

Static and dynamic seals (standard and special), wipers, O-rings, flange seals, rotary seals, rubber energizers (preload elements). Applications in the food industry where high temp. and/or chemical resistance is required.

Analysis and Evaluation

The mentioned properties are only valid for test pieces of the corresponding ISO, DIN and ASTM standards. They cannot be directly related to seals, gaskets and other sealing products and should be used only as a general guide.

*) VITON is a reg. Trademark of Du Pont Co./U.S.A.

Material Data Sheet HN112-B85

H-NBR HN112 – black (peroxide cross linked)

General

HN112-B85 is a black hydrogenated acrylnitrile-butadiene-rubber commonly referred to as H-NBR. Due to its good physical characteristics and chemical resistance to the most common hydraulic fluids it is an excellently suitable sealing material for a wide range of applications. H-NBR materials are often used in vegetable and animal oils as well as in highly addivated oils, sour oils/gases (H2S) and crude oils.

Physical properties

Density:	DIN 53479	g/cm^3	1,23
Hardness at 20°C:	DIN 53505	Shore A	85 ±5
Tensile strength:	DIN 53504	N/mm^2	21,7 ±15%
Elongation at break:	DIN 53504	%	215 ±20%
Modulus 100%:	DIN 53504	N/mm	-
Tear strength:	DIN 53507B	N/mm	6,6 ±15%
Compression set: 70h/RT:	DIN 53517A	%	-
Compression set: 22h/70°C:	DIN 53517A	%	20,2 ±20%
Compression set: 22h/100°C:	DIN 53517A	%	22,3 ±20%
Min. service temperature:		°C	-25
Max. service temperature:		°C	150

Chemical resistance

Water up to 90°	R	Diesel Fuel	R
Steam	U	Gasoline Fuel	S
HFA, HFB, HFC Fluids	R	Ozone	R
Mineral oils	R	Alcohols	R
Vegetable oils	R	Air up to 80°	R
Silicone oils	S		
Biodegradable oils	S		

Key to chemical resistance: **R = resistant** **S = suitable** **U = unsuitable**

Main application

Static and dynamic seals (standard and special), wipers, O-rings, flange seals, rotary seals, rubber energizers (preload elements). General application in petroleum fluids, water, greases, mineral oils, oil and gas industry.

Analysis and Evaluation

The mentioned properties are only valid for test pieces of the corresponding ISO, DIN and ASTM standards. They cannot be directly related to seals, gaskets and other sealing products and should be used only as a general guide.

Material Data Sheet HN900-B85-RGD

H-NBR HN900 – black (peroxide cross linked)

General

HN900-B85-RGD is a black hydrogenated acrylnitrile-butadiene-rubber commonly referred to as H-NBR, with excellent physical characteristics and chemical resistance to the most common hydraulic fluids, sour oils/gases ($H_{\&}S$) and crude oils.
HN900-B85-RGD has been optimized to withstand the risk of rapid gas decompression (RGD) or explosive decompression (ED) which is an essential demand in the oil and gas industry.

Physical properties

Density:	DIN 53479	g/cm³	1,3	±0,03
Hardness at 23°C:	DIN 53505	Shore A	86	±5
100% Modulus:	DIN 53504	N/mm²	7,5	<
Tensile strength:	DIN 53504	N/mm²	19,9	<
Elongation at break:	DIN 53504	%	&/8 1	<
Tear resistance:	DIN 53515	kN/m	50,6	<
Rebound resiliance:	DIN 53512	9	25,0	<
Compression set, 24h, 70°C, 25%:	DIN 53517	%	3/ 1	<
Compression set, 24h, 100°C, 25%:	DIN 53517	%	11,5	<
Compression set, 24h, 150°C, 25%:	DIN 53517	9	19,1	<

* mentioned values are subject to a tolerance of +/- 25%

Temperature range: **-20°C to 150°C**

Chemical resistance

Resistant to: Water up to 90°C, HFA, HFB, HFC Fluids, Vegetable Oils, Silicone Oils, Biodegradable Oils, Diesel Fuel, Gasoline Fuel, Mineral Oils, Air up to 80°C

Not Resistant to: Steam up to 140°C, Acetone

Main application

Static and dynamic seals, O-Rings, flange seals, rubber energizers (preload elements) in the oil and gas industry, especially in applications with high gas pressure.

