KLINGER® GASKET FACTORS

Fibre Reinforced Gasket Materials

KLINGER trusted. worldwide.

	DIN 28090/DIN 28091							ASME		ELECTRICAL AND THERMAL FACTORS					
	Thick-ness	σ_{VO}	$\sigma_{Vu/0.1}$	σ_{BO} (7.2.2)						Average surface resistance	Average specific volume resistance	Average dielectric strength	Average power factor	Average dielectric coefficient	Thermal conductivity
	mm	MPa	MPa	MPa	MPa	MPa	MPa	"m"	"y" stress	ρ_O	ρ_D	E_D	50 Hz	50 Hz	λ
		25 °C	25 °C	50 °C	100 °C	200 °C	300 °C	factor	MPa	Ω	Ω cm	kV/mm	tan δ	ε_r	W/mK
KLINGERSIL® C-4300	1.0	200	15	151	79	45	-	1.3	15	-	-	-	-	-	-
	2.0	200	18	69	45	34	-	3.0	15	2.2x10E12	1.2x10E12	10.0	0.082	7.4	0.39
	3.0	61	20	48	35	22	-	4.0	15	-	-	-	-	-	-
KLINGERSIL® C-4324	1.0	200	12	189	64	40	-	2.2	15	-	-	-	-	-	-
	2.0	200	14	60	38	29	-	2.6	15	1.0x10E13	4.3x10E11	12.0	0.109	9.0	0.50
	3.0	60	20	34	25	21	-	4.1	15	-	-	-	-	-	-
KLINGERSIL® C-4400	1.0	200	18	195	95	50	38	1.2	15	-	-	-	-	-	-
	2.0	200	23	110	80	42	30	1.6	15	1.4x10E12	1.2x10E12	21.6	0.131	9.2	0.42
	3.0	63	24	53	41	24	-	4.0	15	-	-	-	-	-	-
KLINGERSIL® C-4409	1.0	240	39	215	176	120	80	3.0	30	-	-	-	-	-	-
	2.0	230	43	110	80	42	30	3.2	30	-	-	-	-	-	-
	3.0	-	-	-	-	-	-	3.8	30	-	-	-	-	-	-
KLINGERSIL® C-4430	1.0	>240	22	>240	145	81	65	1.1	20	-	-	-	-	-	-
	2.0	200	29	200	120	73	56	1.6	20	4.1x10E13	4.5x10E12	21.3	0.030	6.7	0.38
	3.0	133	29	97	65	40	31	2.2	20	-	-	-	-	-	-
KLINGERSIL® C-4430 plus	1.0	>240	22	>240	145	81	65	1.1	20	-	-	-	-	-	-
	2.0	230	29	230	120	73	56	1.6	20	4.1x10E13	4.5x10E12	21.3	0.030	6.7	0.38
	3.0	133	29	97	65	40	31	2.2	20	-	-	-	-	-	-
KLINGERSIL® C-4500	1.0	220	23	195	120	68	51	1.0	20	-	-	-	-	-	-
	2.0	180	26	110	110	59	43	1.6	20	n.a.	8.0x10E04	n.a.	n.a.	n.a.	0.43
	3.0	100	28	80	55	33	23	2.0	20	-	-	-	-	-	-

