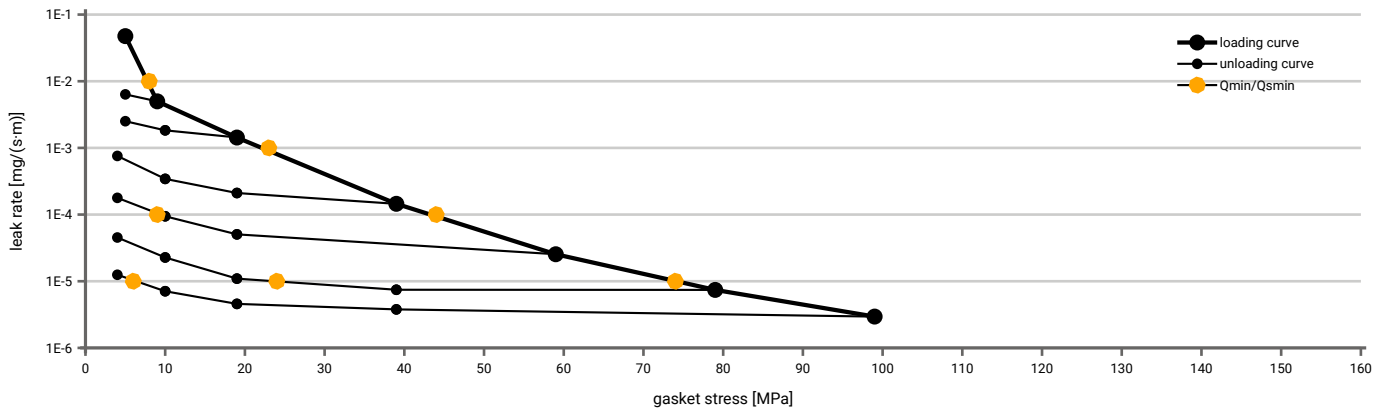
Manufacturer address	KLINGER GmbH, Richard Klinger Str. 37, 65510 Idstein, DE	According to
Product name	KLINGER® top-chem2000	**DIN EN 13555**
Product dimensions	92 x 49 x 2 mm (DIN EN 1514-1 1997-8)	**2014-7**

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 = 40 [MPa]	Q_A = 60 [MPa]	Q_A = 80 [MPa]	Q_A = 100 [MPa]
1E-0	5		5	5	5	5	5	5
1E-1	5		5	5	5	5	5	5
1E-2	8		5	5	5	5	5	5
1E-3	23				5	5	5	5
1E-4	44					10	5	5
1E-5	75						25	7
1E-6								
1E-7								
1E-8								

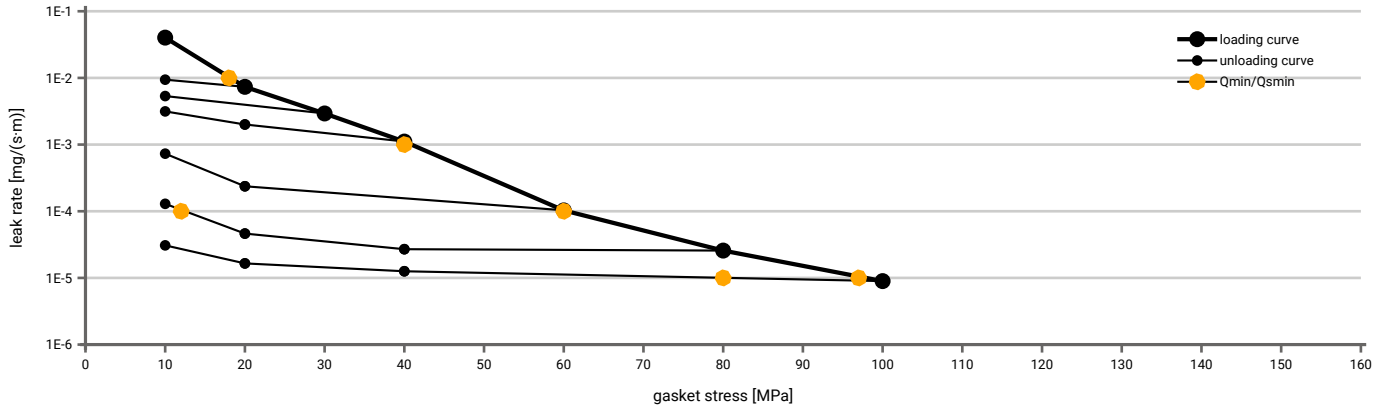
Leakage - 23 ± 2 °C / 10 bar



Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for p = 25 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-0	10		10	10	10	10	10	10
1E-1	10		10	10	10	10	10	10
1E-2	18		10	10	10	10	10	10
1E-3	41					10	10	10
1E-4	60						12	10
1E-5	98							81
1E-6								
1E-7								
1E-8								

