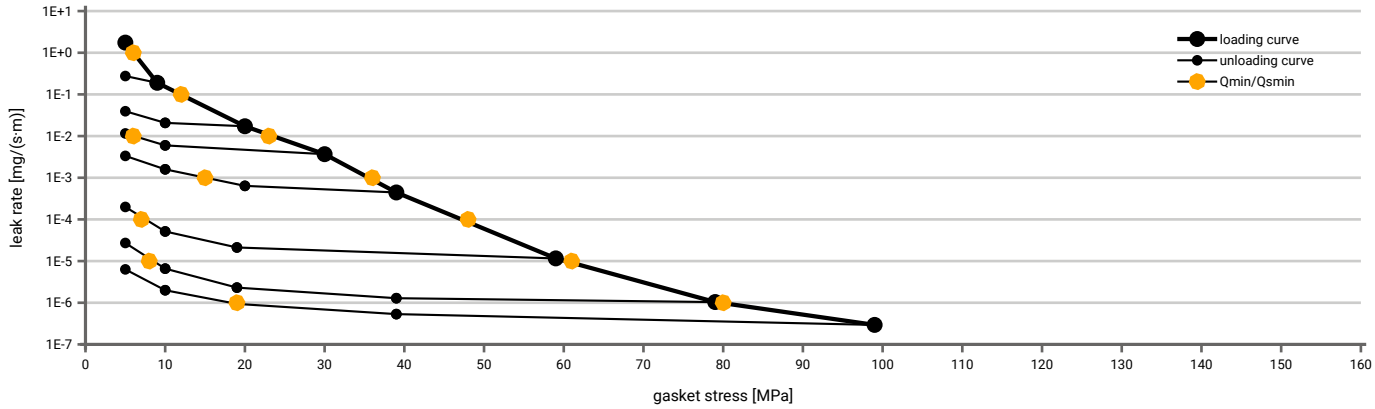
Manufacturer address	KLINGER GmbH, Richard Klinger Str. 37, 65510 Idstein, DE	According to
Product name	KLINGERSIL® C 4409	**DIN EN 13555**
Product dimensions	92 x 49 x 2 mm (DIN EN 1514-1 1997-8)	**2005-2**

Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for p = 10 bar (T = 23 ± 2 °C)

L [mg/(s·m)]	$Q_{min(L)}$ [MPa]	$Q_{smin(L)}$ [MPa]							
		Q_A = 5 [MPa]	Q_A = 10 [MPa]	Q_A = 20 [MPa]	Q_A = 30 [MPa]	Q_A = 40 [MPa]	Q_A = 60 [MPa]	Q_A = 80 [MPa]	Q_A = 100 [MPa]
1E+1	5		5	5	5	5	5	5	5
1E-0	6		5	5	5	5	5	5	5
1E-1	13			5	5	5	5	5	5
1E-2	23				6	5	5	5	5
1E-3	36					15	5	5	5
1E-4	48						8	5	5
1E-5	61							9	5
1E-6	80								19
1E-7									
1E-8									

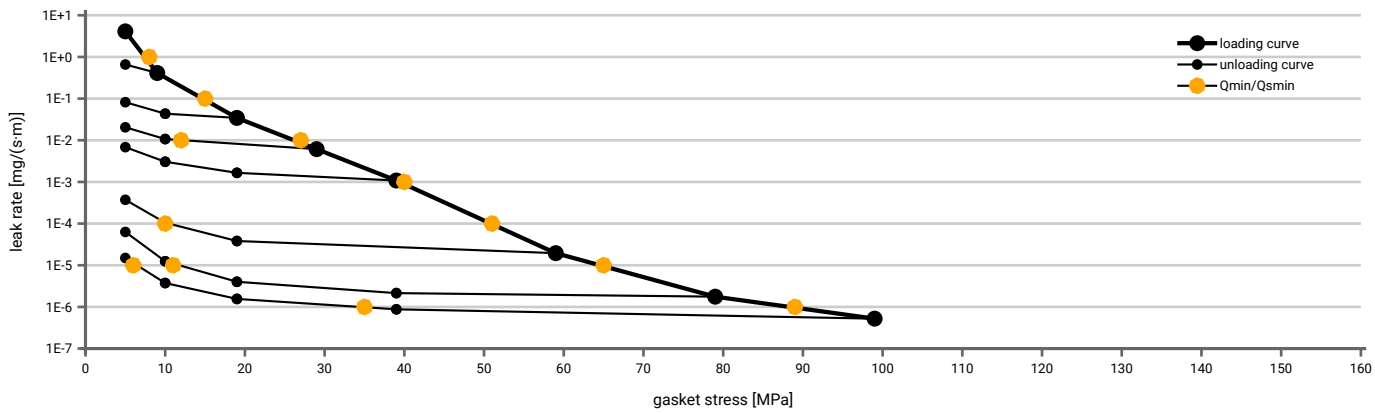
Leakage - 23 ± 2 °C / 10 bar



Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for p = 16 bar (T = 23 ± 2 °C)

