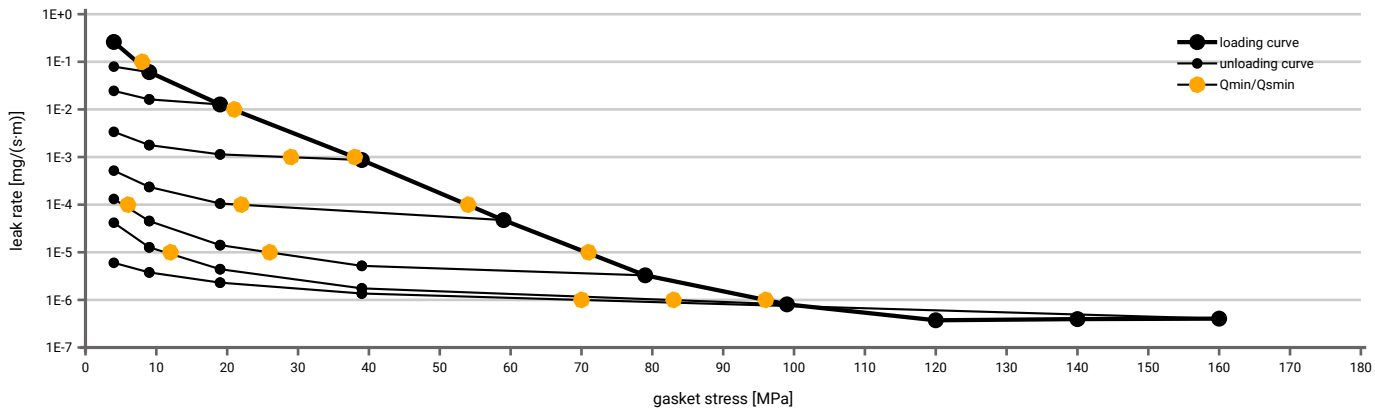
Manufacturer address	Kroll + Ziller GmbH & Co. KG, Reisholzstr. 15, 40721 Hilden, DE	According to **DIN EN 13555 2005-2**
Product name	NBR-DUO-EL ARAMID	
Product dimensions	92 x 49 x 2 mm (DIN EN 1514-1 1997-8)	

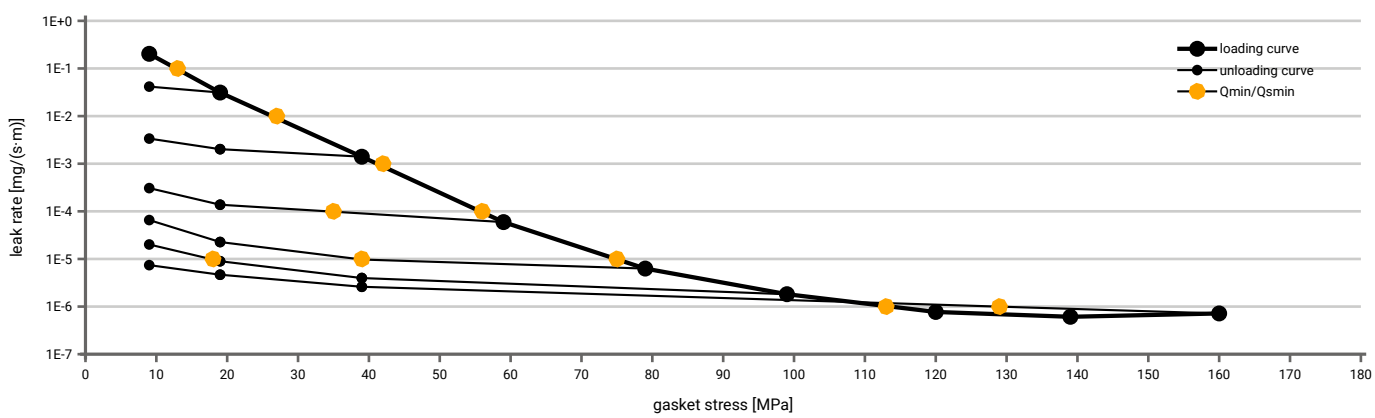
Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for p = 20 bar (T = 23 ± 2 °C)

