FREUDENBERG
SEALING TECHNOLOGIES

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Physical properties	nominal range	typical values	
Density DIN EN ISO 1183-1, 23 °C	1.23 ±0.02	1.23	g/cm³
Hardness DIN ISO 7619-1, Shore A, 23 °C	75 ±5	77	Shore
Modulus 100 %, DIN 53504, S2, 23 °C	---	7.1	MPa
Tensile strength DIN 53504, S2, 23 °C	> 15	18	MPa
Elongation at break DIN 53504, S2, 23 °C	> 210	250	%
Compression set DIN ISO 815, Slab B, 24 h, 70 °C, 25 %	---	14	%
Compression set DIN ISO 815, Slab B, 24 h, 100 °C, 25 %	---	18	%
Low Temperature DIN 53765, DSC	---	-38	°C
Ozone Resistance ISO 1431-1, part A, 40 °C, 72 h, 500 ppb, 20% Dehnung	---	0	Rating
Abrasion 10, DIN 53516	---	99	mm³
Low temperature test DIN ISO 2921, TR10	---	-33	°C

Temperature range

static: -45°C to 100°C
dynamic: -35°C to 100°C

Declarations of conformity

This overview is purely informative and does not constitute a declaration of conformity (DoC). Please refer to the actual declaration of conformity (DoC) including the conditions and its validity period.

Country	Part	Remark	Expires
Info ROHS and ELV		EU 2000/53 (ELV) including EU 2011/65 and EU2015/863 (ROHS III)	see DoC

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Change after aging in Air: 24h/100°C		Typ. values		
		Base value	After aging	difference
Compression set (DIN ISO 815, Slab B, 25 %)	%		18	

Change after aging in Air: 168h/100°C		Typ. values		
		Base value	After aging	difference
Density (DIN EN ISO 1183-1, 23 °C)	g/cm³	1.2	1.2	1 %
Hardness (DIN ISO 7619-1, Shore A, 23 °C)	Shore	74	82	8
Modulus (100 %, DIN 53504, S2, 23 °C)	MPa	6.1	9	48 %
Tensile strength (DIN 53504, S2, 23 °C)	MPa	18.7	19.8	6 %
Elongation at break (DIN 53504, S2, 23 °C)	%	268	223	-17 %
Compression set (DIN ISO 815, Slab B, 25 %)	%		45	
volume change (DIN ISO 1817)	%		-4.6	
weight change	%		-3.6	
Quellung längs (S2-Stab)	%		-1.7	

Change after aging in Fuchs Lubritech Gleitmo 585 K: 168h/100°C		Typ. values		
		Base value	After aging	difference
Density (DIN EN ISO 1183-1, 23 °C)	g/cm³	1.2	1.2	0 %
Hardness (DIN ISO 7619-1, Shore A, 23 °C)	Shore	74	80	6
Modulus (100 %, DIN 53504, S2, 23 °C)	MPa	6.1	8.4	38 %
Tensile strength (DIN 53504, S2, 23 °C)	MPa	18.7	19.4	4 %
Elongation at break (DIN 53504, S2, 23 °C)	%	268	219	-18 %
Compression set (DIN ISO 815, Slab B, 25 %)	%		47	
volume change (DIN ISO 1817)	%		-4	
weight change	%		-3.7	
Quellung längs (S2-Stab)	%		-1.5	

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Change after aging
in Fuchs Lubritech Stabyl EOS E2: 168h/100°C

		Typ. values		
		Base value	After aging	difference
Density (DIN EN ISO 1183-1, 23 °C)	g/cm³	1.2	1.2	-1 %
Hardness (DIN ISO 7619-1, Shore A, 23 °C)	Shore	74	72	-2
Modulus (100 %, DIN 53504, S2, 23 °C)	MPa	6.1	7	15 %
Tensile strength (DIN 53504, S2, 23 °C)	MPa	18.7	18.5	-1 %
Elongation at break (DIN 53504, S2, 23 °C)	%	268	222	-17 %
Compression set (DIN ISO 815, Slab B, 25 %)	%		44	
volume change (DIN ISO 1817)	%		1.6	
weight change	%		0.5	
Quellung längs (S2-Stab)	%		-0.4	

Change after aging
in Fuchs Stabyl LT 50: 168h/100°C

		Typ. values		
		Base value	After aging	difference
Density (DIN EN ISO 1183-1, 23 °C)	g/cm³	1.2	1.2	-1 %
Hardness (DIN ISO 7619-1, Shore A, 23 °C)	Shore	74	73	-1
Modulus (100 %, DIN 53504, S2, 23 °C)	MPa	6.1	7.6	25 %
Tensile strength (DIN 53504, S2, 23 °C)	MPa	18.7	20.8	11 %
Elongation at break (DIN 53504, S2, 23 °C)	%	268	259	-3 %
Compression set (DIN ISO 815, Slab B, 25 %)	%		43	
volume change (DIN ISO 1817)	%		5.9	
weight change	%		4.5	
Quellung längs (S2-Stab)	%		1.4	