Rapid Gas Decompression (RGD) validation:

The compound has passed the RGD test at MERL UK with the highest possible rating of **0000.**
Test conditions, according Norsok M-710, were 10 decompressions cycles with 90% Methane + 10% Carbon dioxide gas at 100° C and 150 bar test pressure.

Analysis and Evaluation

Values mentioned above are based on several tests performed during development and production of the material. Tests have been performed on standard test pieces specified within the relevant standard within the laboratory. Tests performed on any other pieces which are not related to the corresponding standard or made out of any (semi)finished part or any other part deviating in production process, dimension or age of the material from above may result in different values. The data represent our present empirical values and do not disengage the processor or user from his obligation to examine the usage of the material for his specific application.

We reserve the right to update this data sheet from time to time if new empirical values are available. Errors and omissions excepted. V2.0

Material Data Sheet HN901-B85-RGD-LT

H-NBR HN901-RGD-LT – black (peroxide cross linked)

General

HN901-B85-RGD-LT is a black hydrogenated acrylnitrile-butadiene-rubber commonly referred to as H-NBR, with excellent physical characteristics and chemical resistance to the most common hydraulic fluids, sour oils/gases (H_2S) and crude oils.
HN901-B85-RGD-LT has been optimized to withstand the risk of rapid gas decompression (RGD) or explosive decompression (ED) at low temperature applications in the oil and gas industry.

Physical properties

Density:	DIN 53479	g/cm³	1,39	±0,03
Hardness at 23°C:	DIN 53505	Shore A	83	6
100% Modulus:	DIN 53504	N/mm²	2#3	=
Tensile strength:	DIN 53504	N/mm²	7,8	=
Elongation at break:	DIN 53504	%	)42#)	=
Tear resistance:	DIN 53515	kN/m	30,1	=
Rebound resiliance:	DIN 53512	:	39,0	=
Compression set, 24h, 70°C, 25%:	DIN 53517	%	10,6	=
Compression set, 24h, 100°C, 25%:	DIN 53517	%	11,9	=
Compression set, 24h, 150°C, 25%:	DIN 53517	:	15,6	=

* mentioned values are subject to a tolerance of +/- 25%

Temperature range: **-40°C to 150°C**

Chemical resistance

Resistant to: Water up to 90°C, HFA, HFB, HFC Fluids, Vegetable Oils, Silicone Oils, Biodegradable Oils, Diesel Fuel, Gasoline Fuel, Mineral Oils, Air up to 80°C

Not Resistant to: Steam up to 140°C, Acetone

Main application

Static and dynamic seals, O-Rings, flange seals, rubber energizers (preload elements) in the oil and gas industry, especially in applications with high gas pressure.

Rapid Gas Decompression (RGD) validation:

The compound has passed the RGD test at MERL UK with the highest possible rating of **0000.**
Test conditions, according Norsok M-710, were 10 decompressions cycles with 90% Methane + 10% Carbon dioxide gas at 100° C and 150 bar test pressure.

Analysis and Evaluation

Values mentioned above are based on several tests performed during development and production of the material. Tests have been performed on standard test pieces specified within the relevant standard within the laboratory. Tests performed on any other pieces which are not related to the corresponding standard or made out of any (semi)finished part or any other part deviating in production process, dimension or age of the material from above may result in different values. The data represent our present empirical values and do not disengage the processor or user from his obligation to examine the usage of the material for his specific application.

We reserve the right to update this data sheet from time to time if new empirical values are available. Errors and omissions excepted. V2.0

Material Data Sheet N107-B85

NBR N107 – black (sulphur cross linked)

General

N107-B85 is a black Nitrile Butadiene Rubber commonly referred to as NBR, Nitrile or BUNA. Because of its good physical characteristics and chemical resistance to the most common hydraulic fluids NBR is excellently suitable for sealing material. NBR materials are one of the most used elastomers in sealing applications.

