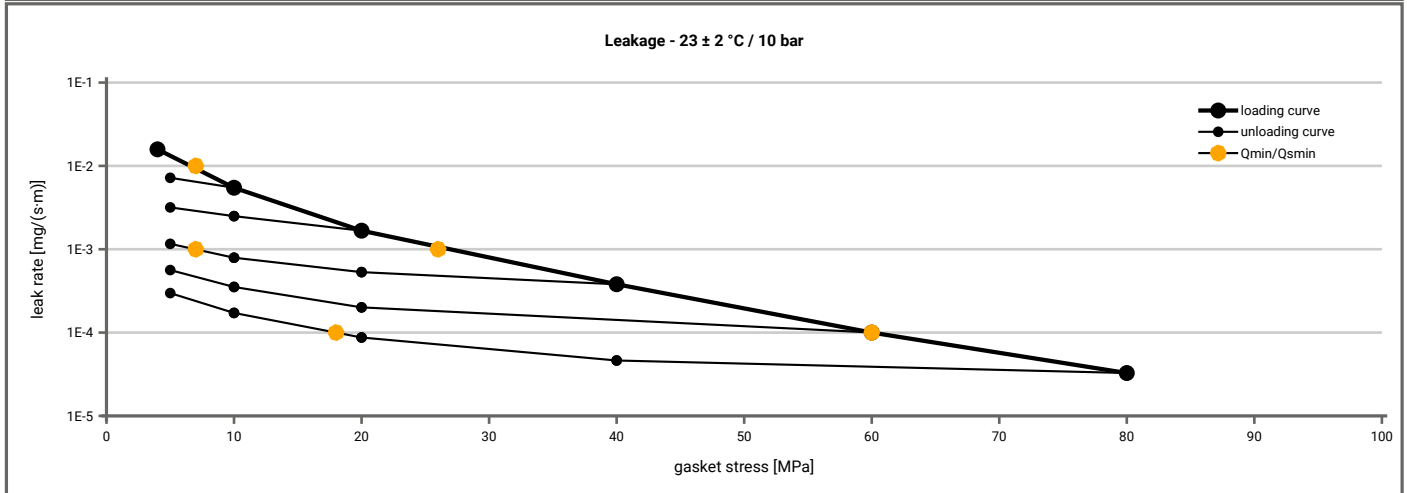


| | | |
|-----------------------------|--|--|
| Manufacturer address | Frenzelit GmbH, Frankenhammer, 95460 Bad Berneck, DE | According to DIN EN 13555 2005-2 |
| Product name | novaphit MST / novaphit MST with XP-Technology | |
| Product dimensions | 92 x 49 x 2 mm (DIN EN 1514-1 1997-8) | |

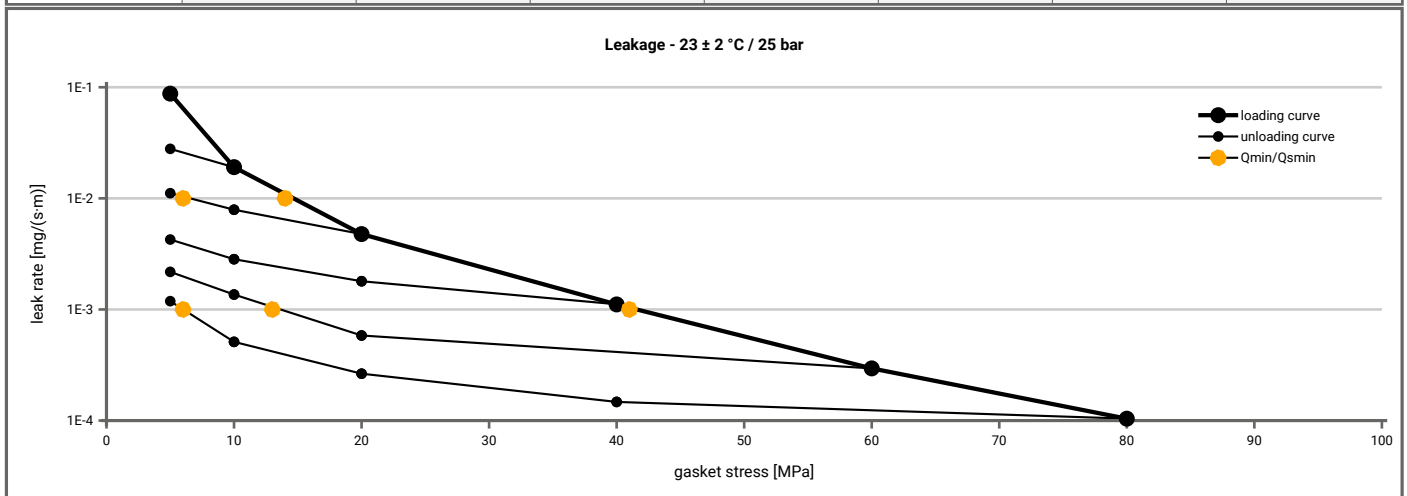
Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for $p = 10$ bar ($T = 23 \pm 2$ °C)

