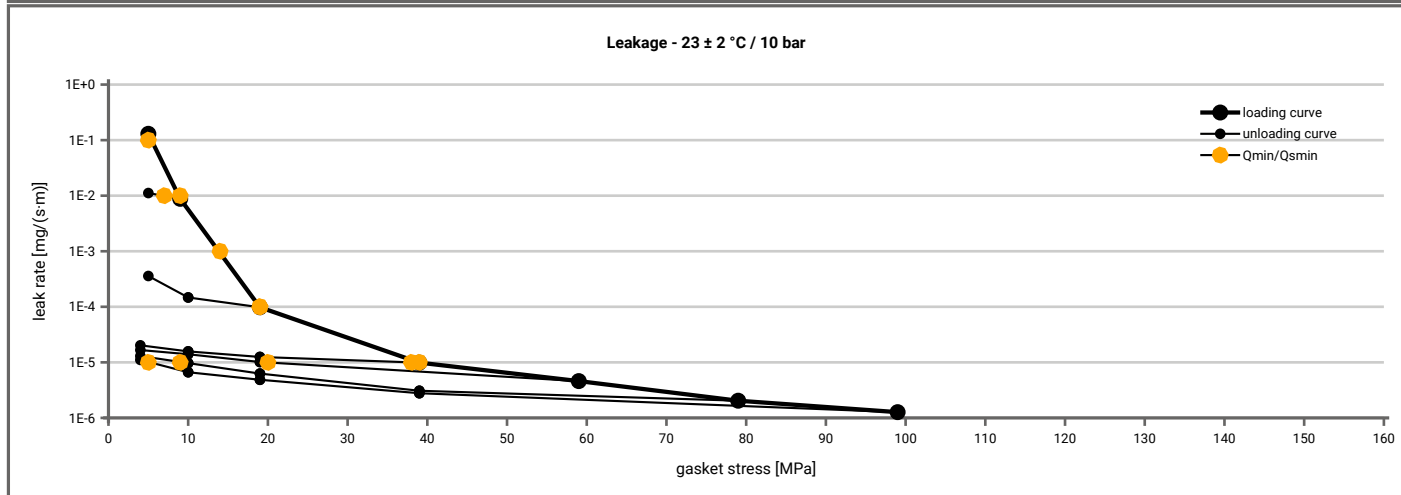
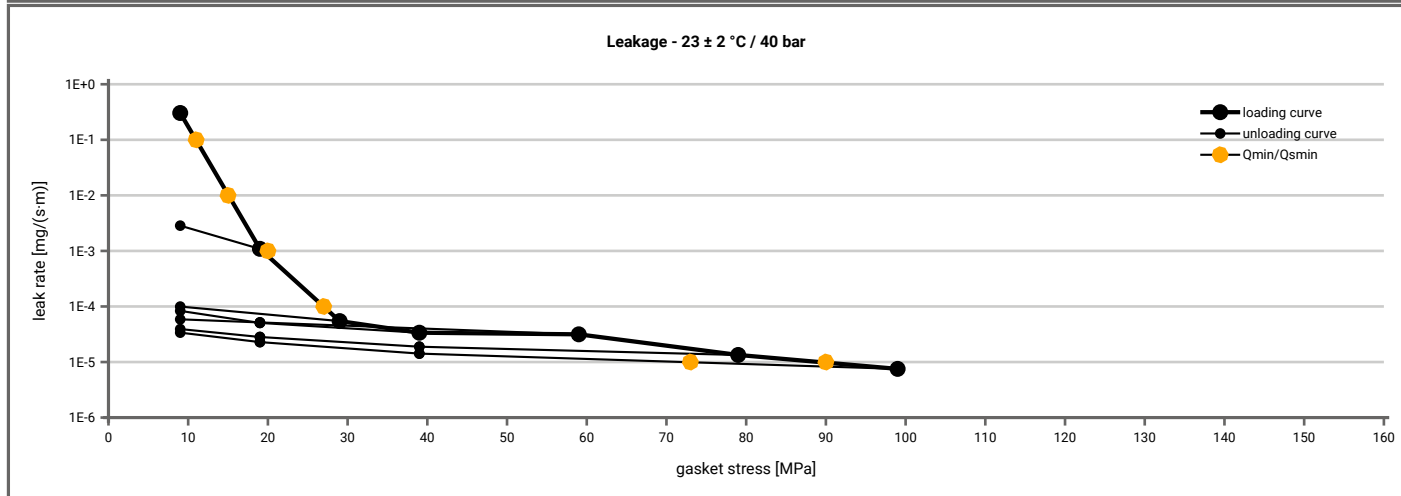