Leakage - 23 ± 2 °C / 25 bar



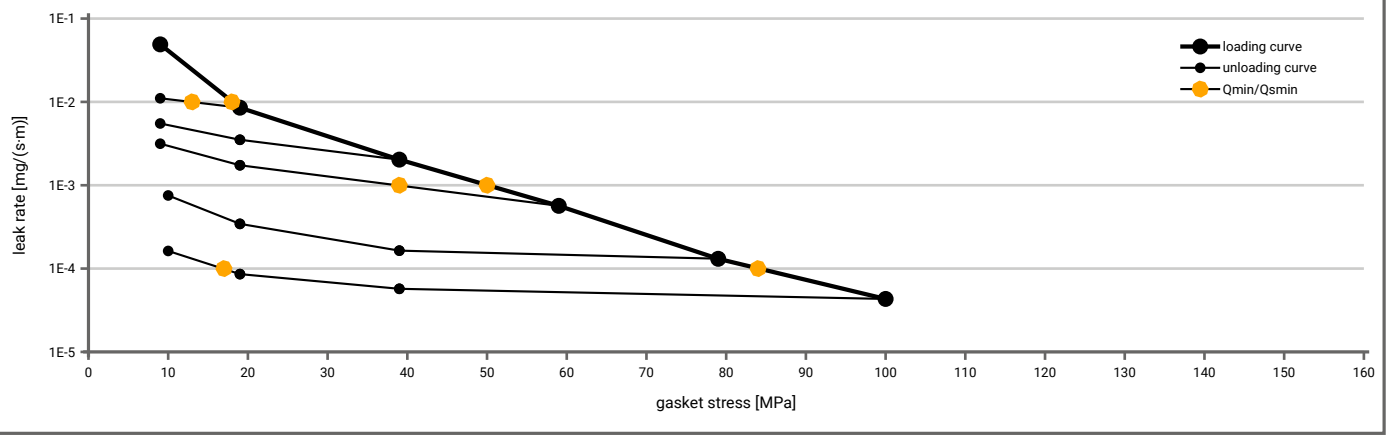
Note: the content of darkened cells was not determined respectively is unnecessary	Rev.-No.: **2**	Creation date of this sheet: **2016-01-14**

Manufacturer address	KLINGER GmbH, Richard Klinger Str. 37, 65510 Idstein, DE	According to
Product name	KLINGER® top-chem2000	**DIN EN 13555**
Product dimensions	92 x 49 x 2 mm (DIN EN 1514-1 1997-8)	**2014-7**

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 = 40 [MPa]	Q_A = 60 [MPa]	Q_A = 80 [MPa]	Q_A = 100 [MPa]
1E-0	10		10	10	10	10	10
1E-1	10		10	10	10	10	10
1E-2	19		14	10	10	10	10
1E-3	51				40	10	10
1E-4	85						18
1E-5							
1E-6							
1E-7							
1E-8							

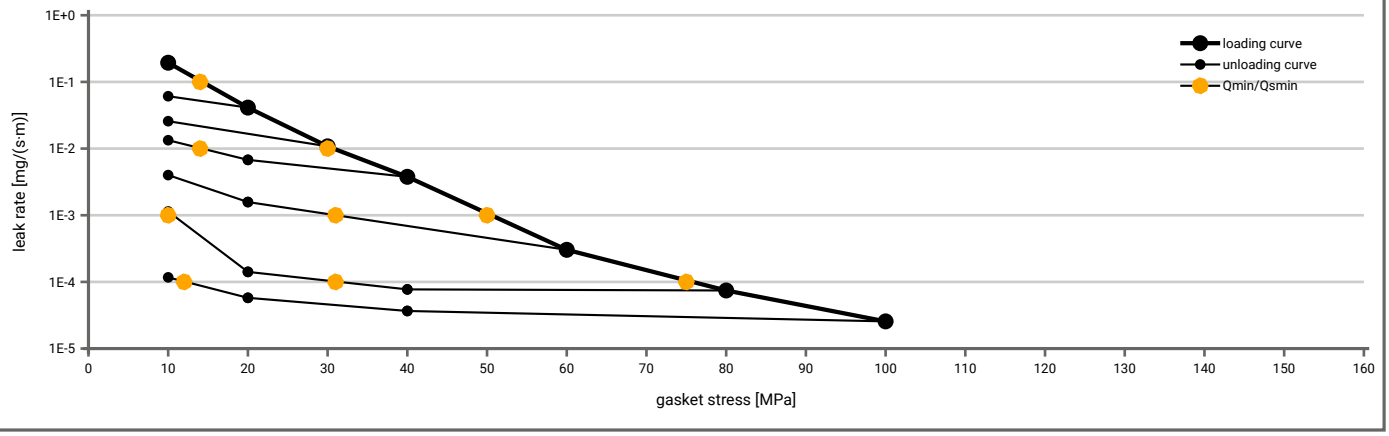
Leakage - 23 ± 2 °C / 40 bar



Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for p = 63 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-0	10		10	10	10	10	10	10
1E-1	14		10	10	10	10	10	10
1E-2	31				14	10	10	10
1E-3	51					31	11	10
1E-4	76						31	12
1E-5								
1E-6								
1E-7								
1E-8								