| 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] |
| 1E-0 | 5 | | 5 | 5 | 5 | 5 | 5 |
| 1E-1 | 5 | | 5 | 5 | 5 | 5 | 5 |
| 1E-2 | 7 | | 5 | 5 | 5 | 5 | 5 |
| 1E-3 | 27 | | | | 7 | 5 | 5 |
| 1E-4 | 60 | | | | | | 18 |
| 1E-5 | | | | | | | |
| 1E-6 | | | | | | | |
| 1E-7 | | | | | | | |
| 1E-8 | | | | | | | |



Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for $p = 25$ 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] |
| 1E-0 | 5 | | 5 | 5 | 5 | 5 | 5 |
| 1E-1 | 5 | | 5 | 5 | 5 | 5 | 5 |
| 1E-2 | 15 | | | 7 | 5 | 5 | 5 |
| 1E-3 | 42 | | | | | 14 | 6 |
| 1E-4 | | | | | | | |
| 1E-5 | | | | | | | |
| 1E-6 | | | | | | | |
| 1E-7 | | | | | | | |
| 1E-8 | | | | | | | |



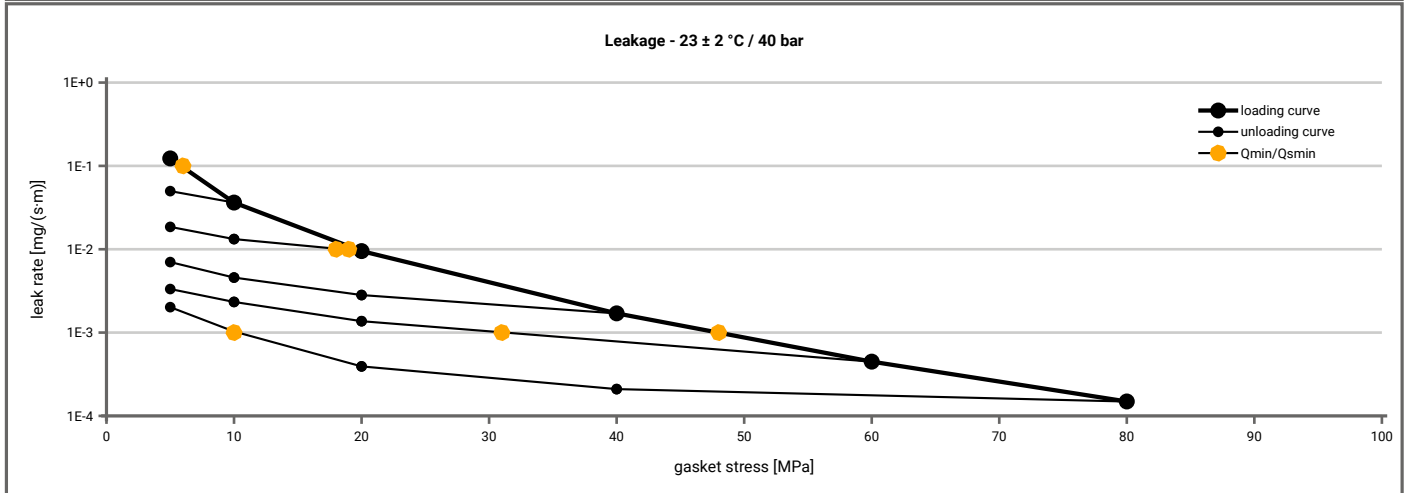
Note: the content of darkened cells was not determined respectively is unnecessary

