

GASKET SHEETS

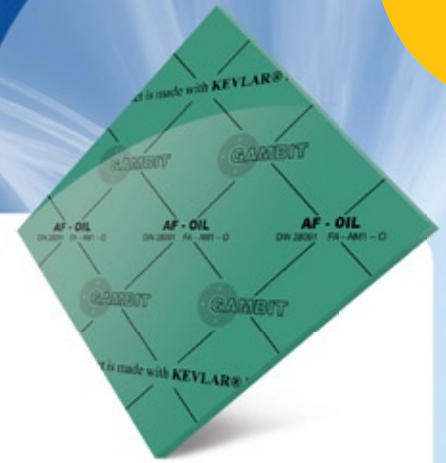
Chemical resistance of gasket sheets GAMBIT

Item	Chemical medium	GAMBIT AF-1000	GAMBIT AF-400	GAMBIT AF-200G	GAMBIT AF-OIL	GAMBIT AF-300	GAMBIT AF-U	GAMBIT AF-200 UNIVERSAL	GAMBIT AF-CD	GAMBIT AF-202	GAMBIT AF-153	GAMBIT SOFT	GAMBIT AF-CHEMATIC	PARO-GAMBIT
1	Acetone	■	▲	▲	▲	▲	▲	▲	■	■	■	■	▲	▲
2	Alcohol, ethyl	●	●	●	●	●	●	●	●	●	●	●	●	●
3	Alcohol, methyl	●	●	●	●	●	●	●	●	●	●	●	●	●
4	Ammonia	▲	●	●	●	▲	●	●	■	■	■	■	●	●
5	Aniline	■	■	■	■	▲	■	■	■	■	■	■	■	■
6	Benzene	▲	●	●	●	■	●	●	■	■	■	■	■	●
7	Gasoline	●	●	●	●	▲	●	●	●	●	▲	▲	▲	●
8	Chloride (wet)	■	▲	▲	▲	■	■	■	■	■	■	■	■	▲
9	Chloride (dry)	■	▲	▲	▲	▲	▲	▲	■	■	■	■	▲	▲
10	Chloroform	▲	▲	▲	▲	■	▲	▲	■	■	■	■	▲	▲
11	Cyclohexanone	▲	▲	▲	▲	■	▲	▲	■	■	■	■	▲	▲
12	Ethane	■	●	●	●	●	●	●	●	●	▲	▲	●	●
13	Phenol	■	▲	■	▲	■	▲	▲	■	■	■	■	▲	▲
14	Freon 11 and 12	■	●	●	●	▲	●	●	■	▲	■	■	●	●
15	Freon 22	■	▲	▲	▲	■	▲	▲	■	■	■	■	▲	▲
16	Ethylene glycol	●	●	●	●	●	●	●	●	●	●	●	●	●
17	Nitric acid 20%	■	▲	■	▲	▲	▲	▲	■	■	■	■	●	▲
18	Nitric acid 40%	■	▲	■	▲	▲	▲	▲	■	■	■	■	▲	▲
19	Phosphoric acid	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	▲
20	Formic acid	■	●	●	●	●	●	●	■	▲	■	■	●	●
21	Acetic acid	■	●	●	●	●	●	●	▲	▲	▲	▲	●	●
22	Sulfuric acid 20%	■	●	●	●	●	●	●	■	■	■	■	●	●
23	Fuming sulfuric acid	■	▲	■	▲	▲	▲	▲	■	■	■	■	▲	▲
24	Sulfuric acid 65%	■	▲	▲	■	■	■	■	■	■	■	■	●	▲
25	Hydrochloric acid 20%	■	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	▲
26	Hydrochloric acid 36%	■	▲	▲	■	■	■	■	■	■	■	■	●	■
27	Soap	●	●	●	●	●	●	●	●	●	●	●	●	●
28	Potassium permanganate	▲	●	▲	●	▲	●	●	▲	▲	▲	▲	●	●
29	Kerosene	▲	●	●	●	●	●	●	●	▲	▲	▲	▲	●
30	Ethyl acetate	■	▲	▲	▲	▲	▲	▲	■	■	■	■	▲	▲
31	Hydraulic oil Phosphate ester type	▲	●	●	●	▲	●	●	●	▲	▲	▲	●	●
32	Hydraulic oil Phosph. esters	▲	▲	▲	▲	■	▲	▲	■	■	■	■	▲	▲
33	Silicone oil	●	●	●	●	●	●	●	●	●	●	●	●	●
34	Air	●	●	●	●	●	●	●	●	●	●	●	●	●
35	Trichloroethylene	▲	▲	▲	▲	■	▲	▲	■	■	■	■	▲	▲
36	Water	●	●	●	●	●	●	●	●	●	●	●	●	●
37	Sea water	■	●	●	●	●	●	●	●	●	●	●	●	●
38	Ammonium hydroxide	▲	●	●	●	●	●	●	▲	▲	▲	▲	●	●
39	Potassium hydroxide	▲	▲	▲	▲	▲	▲	▲	■	▲	■	■	▲	▲
40	Sodium hydroxide	▲	▲	▲	▲	▲	▲	▲	■	▲	■	■	▲	▲
41	Calcium hydroxide	▲	●	●	●	●	●	●	▲	●	▲	▲	●	●