Leakage - 23 ± 2 °C / 63 bar

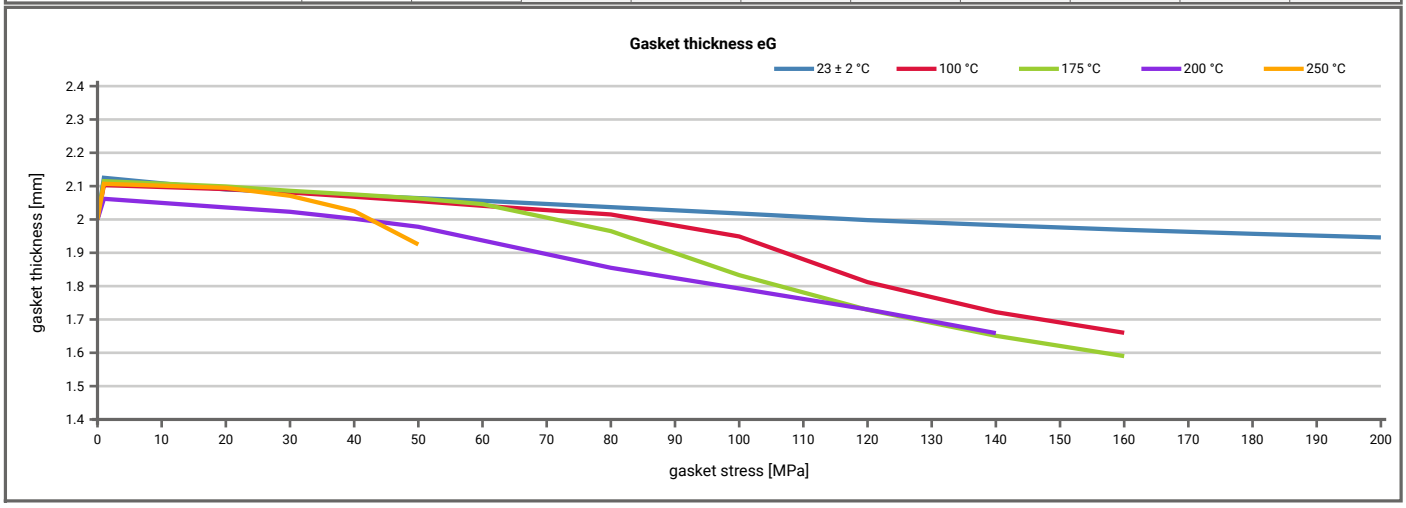


Note: the content of darkened cells was not determined respectively is unnecessary	Rev.-No.: **2**	Creation date of this sheet: **2016-01-14**

Manufacturer address	KLINGER GmbH, Richard Klinger Str. 37, 65510 Idstein, DE	According to **DIN EN 13555 2014-7**
Product name	KLINGER® top-chem2000	
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 [175 °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 [20 MPa]	0.98	3	0.96	7	0.97	6	0.97	5	0.97	5
Stress level 2 [50 MPa]	0.98	8	0.97	15	0.95	23	0.95	23	0.85	63
P_{QR} and Δe_{Gc} at maximum gasket stress to be applied Q_{smax}										
P_{QR} at Q_{smax}	0.96	67	0.76	322	0.75	342	0.69	364	0.85	63
Q_{smax}	200 MPa		160 MPa		160 MPa		140 MPa		50 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 [175 °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	2.000	0	2.000	0	2.000	0	2.000	0	2.000
1	0	2.125	0	2.103	0	2.115	0	2.062	0	2.107
20	5037	2.090	2393	2.091	6959	2.099	4508	2.036	2070	2.095
30	4954	2.082	2697	2.081	5890	2.086	3632	2.023	2903	2.071
40	7576	2.072	3051	2.068	8072	2.075	5202	2.002	2992	2.025
50	7883	2.064	3783	2.055	10425	2.063	4802	1.978	3782	1.925
60	8470	2.056	5005	2.041	6945	2.046	4843	1.937		
80	7810	2.037	4868	2.015	6312	1.965	4680	1.855		
100	11485	2.018	4912	1.949	6131	1.833	5612	1.793		
120	9730	1.998	5860	1.812	6862	1.729	5719	1.730		
140	13448	1.983	6879	1.722	6106	1.651	5567	1.659		
160	11017	1.969	8217	1.660	7237	1.590				
180	14246	1.957								
200	15255	1.946								



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