Rev.-No.: 2

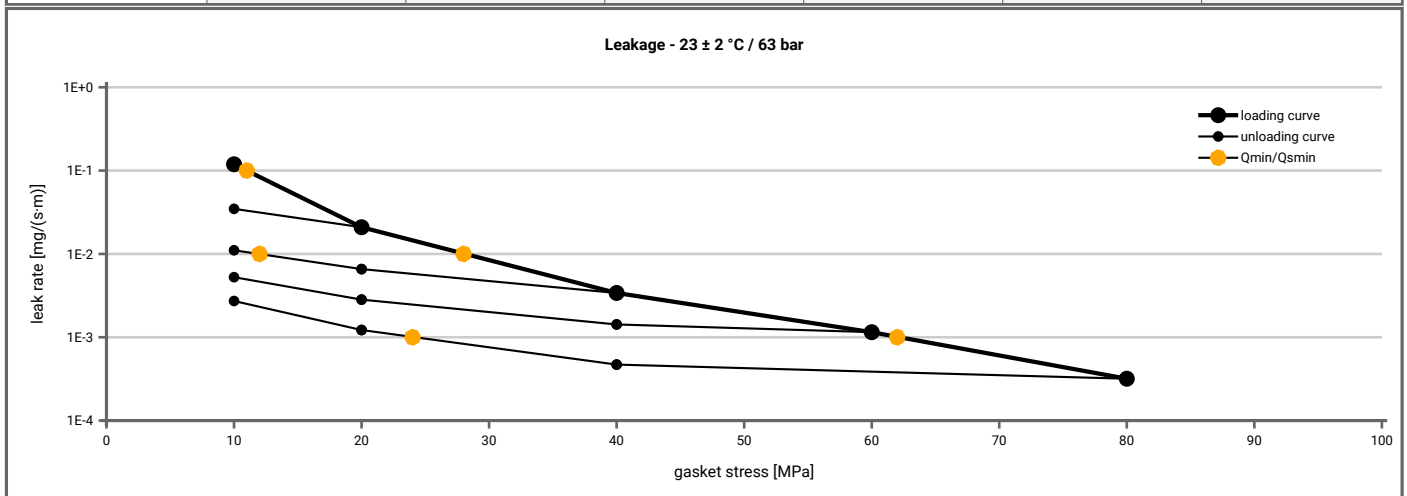
Creation date of this sheet: 2013-01-14

| | | |
|-----------------------------|--|--|
| Manufacturer address | Frenzelit GmbH, Frankenhammer, 95460 Bad Berneck, DE | According to DIN EN 13555 2005-2 |
| Product name | novaphit MST / novaphit MST with XP-Technology | |
| 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 ($T = 23 \pm 2$ °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] |
| 1E-0 | 5 | | 5 | 5 | 5 | 5 | 5 |
| 1E-1 | 6 | | 5 | 5 | 5 | 5 | 5 |
| 1E-2 | 20 | | | 19 | 5 | 5 | 5 |
| 1E-3 | 48 | | | | | 31 | 10 |
| 1E-4 | | | | | | | |
| 1E-5 | | | | | | | |
| 1E-6 | | | | | | | |
| 1E-7 | | | | | | | |
| 1E-8 | | | | | | | |