● Suitable for use. ▲ Can be used only after successful trials under working conditions. ■ Not suitable for use.

All information in this catalogue is based on years of experience in manufacture and use of the discussed products. Since sealing performance in the joint is subject to multiple factors such as mounting method, system parameters, and sealed medium, technical parameters specified herein are of informative nature only and cannot be used as grounds for any claims; any special uses of products are subject to consulting with the manufacturer.

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Gasket sheet Gambit AF-OIL

Test Results of Gambit AF–Oil Published on Gasketdata.org

The below tests were run according to EN 13555, the most up-to-date norm in this domain. The results confirm the quality of our products and assist the design of flanges according to norm EN 1591-1+A1:2009/AC:2011.

The results have been approved by Center of Sealing Technologies (CST) at Münster University of Applied Sciences (MUAS) and published on www.gasketdata.org together with the datasheets of the world's leading manufacturers of sealing materials.

CST is an independent laboratory focused on the research and development in the field of sealing materials in order to assist both the producers and the users.

Gasket characteristics acc. EN 13555 (05/2005) required for design calculations acc. EN 1591-1+A1:2009/AC:2011
Sealing element dimensions [mm] 92 x 49 x 2

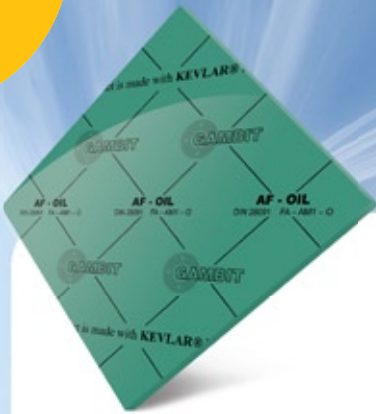
Relaxation ratio P_{QR} for stiffness $C = 500$ kN/mm			
Gasket stress, MPa	Ambient temperature	Temperature 1 (175 °C)	Temperature 2 (300 °C)
Stress level 1 (30 MPa)	0,94	0,82	0,61
Stress level 2 (50 MPa)	0,97	0,90	0,69
P_{QR} at Q_{Smax} (220/220/80 MPa)	0,99	0,86	0,67

Maximal applicable gasket stress Q_{Smax} MPa		
Q_{Smax} MPa – ambient temperature	Q_{Smax} MPa – temperature 1 (175 °C)	Q_{Smax} MPa – temperature 2 (300 °C)
220	220	80