L [mg/(s·m)]	$Q_{min(L)}$ [MPa]	$Q_{smin(L)}$ [MPa]							
		Q_A = 5 [MPa]	Q_A = 10 [MPa]	Q_A = 20 [MPa]	Q_A = 30 [MPa]	Q_A = 40 [MPa]	Q_A = 60 [MPa]	Q_A = 80 [MPa]	Q_A = 100 [MPa]
1E+1	5		5	5	5	5	5	5	5
1E-0	8		5	5	5	5	5	5	5
1E-1	16			5	5	5	5	5	5
1E-2	27				12	5	5	5	5
1E-3	40						5	5	5
1E-4	52						10	5	5
1E-5	65							12	6
1E-6	89								35
1E-7									
1E-8									

Leakage - 23 ± 2 °C / 16 bar

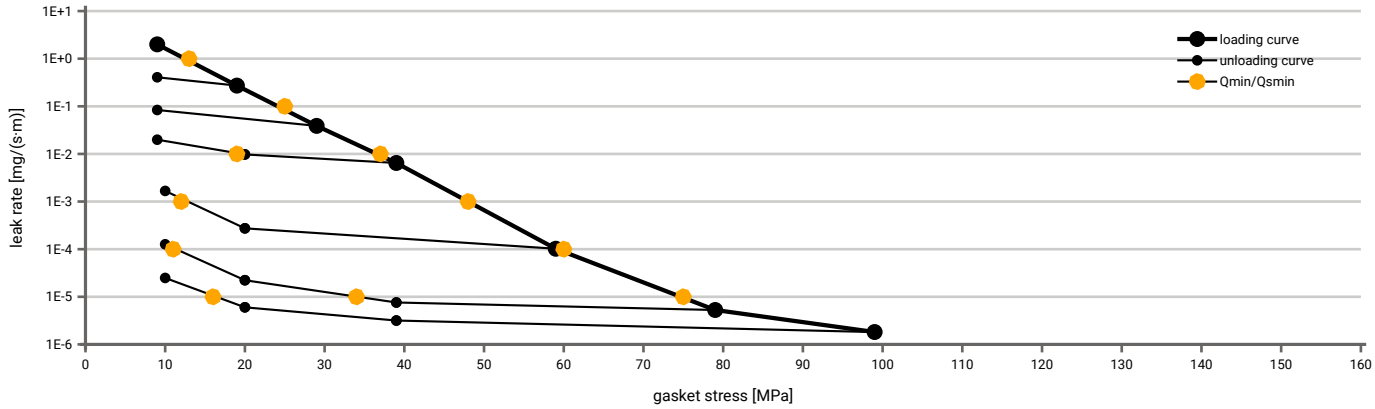


Note: the content of darkened cells was not determined respectively is unnecessary	Rev.-No.: **1**	Creation date of this sheet: **2014-03-26**

Manufacturer address	KLINGER GmbH, Richard Klinger Str. 37, 65510 Idstein, DE	According to **DIN EN 13555 2005-2**
Product name	KLINGERSIL® C 4409	
Product dimensions	92 x 49 x 2 mm (DIN EN 1514-1 1997-8)	

Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for p = 40 bar (T = 23 ± 2 °C)

L [mg/(s·m)]	$Q_{min(L)}$ [MPa]	$Q_{smin(L)}$ [MPa]						
		Q_A = 10 [MPa]	Q_A = 20 [MPa]	Q_A = 30 [MPa]	Q_A = 40 [MPa]	Q_A = 60 [MPa]	Q_A = 80 [MPa]	Q_A = 100 [MPa]
1E+1	10		10	10	10	10	10	10
1E-0	13		10	10	10	10	10	10
1E-1	25			10	10	10	10	10
1E-2	37				20	10	10	10
1E-3	49					13	10	10
1E-4	60						11	10
1E-5	76						35	16
1E-6								
1E-7								
1E-8								