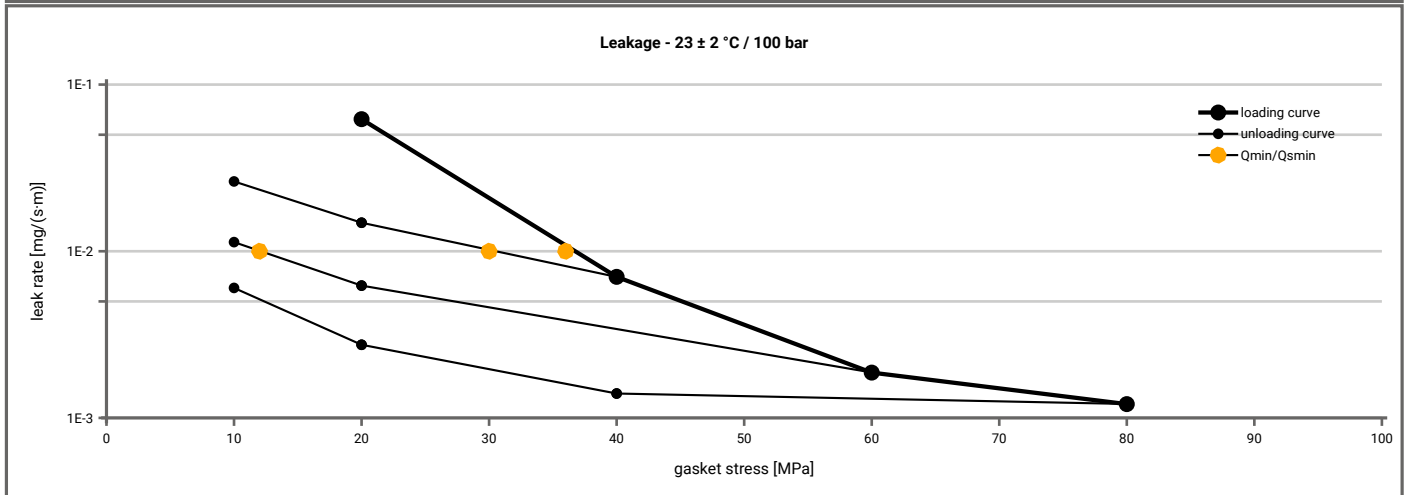
| Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for $p = 63$ bar ($T = 23 \pm 2$ °C) | | | | | | |
|--|--------------------|---------------------|------------------|------------------|------------------|------------------|
| L [mg/(s·m)] | $Q_{min(L)}$ [MPa] | $Q_{smin(L)}$ [MPa] | | | | |
| | | $Q_A = 10$ [MPa] | $Q_A = 20$ [MPa] | $Q_A = 40$ [MPa] | $Q_A = 60$ [MPa] | $Q_A = 80$ [MPa] |
| 1E-0 | 10 | | 10 | 10 | 10 | 10 |
| 1E-1 | 11 | | 10 | 10 | 10 | 10 |
| 1E-2 | 28 | | | 12 | 10 | 10 |
| 1E-3 | 62 | | | | | 24 |
| 1E-4 | | | | | | |
| 1E-5 | | | | | | |
| 1E-6 | | | | | | |
| 1E-7 | | | | | | |
| 1E-8 | | | | | | |



Note: the content of darkened cells was not determined respectively is unnecessary Rev.-No.: 2 Creation date of this sheet: 2013-01-14