Sekant unloading modulus of the gasket E_g , MPa and gasket thickness e_g , mm						
Gasket stress, MPa	Ambient temperature		Temperature 1 (175 °C)		Temperature 2 (300 °C)	
	E_g , MPa	e_g , mm	E_g , MPa	e_g , mm	E_g , MPa	e_g , mm
0	-	-	-	-	-	-
1	-	2,083	-	2,086	-	2,085
20	1133	1,955	1680	1,922	9216	1,89
30	1766	1,925	2311	1,909	5235	1,873
40	2457	1,903	2660	1,895	4853	1,859
50	3186	1,885	3369	1,883	5285	1,847
60	3982	1,871	3678	1,871	5453	1,834
80	5399	1,851	4440	1,845	6179	1,808
100	6535	1,835	4784	1,815	-	-
120	7345	1,821	5132	1,784	-	-
140	8098	1,808	5521	1,751	-	-
160	8523	1,796	5870	1,72	-	-
180	8926	1,785	6238	1,69	-	-
200	9383	1,774	6468	1,663	-	-
220	9739	1,763	6772	1,638	-	-

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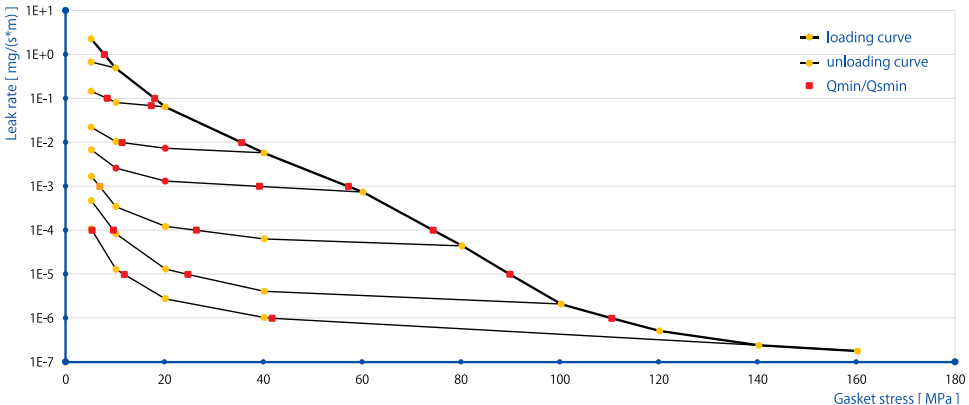
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Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{Smin(L)}$ (after off-loading) for inner pressure 10 bar										
Tightness class	$Q_{min(L)}$	$Q_{Smin(L)}$, MPa								
		Q_A	Q_A	Q_A	Q_A	Q_A	Q_A	Q_A	Q_A	Q_A
mg/(s x m)	MPa	10MPa	20 MPa	40 MPa	60 MPa	80 MPa	100 MPa	120 MPa	140 MPa	160 MPa
10 ⁰	8	5	5	5	5	5	5	-	-	5
10 ⁻¹	18	-	8	5	5	5	5	-	-	5
10 ⁻²	36	-	-	11	5	5	5	-	-	5
10 ⁻³	57	-	-	-	39	7	5	-	-	5
10 ⁻⁴	74	-	-	-	-	27	10	-	-	5
10 ⁻⁵	90	-	-	-	-	-	25	-	-	12
10 ⁻⁶	111	-	-	-	-	-	-	-	-	42

Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{Smin(L)}$ (after off-loading) for inner pressure 40 bar										
Tightness class	$Q_{min(L)}$	$Q_{Smin(L)}$, MPa								
		Q_A	Q_A	Q_A	Q_A	Q_A	Q_A	Q_A	Q_A	Q_A
mg/(s x m)	MPa	10MPa	20 MPa	40 MPa	60 MPa	80 MPa	100 MPa	120 MPa	140 MPa	160 MPa
10 ⁰	19	-	15	5	5	5	5	-	-	5
10 ⁻¹	39	-	-	23	6	5	5	-	-	5
10 ⁻²	62	-	-	-	-	9	6	-	-	5
10 ⁻³	84	-	-	-	-	-	11	-	-	7
10 ⁻⁴	96	-	-	-	-	-	35	-	-	10
10 ⁻⁵	115	-	-	-	-	-	-	-	-	28
10 ⁻⁶	159	-	-	-	-	-	-	-	-	158

Leakage - ambient temperature / inner pressure = 10 bar



Leakage - ambient temperature / inner pressure = 40 bar