Change after aging
in Hyspin AWH-M32: 96h/100°C

		Typ. values		
		Base value	After aging	difference
Hardness (DIN EN ISO 48-4, Shore A)	Shore	76	82	6
Micro hardness (DIN ISO 48)	IRHD	78.6	83	4
volume change (DIN ISO 1817)	%		-5.5	
weight change	%		-5.1	
Modulus (20 %, DIN 53504)	MPa	1.7	2.1	0
Modulus (100 %, DIN 53504)	MPa	7.8	9.2	1
Tensile strength (DIN 53504)	MPa	18.9	19.1	0
Elongation at break (DIN 53504)	%	244	225	-19

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Change after aging in Hyspin AWH-M32: 168h/100°C

		Typ. values		
		Base value	After aging	difference
Hardness (DIN EN ISO 48-4, Shore A)	Shore	76	82.5	7
Micro hardness (DIN ISO 48)	IRHD	78.6	83	4
volume change (DIN ISO 1817)	%		-5.4	
weight change	%		-5.2	
Modulus (20 %, DIN 53504)	MPa	1.7	2.1	0
Modulus (100 %, DIN 53504)	MPa	7.8	9.2	1
Tensile strength (DIN 53504)	MPa	18.9	18.9	0
Elongation at break (DIN 53504)	%	244	213	-31

Change after aging in Klüberplex BEM 41-141: 168h/100°C

		Typ. values		
		Base value	After aging	difference
Density (DIN EN ISO 1183-1, 23 °C)	g/cm³	1.2	1.2	1 %
Hardness (DIN ISO 7619-1, Shore A, 23 °C)	Shore	74	78	4
Modulus (100 %, DIN 53504, S2, 23 °C)	MPa	6.1	8.1	33 %
Tensile strength (DIN 53504, S2, 23 °C)	MPa	18.7	19.8	6 %
Elongation at break (DIN 53504, S2, 23 °C)	%	268	225	-16 %
Compression set (DIN ISO 815, Slab B, 25 %)	%		48	
volume change (DIN ISO 1817)	%		-3.8	
weight change	%		-2.6	
Quellung längs (S2-Stab)	%		-0.9	

Change after aging in Mobil Mobilux EP 2: 168h/70°C

		Typ. values		
		Base value	After aging	difference
Hardness (DIN ISO 7619-1, Shore A)	Shore	78	80	2
Modulus (100 %, DIN 53504)	MPa	7	9.2	31 %
Tensile strength (DIN 53504)	MPa	18.7	19.3	3 %
Elongation at break (DIN 53504)	%	270	234	-13 %
volume change (DIN 53521)	%		-2.3	

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Change after aging
in Mobil Mobilux EP 2: 72h/100°C

		Typ. values		
		Base value	After aging	difference
Hardness (DIN ISO 7619-1, Shore A)	Shore	78	80	2
Modulus (100 %, DIN 53504)	MPa	7	10.4	49 %
Tensile strength (DIN 53504)	MPa	18.7	18	-4 %
Elongation at break (DIN 53504)	%	270	176	-35 %
volume change (DIN 53521)	%		-2.4	

Change after aging
in Mobil SHC Grease 460 WT: 168h/100°C

		Typ. values		
		Base value	After aging	difference
Density (DIN EN ISO 1183-1, 23 °C)	g/cm³	1.2	1.2	1 %
Hardness (DIN ISO 7619-1, Shore A, 23 °C)	Shore	74	78	4
Modulus (100 %, DIN 53504, S2, 23 °C)	MPa	6.1	9.5	56 %
Tensile strength (DIN 53504, S2, 23 °C)	MPa	18.7	19.6	5 %
Elongation at break (DIN 53504, S2, 23 °C)	%	268	198	-26 %
volume change (DIN ISO 1817)	%		-1	
weight change	%		-0.4	
Compression set (DIN ISO 815, Slab B, 25 %)	%		35	
Quellung längs (S2-Stab)	%		-0.3	

Change after aging
in Mobil SHC Grease 681 WT: 70h/100°C

		Typ. values		
		Base value	After aging	difference
mass change (DIN ISO 1817)	%		-1.1	
volume change (DIN ISO 1817)	%		-1.6	
Hardness (DIN ISO 7619-1, Shore A, 23 °C)	Shore	79	78	-1
Modulus (100 %, DIN 53504, S2, 23 °C)	MPa	8.1	8.5	5 %
Tensile strength (DIN 53504, S2, 23 °C)	MPa	18.6	20.3	9 %
Elongation at break (DIN 53504, S2, 23 °C)	%	240	252	5 %