| | | |
|-----------------------------|--|--|
| Manufacturer address | Frenzelit GmbH, Frankenhammer, 95460 Bad Berneck, DE | According to DIN EN 13555 2005-2 |
| Product name | novaphit MST / novaphit MST with XP-Technology | |
| 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 $p = 100 \text{ bar}$ ($T = 23 \pm 2 \text{ }^\circ\text{C}$) | | | | | |
|--|--------------------|---------------------|------------------|------------------|------------------|
| L [mg/(s·m)] | $Q_{min(L)}$ [MPa] | $Q_{smin(L)}$ [MPa] | | | |
| | | $Q_A = 20$ [MPa] | $Q_A = 40$ [MPa] | $Q_A = 60$ [MPa] | $Q_A = 80$ [MPa] |
| 1E-0 | 20 | | 10 | 10 | 10 |
| 1E-1 | 20 | | 10 | 10 | 10 |
| 1E-2 | 37 | | 31 | 12 | 10 |
| 1E-3 | | | | | |
| 1E-4 | | | | | |
| 1E-5 | | | | | |
| 1E-6 | | | | | |
| 1E-7 | | | | | |
| 1E-8 | | | | | |



| | | |
|-----------------------------|--|--|
| Manufacturer address | Frenzelit GmbH, Frankenhammer, 95460 Bad Berneck, DE | According to DIN EN 13555 2005-2 |
| Product name | novaphit MST / novaphit MST with XP-Technology | |
| 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] | | Temperature 3 [300 °C] | | Temperature 4 [400 °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] | 0.98 | 6 | 0.93 | 18 | 0.89 | 28 | 0.91 | 24 | 0.92 | 20 |
| Stress level 2 [50 MPa] | 0.99 | 4 | 0.96 | 17 | 0.93 | 29 | 0.95 | 23 | 0.95 | 21 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| P_{QR} and Δe_{Gc} at maximum gasket stress to be applied Q_{smax} | | | | | | | | | | |
| P_{QR} at Q_{smax} | 1.00 | 0 | 0.98 | 34 | 0.96 | 60 | 0.95 | 83 | 0.96 | 60 |
| Q_{smax} | 220 MPa | | 200 MPa | | 180 MPa | | 180 MPa | | 180 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] | | Temperature 3 [300 °C] | | Temperature 4 [400 °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 | 1.891 | 0 | 1.854 | 0 | 1.844 | 0 | 1.854 | 0 | 1.866 |
| 1 | 0 | 1.891 | 0 | 1.854 | 0 | 1.844 | 0 | 1.854 | 0 | 1.866 |
| 20 | 465 | 1.020 | 441 | 0.988 | 513 | 0.943 | 470 | 0.916 | 479 | 0.902 |
| 30 | 741 | 0.951 | 1132 | 0.938 | 802 | 0.899 | 800 | 0.877 | 603 | 0.858 |
| 40 | 1110 | 0.914 | 1155 | 0.905 | 1118 | 0.869 | 1228 | 0.850 | 1271 | 0.831 |
| 50 | 1271 | 0.885 | 1504 | 0.878 | 1341 | 0.843 | 1420 | 0.826 | 1391 | 0.810 |
| 60 | 1988 | 0.867 | 1922 | 0.859 | 1696 | 0.824 | 1748 | 0.808 | 1763 | 0.790 |
| 80 | 2793 | 0.842 | 2684 | 0.829 | 2750 | 0.793 | 2124 | 0.775 | 2245 | 0.762 |
| 100 | 2981 | 0.820 | 2667 | 0.806 | 3586 | 0.771 | 2582 | 0.753 | 2636 | 0.740 |
| 120 | 3780 | 0.802 | 4561 | 0.792 | 4514 | 0.759 | 2938 | 0.733 | 3796 | 0.726 |
| 140 | 4756 | 0.788 | 5405 | 0.780 | 5600 | 0.747 | 4036 | 0.723 | 5165 | 0.713 |
| 160 | 4881 | 0.774 | 5105 | 0.764 | 5895 | 0.734 | 5113 | 0.714 | 5001 | 0.698 |
| 180 | 5151 | 0.762 | 5491 | 0.753 | 5825 | 0.724 | 5861 | 0.706 | 4845 | 0.686 |
| 200 | 5459 | 0.752 | 5679 | 0.739 | | | | | | |
| 220 | 5750 | 0.744 | | | | | | | | |