Physical properties

Density:	DIN 53479	g/cm^3	1,32
Hardness at 20°C:	DIN 53505	Shore A	85 ±5
Tensile strength:	DIN 53504	N/mm^2	17,2 ±15%
Elongation at break:	DIN 53504	%	171 ±20%
Modulus 100%:	DIN 53504	N/mm	10,2 ±30%
Tear strength:	DIN 53507B	N/mm	3,3
Compression set: 70h/RT:	DIN 53517A	%	6,0 ±25%
Compression set: 22h/70°C:	DIN 53517A	%	6,7 ±25%
Compression set: 22h/100°C:	DIN 53517A	%	6,8 ±25%
Min. service temperature:		°C	-25
Max. service temperature:		°C	100

Chemical resistance

Water up to 70°	R	Diesel Fuel	R
Water up to 90°	S	Gasoline Fuel	S
Steam	U	Alcohols	R
HFA, HFB, HFC Fluids	R	Ozone, Oxygen	U
HFD Fluids	U	Air up to 100°	R
Mineral / vegetable oils	R	Air up to 150°	U
Silicone oils	S		
Biodegradable oils	S		

Key to chemical resistance: R = resistant S = suitable U = unsuitable

Main application

Static and dynamic seals (standard and special), wipers, O-rings, flange seals, rotary seals, rubber energizers (preload elements). General applications in petroleum fluids, water, greases, mineral oils.

Analysis and Evaluation

The mentioned properties are only valid for test pieces of the corresponding ISO, DIN and ASTM standards. They cannot be directly related to seals, gaskets and other sealing products and should be used only as a general guide.

Material Data Sheet N111-W85

NBR-FDA N111 – white (sulphur cross linked)

General

N111-W85 is a white Nitrile Butadiene Rubber commonly referred to as NBR, Nitrile or BUNA. Because of its good physical characteristics and chemical resistance to the most common hydraulic fluids NBR is excellently suitable for sealing material. NBR materials are one of the most used elastomers in sealing applications. NBR-FDA N111 – white is approved for the use of applications in contact with foodstuff.

Physical properties

Density:	DIN 53479	g/cm^3	1,36
Hardness at 20°C:	DIN 53505	Shore A	85 ±5
Tensile strength:	DIN 53504	N/mm^2	7,9 ±15%
Elongation at break:	DIN 53504	%	305 ±20%
Modulus 100%:	DIN 53504	N/mm	4,5 ±30%
Tear strength:	DIN 53507B	N/mm	7,6
Compression set: 70h/RT:	DIN 53517A	%	21 ±20%
Compression set: 22h/70°C:	DIN 53517A	%	23 ±20%
Compression set: 22h/100°C:	DIN 53517A	%	29 ±20%
Min. service temperature:		°C	-22
Max. service temperature:		°C	100
Short time max. service temp. in air		°C	110

Chemical resistance

Water up to 70°	R	Diesel Fuel	R
Water up to 90°	S	Gasoline Fuel	S
Steam	U	Alcohols	R
HFA, HFB, HFC Fluids	R	Ozone, Oxygen	U
HFD Fluids	U	Air up to 100°	R
Mineral / vegetable oils	R	Air up to 150°	U
Silicone oils	S		
Biodegradable oils	S		

Key to chemical resistance: R = resistant S = suitable U = unsuitable

Main application

Static and dynamic seals (standard and special), wipers, O-rings, flange seals, rotary seals, rubber energizers (preload elements). Applications in the food industry.

Analysis and Evaluation

The mentioned properties are only valid for test pieces of the corresponding ISO, DIN and ASTM standards. They cannot be directly related to seals, gaskets and other sealing products and should be used only as a general guide.