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]	Q_A = 120 [MPa]	Q_A = 140 [MPa]	Q_A = 160 [MPa]
1E-0	5		5	5	5	5	5	5			5
1E-1	8		5	5	5	5	5	5			5
1E-2	22				5	5	5	5			5
1E-3	39				29	5	5	5			5
1E-4	55					23	6	5			5
1E-5	72						27	12			5
1E-6	97							83			70
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 ± 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]	Q_A = 120 [MPa]	Q_A = 140 [MPa]	Q_A = 160 [MPa]
1E-0	10		10	10	10	10	10			10
1E-1	14		10	10	10	10	10			10
1E-2	27			10	10	10	10			10
1E-3	42				10	10	10			10
1E-4	57				35	10	10			10
1E-5	76					39	19			10
1E-6	114									129
1E-7										
1E-8										

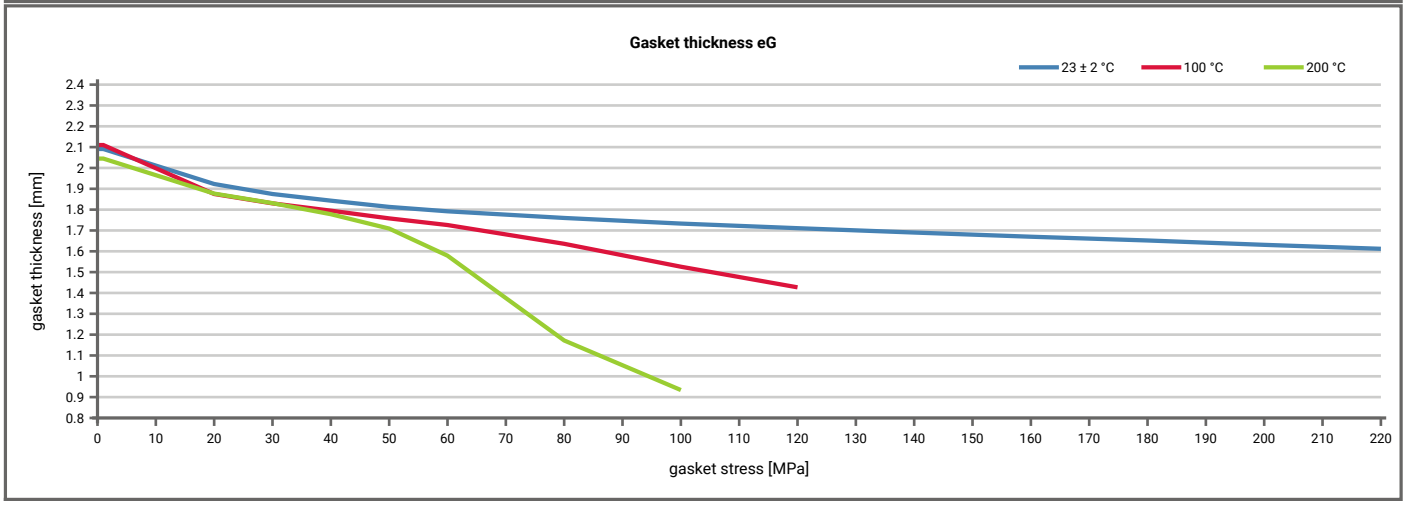


Note: the content of darkened cells was not determined respectively is unnecessary	Rev.-No.: **1**	Creation date of this sheet: **2021-12-02**

Manufacturer address	Kroll + Ziller GmbH & Co. KG, Reisholzstr. 15, 40721 Hilden, DE	According to **DIN EN 13555 2005-2**
Product name	NBR-DUO-EL ARAMID	
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 [200 °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]	0.93	19	0.88	31	0.66	86				
Stress level 2 [50 MPa]	0.96	19	0.83	73	0.68	134				
P_{QR} and Δe_{Gc} at maximum gasket stress to be applied (Q_{smax})										
P_{QR} at Q_{smax}	0.98	37	0.73	277	0.57	361				
Q_{smax}	220 MPa		120 MPa		100 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 [200 °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	2.091	0	2.110	0	2.045				
1	0	2.091	0	2.110	0	2.045				
20	663	1.923	920	1.875	1039	1.877				
30	1022	1.875	1421	1.830	1391	1.831				
40	1593	1.843	1621	1.795	1729	1.778				
50	1704	1.813	2082	1.758	2380	1.709				
60	2390	1.792	2647	1.726	2799	1.579				
80	2831	1.760	2662	1.636	2870	1.172				
100	3359	1.733	3206	1.526	3134	0.934				
120	3876	1.711	3172	1.427						
140	4298	1.690								
160	4350	1.670								
180	5056	1.652								
200	4803	1.631								
220	4631	1.612								



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