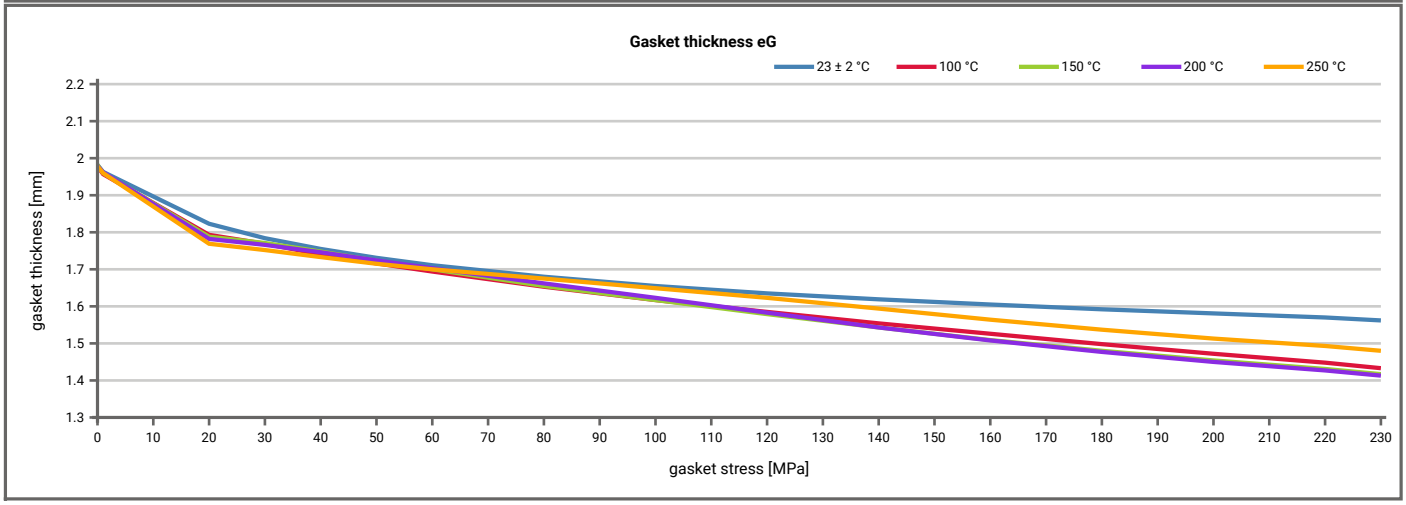


Note: the content of darkened cells was not determined respectively is unnecessary	Rev.-No.: **1**	Creation date of this sheet: **2014-03-26**

Manufacturer address	KLINGER GmbH, Richard Klinger Str. 37, 65510 Idstein, DE	According to **DIN EN 13555 2005-2**
Product name	KLINGERSIL® C 4409	
Product dimensions	92 x 49 x 2 mm (DIN EN 1514-1 1997-8)	

Relaxation ratio P_{QR} for stiffness C = 500 [kN/mm]										
Gasket stress	**23 ± 2 °C**		**Temperature 1 [100 °C]**		**Temperature 2 [150 °C]**		**Temperature 3 [200 °C]**		**Temperature 4 [250 °C]**	
	P_{QR}	**Δe_{Gc} [µm]**	**P_{QR}**	**Δe_{Gc} [µm]**	**P_{QR}**	**Δe_{Gc} [µm]**	**P_{QR}**	**Δe_{Gc} [µm]**	**P_{QR}**	**Δe_{Gc} [µm]**
Stress level 1 [30 MPa]	0.94	15	0.87	33	0.85	38	0.81	49	0.72	72
Stress level 2 [50 MPa]	0.96	17	0.91	38	0.89	46	0.87	55	0.82	78
P_{QR} and Δe_{Gc} at maximum gasket stress to be applied Q_{smax}										
P_{QR} at Q_{smax}	0.99	19	0.92	154	0.86	270	0.84	309	0.80	386
Q_{smax}	230 MPa		230 MPa		230 MPa		230 MPa		230 MPa	

Sekant unloading modulus of the gasket E_G [MPa] and gasket thickness e_G [mm]										
Gasket stress [MPa]	**23 ± 2 °C**		**Temperature 1 [100 °C]**		**Temperature 2 [150 °C]**		**Temperature 3 [200 °C]**		**Temperature 4 [250 °C]**	
	E_G [MPa]	**e_G [mm]**	**E_G [MPa]**	**e_G [mm]**	**E_G [MPa]**	**e_G [mm]**	**E_G [MPa]**	**e_G [mm]**	**E_G [MPa]**	**e_G [mm]**
0	0	1.982	0	1.978	0	1.982	0	1.979	0	1.978
1	0	1.963	0	1.957	0	1.960	0	1.962	0	1.960
20	1014	1.823	1259	1.793	1692	1.788	1822	1.782	2353	1.769
30	1512	1.784	1723	1.769	1979	1.771	2094	1.766	2511	1.752
40	2054	1.755	2128	1.740	2160	1.748	2266	1.746	2591	1.733
50	2560	1.731	2471	1.716	2360	1.723	2421	1.724	2827	1.715
60	3141	1.711	2799	1.694	2580	1.700	2656	1.703	3361	1.700
80	4016	1.680	3509	1.653	3255	1.655	3245	1.662	4040	1.675
100	4951	1.655	4053	1.617	3908	1.617	3860	1.623	4267	1.649
120	5639	1.635	4611	1.585	4349	1.579	4301	1.583	4616	1.623
140	6296	1.619	5126	1.554	4816	1.543	4537	1.543	4908	1.594
160	6826	1.605	5558	1.526	4966	1.509	4797	1.508	5098	1.564
180	7265	1.592	5760	1.498	5185	1.480	4979	1.477	5271	1.537
200	7662	1.581	6036	1.472	5538	1.454	5181	1.450	5558	1.513
220	8105	1.570	6243	1.448	5747	1.431	5444	1.427	5806	1.493
230	8104	1.562	6321	1.433	5825	1.417	5450	1.413	5885	1.480



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