Material Data Sheet S103-BL85

Silicone-blue S103 (FDA, peroxide cross linked)

General

S103-BL85 is a blue Methyl Silicone Rubber, commonly referred to as Silicone. Silicone materials are often used in hot air and in applications where chemicals and foodstuff are in contact with the sealing material. Because of lower mechanical properties Silicone materials should not be used for dynamic applications.

Silicone S103 – blue is approved for the use of applications in contact with foodstuff.

Physical properties

Density:	DIN 53479	g/cm^3	1,54
Hardness at 20°C:	DIN 53505	Shore A	85 ±5
Tensile strength:	DIN 53504	N/mm^2	7,4 ±15%
Elongation at break:	DIN 53504	%	120 ±20%
Modulus 100%:	DIN 53504	N/mm	-
Tear strength:	DIN 53507B	N/mm	10
Compression set: 70h/RT	DIN 53517A	%	-
Compression set: 22h/70°C	DIN 53517A	%	-
Compression set: 22h/100°C	DIN 53517A	%	-
Compression set: 22h/175°C	DIN 53517A	%	18,5 ±20%
Min. service temperature:		°C	-55
Max. service temperature:		°C	180
Short time max. service temp. in air:		°C	270

Chemical resistance

Water up to 90°	R	Fuels	U
Steam below 120°	R	Ozone, Oxygen	R
HFA, HFB, HFC fluids	R	Air up to 200°C	R
HFD-R, -S	R		
Mineral oils	S		
Vegetable oils	R		
Silicone oils	U		

Key to chemical resistance: **R = resistant** **S = suitable** **U = unsuitable**

Main application

Static and dynamic seals (standard and special), wipers, O-rings, flange seals, rotary seals, rubber energizers (preload elements). Due to its low mechanical properties it should be used for static applications only. Chemical and food industry.

Analysis and Evaluation

The mentioned properties are only valid for testpieces of the corresponding ISO, DIN and ASTM standards. They cannot be directly related to seals, gaskets and other sealing products and should be used only as a general guide.

Material Data Sheet S102-R85

Silicone S102 - red (FDA, peroxide cross linked)

General

S102-R85 is a red Methyl Silicone Rubber, commonly referred to as Silicone. Silicone materials are often used in hot air and in applications, where chemicals and foodstuff are in contact with the sealing material. Because of lower mechanical properties Silicone materials should not be used for dynamic applications.

Silicone S102 – red is approved for the use of applications in contact with foodstuff.

Physical properties

Density:	DIN 53479	g/cm^3	1,54
Hardness at 20°C:	DIN 53505	Shore A	85 ±5
Tensile strength:	DIN 53504	N/mm^2	7,4 ±15%
Elongation at break:	DIN 53504	%	120 ±20%
Modulus 100%:	DIN 53504	N/mm	-
Tear strength:	DIN 53507B	N/mm	10
Compression set: 70h/RT	DIN 53517A	%	10,8 ±25%
Compression set: 22h/70°C	DIN 53517A	%	10,6 ±25%
Compression set: 22h/100°C	DIN 53517A	%	6,8 ±25%
Compression set: 22h/175°C	DIN 53517A	%	20,4 ±20%
Min. service temperature:		°C	-55
Max. service temperature:		°C	210
Short time max. service temp. in air:		°C	270

Chemical resistance

Water up to 90°	R	Fuels	U
Steam below 120°	R	Ozone, Oxygen	R
HFA, HFB, HFC fluids	R	Air up to 200°C	R
HFD-R, -S	R		
Mineral oils	S		
Vegetable oils	R		
Silicone oils	U		

Key to chemical resistance: **R = resistant** **S = suitable** **U = unsuitable**

Main application

Static and dynamic seals (standard and special), wipers, O-rings, flange seals, rotary seals, rubber energizers (preload elements). Due to its low mechanical properties it should be used for static applications only. Chemical and food industry.

Analysis and Evaluation

The mentioned properties are only valid for test pieces of the corresponding ISO, DIN and ASTM standards. They cannot be directly related to seals, gaskets and other sealing products and should be used only as a general guide.

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