Change after aging
in Mobil SHC Grease 681 WT: 168h/100°C

		Typ. values		
		Base value	After aging	difference
mass change (DIN ISO 1817)	%		-0.6	
volume change (DIN ISO 1817)	%		-1.2	
Hardness (DIN ISO 7619-1, Shore A, 23 °C)	Shore	79	78	-1
Modulus (100 %, DIN 53504, S2, 23 °C)	MPa	8.1	8.6	6 %
Tensile strength (DIN 53504, S2, 23 °C)	MPa	18.6	20.2	9 %
Elongation at break (DIN 53504, S2, 23 °C)	%	240	256	7 %

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Change after aging
in Molykote Longterm 2 plus: 168h/100°C

		Typ. values		
		Base value	After aging	difference
Density (DIN EN ISO 1183-1, 23 °C)	g/cm³	1.2	1.2	0 %
Hardness (DIN ISO 7619-1, Shore A, 23 °C)	Shore	74	79	5
Modulus (100 %, DIN 53504, S2, 23 °C)	MPa	6.1	6.9	13 %
Tensile strength (DIN 53504, S2, 23 °C)	MPa	18.7	19.7	5 %
Elongation at break (DIN 53504, S2, 23 °C)	%	268	263	-2 %
Compression set (DIN ISO 815, Slab B, 25 %)	%		48	
volume change (DIN ISO 1817)	%		-1.9	
weight change	%		-1.8	
Quellung längs (S2-Stab)	%		-0.6	

Change after aging
in Shell Gadus S5 V110 KP 1,5: 1680h/70°C

		Typ. values		
		Base value	After aging	difference
Density (DIN EN ISO 1183-1)	g/cm³	1.2		
Modulus (100 %, DIN 53504, S2)	MPa	2.2		
Hardness (DIN 53505, Shore A)	Shore	77	76	-1
Tensile strength (DIN 53504)	MPa	22.8	15.8	-31 %
Elongation at break (DIN 53504)	%	632	234	-63 %
volume change (DIN ISO 1817)	%		-5.3	

Change after aging
in Shell Rhodina Grease BBZ: 168h/100°C

		Typ. values		
		Base value	After aging	difference
Density (DIN EN ISO 1183-1, 23 °C)	g/cm³	1.2	1.2	-1 %
Hardness (DIN ISO 7619-1, Shore A, 23 °C)	Shore	74	73	-1
Modulus (100 %, DIN 53504, S2, 23 °C)	MPa	6.1	8.3	36 %
Tensile strength (DIN 53504, S2, 23 °C)	MPa	18.7	20.1	7 %
Elongation at break (DIN 53504, S2, 23 °C)	%	268	215	-20 %
volume change (DIN ISO 1817)	%		4.6	
weight change	%		2.4	
Compression set (DIN ISO 815, Slab B, 25 %)	%		38	
Quellung längs (S2 Stab)	%		1.1	

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Change after aging
in Shell Tellus S2 V32: 96h/100°C

		Typ. values		
		Base value	After aging	difference
Hardness (DIN EN ISO 48-4, Shore A)	Shore	76	83.7	8
Micro hardness (DIN ISO 48)	IRHD	78.6	85	
volume change (DIN ISO 1817)	%		-5.9	
weight change	%		-5.2	
Modulus (20 %, DIN 53504)	MPa	1.7	2.4	1
Modulus (100 %, DIN 53504)	MPa	7.8	10	2
Tensile strength (DIN 53504)	MPa	18.9	19.3	0
Elongation at break (DIN 53504)	%	244	204	-40

Change after aging
in Shell Tellus S2 V32: 168h/100°C

		Typ. values		
		Base value	After aging	difference
Hardness (DIN EN ISO 48-4, Shore A)	Shore	76	85	9
Micro hardness (DIN ISO 48)	IRHD	78.6	87	
volume change (DIN ISO 1817)	%		-5.4	
weight change	%		-4.8	
Modulus (20 %, DIN 53504)	MPa	1.7	2.6	1
Modulus (100 %, DIN 53504)	MPa	7.8	11.1	3
Tensile strength (DIN 53504)	MPa	18.9	19.4	1
Elongation at break (DIN 53504)	%	244	185	-59

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No ASTM D2000 properties available

The given values are based on a limited number of tests on standard test pieces (2mm sheets) produced in the laboratory. The data from finished parts can deviate from above values depending on the manufactories process and the component geometry.

The data represents our present empirical values. It is incumbent on the person placing the order to examine whether it is suitable for its intended purpose, before using the product. All questions regarding the guarantee of this product are in line with our terms and conditions, inasmuch as statutory provisons do not plan for something else.

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