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	mm	MPa	MPa	MPa	MPa	MPa	MPa	"m"	"y" stress	ρ_O	ρ_D	E_D	50 Hz	50 Hz	λ
		25 °C	25 °C	50 °C	100 °C	200 °C	300 °C	factor	MPa	Ω	Ω cm	kV/mm	tan δ	ε_r	W/mK
KLINGERSIL® C-4509	1.0	>240	24	195	140	120	97	3.1	30	-	-	-	-	-	-
	2.0	180	28	110	110	59	43	4.4	30	-	-	-	-	-	-
	3.0	-	-	-	-	-	-	6.0	30	-	-	-	-	-	-
KLINGERSIL® C-8200	1.0	225	17	160	70	44	-	2.1	20	-	-	-	-	-	-
	2.0	150	19	110	53	34	-	3.0	20	5.8x10E11	4.1x10E12	17.0	0.228	9.4	-
	3.0	75	21	55	26	17	-	6.2	20	-	-	-	-	-	-
KLINGER®Quantum	1.0	230	19	120	86	62	48	1.1	15	-	-	-	-	-	-
	2.0	158	22	68	56	39	32	2.5	15	7.7x10E12	4.7x10E12	18.5	0.064	6.8	0.44
	3.0	130	25	55	42	33	27	3.8	15	-	-	-	-	-	-
KLINGER®top-sil ML1	1.0	>240	16	240	150	70	55	1.5	15	-	-	-	-	-	-
	2.0	160	21	150	80	60	50	2.2	15	9.3x10E12	3.8x10E12	18.8	0.048	7.3	0.36
	3.0	150	23	110	70	50	30	4.0	15	-	-	-	-	-	-
KLINGER®top-graph 2000	1.0	-	-	-	-	-	-	2.4	20	-	-	-	-	-	-
	2.0	>160	25	120	80	70	60	4.2	20	n.a.	6.7x10E3	n.a.	n.a.	n.a.	0.69
	3.0	-	-	-	-	-	-	6.7	20	-	-	-	-	-	-
KLINGER®CompenSil	1.0	230	9	125	55	36	-	1.0	10	-	-	-	-	-	-
	2.0	95	13	43	28	18	-	2.9	10	-	-	-	-	-	-
	3.0	70	15	30	25	17	-	3.3	10	-	-	-	-	-	-

KLINGER® GASKET FACTORS

PTFE Gasket materials

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	Thick-ness	σ_{VO}	$\sigma_{Vu/0.1}$	σ_{BO} (7.2.2)						Average surface resistance	Average specific volume resistance	Average dielectric strength	Average power factor	Average dielectric coefficient	Thermal conductivity
	mm	MPa	MPa	MPa	MPa	MPa	MPa	"m"	"y" stress	ρ_O	ρ_D	E_D	50 Hz	50 Hz	λ
		25 °C	25 °C	50 °C	100 °C	200 °C	250 °C	factor	MPa	Ω	Ω cm	kV/mm	tan δ	ε_r	W/mK
KLINGER®top-chem 2000	1.0	-	-	-	-	-	-	2.8	12	-	-	-	-	-	-
	2.0	200	21	185	150	125	50	3.2	15	6.9x10E12	2.2x10E12	3.6	0.166	10.6	0.60
	3.0	-	-	-	-	-	-	3.8	18	-	-	-	-	-	-
KLINGER®top-chem 2003	1.0	-	-	-	-	-	-	2.0	8	-	-	-	-	-	-
	2.0	80	13	60	28	15	10	2.7	8	9.0x10E12	2.6x10E12	16.7	0.085	2.8	0.18
	3.0	-	-	-	-	-	-	3.6	10	-	-	-	-	-	-
KLINGER®top-chem 2005	1.0	-	-	-	-	-	-	2.2	10	-	-	-	-	-	-
	2.0	100	28	50	35	20	15	2.8	12	3.1x10E13	3.2x10E13	23.8	0.071	3.2	0.42
	3.0	-	-	-	-	-	-	3.8	12	-	-	-	-	-	-
KLINGER®top-chem 2006	1.0	-	-	-	-	-	-	2.0	12	-	-	-	-	-	-
	2.0	60	10	50	39	25	12	3.1	12	1.0x10E13	1.2x10E13	16.7	0.083	4.2	0.40
	3.0	-	-	-	-	-	-	3.8	15	-	-	-	-	-	-
KLINGER®top-chem 2000soft	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.0	200	21	149	113	68	49	2.6	15	-	-	-	-	-	-
	3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

In general gasket factors provide indicators for the performance of gasket materials for several aspects of physical properties. Above given chart summarizes some of the most common factors used in sealing technology. Figures given as for σ_{Vu} indicate minimum required gasket stress to achieve a tightness level of 0.1 [mg/s*m] at an internal pressure of 40bar nitrogen for room temperature.
The columns σ_{VO} and σ_{BO} show the maximum surface pressure with which the gasket material may be loaded, depending on the operating temperature and thickness of the gasket. In contrast to Qsmax according to EN 13555, the surface pressures specified here are based on a maximum permissible reduction in thickness. The above given m and y factors are related to a tightness level of 0.1 [mg/s*m]. The test is carried out at ambient temperature and nitrogen is being used as the test media.