Manufacturer address	KLINGER GmbH, Richard Klinger Str. 37, 65510 Idstein, DE	According to DIN EN 13555 2014-7
Product name	KLINGER® top-chem-2003	
Product dimensions	92 x 49 x 2 mm (DIN EN 1514-1 1997-8)	

Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for $p = 10$ bar ($T = 23 \pm 2$ °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	10		7	5	5	5	5	5
1E-3	15			5	5	5	5	5
1E-4	20			19	5	5	5	5
1E-5	40				39	21	9	6
1E-6								
1E-7								
1E-8								



Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for $p = 40$ bar ($T = 23 \pm 2$ °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	12		10	10	10	10	10	10
1E-2	16		10	10	10	10	10	10
1E-3	20			10	10	10	10	10
1E-4	28			10	10	10	10	10
1E-5	90				10	10	10	10
1E-6								73
1E-7								
1E-8								

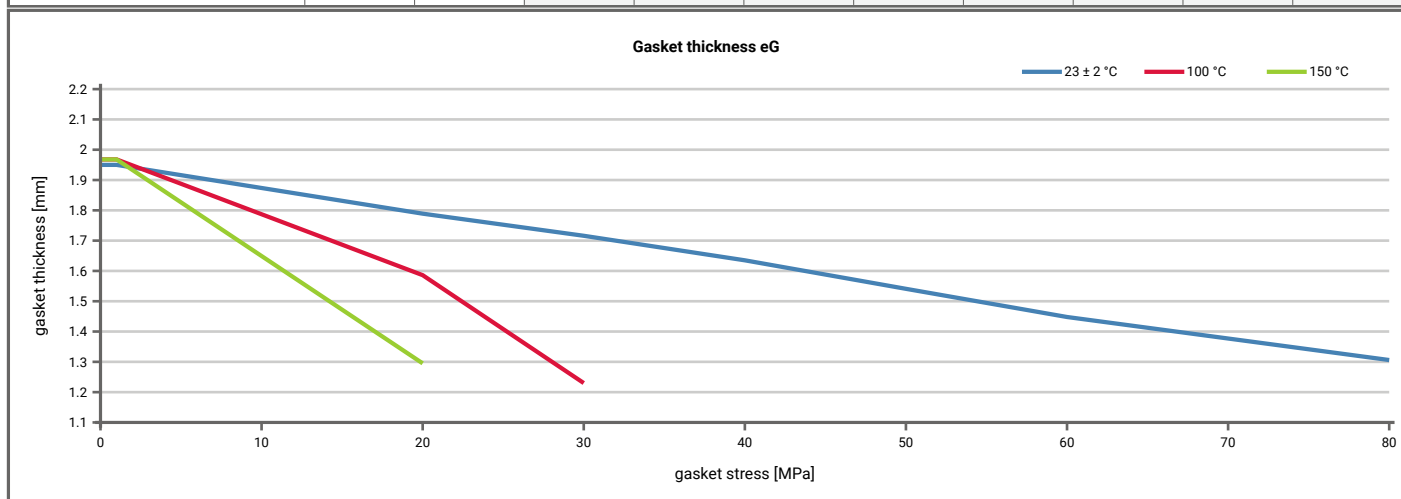


Note: the content of darkened cells was not determined respectively is unnecessary	Rev.-No.: 2	Creation date of this sheet: 2016-01-21
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Manufacturer address	KLINGER GmbH, Richard Klinger Str. 37, 65510 Idstein, DE	According to DIN EN 13555 2014-7
Product name	KLINGER® top-chem-2003	
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]					
	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 [10 MPa]	0.88	10	0.83	14	0.77	20				
Stress level 2 [20 MPa]	0.90	17	0.75	43	0.76	40				
P_{QR} and Δe_{Gc} at maximum gasket stress to be applied Q_{smax}										
P_{QR} at Q_{smax}	0.79	141	0.60	102	0.76	40				
Q_{smax}	80 MPa		30 MPa		20 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]					
	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	1.950	0	1.968	0	1.968				
1	0	1.950	0	1.968	0	1.968				
20	1446	1.789	1245	1.586	1681	1.295				
30	2222	1.716	2322	1.230						
40	3654	1.635								
50	8091	1.541								
60	10463	1.448								
80	6523	1.306								



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