

|                             |                                                                            |                                                |
|-----------------------------|----------------------------------------------------------------------------|------------------------------------------------|
| Firma und Anschrift         | Kempchen Dichtungstechnik - 46147 Oberhausen - Im Waldteich 21             | according to<br><b>DIN EN 13555</b><br>2014-07 |
| Dichtungstyp                | <b>Flachdichtung F1 RSP2S2075-i (316L / Graphit SGL)</b>                   |                                                |
| Dichtungsmaße $e_{GO}$ [mm] | <b>Ø 49 / 92 x 2,0 mm (DIN 1514-1)</b>                                     |                                                |
| Bemerkung:                  | Bei höheren Innendrücken wurde eine höhere Anfangsflächenpressung gewählt! |                                                |

| erforderliche Mindest-Flächenpressung $Q_{min}$ (bei Montage), $Q_{Smin}$ (nach Entlastung) für p = 10 bar bis 160 bar |                  |               |               |               |                   |               |               |               |                  |               |               |               |                  |               |               |               |                  |               |               |               |                  |               |               |               |                   |               |               |               |                   |               |               |               |                   |     |    |  |
|------------------------------------------------------------------------------------------------------------------------|------------------|---------------|---------------|---------------|-------------------|---------------|---------------|---------------|------------------|---------------|---------------|---------------|------------------|---------------|---------------|---------------|------------------|---------------|---------------|---------------|------------------|---------------|---------------|---------------|-------------------|---------------|---------------|---------------|-------------------|---------------|---------------|---------------|-------------------|-----|----|--|
| L<br>[mg/(s·m)]                                                                                                        | $Q_{MINL}$ [MPa] |               |               |               | $Q_{SMINL}$ [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] |               |               |               | $Q_A = 120$ [MPa] |               |               |               | $Q_A = 160$ [MPa] |     |    |  |
|                                                                                                                        | p=10<br>[bar]    | p=25<br>[bar] | p=40<br>[bar] | p=80<br>[bar] | p=10<br>[bar]     | p=25<br>[bar] | p=40<br>[bar] | p=80<br>[bar] | p=10<br>[bar]    | p=25<br>[bar] | p=40<br>[bar] | p=80<br>[bar] | p=10<br>[bar]    | p=25<br>[bar] | p=40<br>[bar] | p=80<br>[bar] | p=10<br>[bar]    | p=25<br>[bar] | p=40<br>[bar] | p=80<br>[bar] | p=10<br>[bar]    | p=25<br>[bar] | p=40<br>[bar] | p=80<br>[bar] | p=10<br>[bar]     | p=25<br>[bar] | p=40<br>[bar] | p=80<br>[bar] | p=10<br>[bar]     | p=25<br>[bar] | p=40<br>[bar] | p=80<br>[bar] |                   |     |    |  |
| $10^0$                                                                                                                 | <5               | <5            | 6             |               | <5                | <5            | <5            |               | <5               | <5            | <5            |               | <5               | <5            | <5            |               | <5               | <5            | <5            |               | <5               | <5            | <5            |               | <5                | <5            | <5            |               | <5                | <5            | <5            |               |                   |     |    |  |
| $10^{-1}$                                                                                                              | <5               | 8             | 12            |               | <5                | <5            | <5            |               | <5               | <5            | <5            |               | <5               | <5            | <5            |               | <5               | <5            | <5            |               | <5               | <5            | <5            |               | <5                | <5            | <5            |               | <5                | <5            | <5            |               |                   |     |    |  |
| $10^{-2}$                                                                                                              | 12               | 20            | 30            |               | <5                |               |               |               | <5               | 11            |               |               | <5               | <5            | 13            |               | <5               | <5            | <5            |               | <5               | <5            | <5            |               | <5                | <5            | <5            |               | <5                | <5            | <5            |               |                   |     |    |  |
| $10^{-3}$                                                                                                              | 34               | 43            | 49            |               |                   |               |               |               |                  |               |               |               | 14               |               |               |               | <5               | 7             | 14            |               | <5               | <5            | 7             |               | <5                | <5            | 6             |               | <5                | <5            | 6             |               | <5                | <5  | <5 |  |
| $10^{-4}$                                                                                                              | 53               | 63            | 80            |               |                   |               |               |               |                  |               |               |               |                  |               |               |               | 13               |               |               |               | 6                | 10            | 18            |               | 5                 | 8             | 13            |               | 5                 | 8             | 13            |               | <5                | <5  | 9  |  |
| $10^{-5}$                                                                                                              | 85               | 94            | 109           |               |                   |               |               |               |                  |               |               |               |                  |               |               |               |                  |               |               |               |                  |               |               | 26            | 68                |               |               | 26            | 68                |               |               | 15            | 19                | 34  |    |  |
| $10^{-6}$                                                                                                              | 121              | 125           | 139           |               |                   |               |               |               |                  |               |               |               |                  |               |               |               |                  |               |               |               |                  |               |               |               |                   |               |               |               |                   |               |               | 45            | 64                | 106 |    |  |
| $10^{-7}$                                                                                                              | 149              | 151           |               |               |                   |               |               |               |                  |               |               |               |                  |               |               |               |                  |               |               |               |                  |               |               |               |                   |               |               |               |                   |               |               | 125           | 136               |     |    |  |
| $10^{-8}$                                                                                                              |                  |               |               |               |                   |               |               |               |                  |               |               |               |                  |               |               |               |                  |               |               |               |                  |               |               |               |                   |               |               |               |                   |               |               |               |                   |     |    |  |

| Relaxationsverhältnis $P_{QR}$ bei einer Prüfstand-Steifigkeit von $C = 500 \text{ kN/mm}$ |                |                              |                      |                              |                      |                              |                      |                              |                      |                              |                      |                              |
|--------------------------------------------------------------------------------------------|----------------|------------------------------|----------------------|------------------------------|----------------------|------------------------------|----------------------|------------------------------|----------------------|------------------------------|----------------------|------------------------------|
| Flächenpressung                                                                            | Raumtemperatur |                              | Temperatur 1 [100°C] |                              | Temperatur 2 [200°C] |                              | Temperatur 3 [300°C] |                              | Temperatur 4 [400°C] |                              | Temperatur 5 [500°C] |                              |
|                                                                                            | $P_{QR}$       | $\Delta e_{Gc} \text{ [mm]}$ | $P_{QR}$             | $\Delta e_{Gc} \text{ [mm]}$ | $P_{QR}$             | $\Delta e_{Gc} \text{ [mm]}$ | $P_{QR}$             | $\Delta e_{Gc} \text{ [mm]}$ | $P_{QR}$             | $\Delta e_{Gc} \text{ [mm]}$ | $P_{QR}$             | $\Delta e_{Gc} \text{ [mm]}$ |
| Flächenpressung 1 [ 50 MPa]                                                                | 0,99           | 0,004                        | 0,96                 | 0,016                        | 0,97                 | 0,010                        | 0,95                 | 0,022                        | 0,97                 | 0,015                        |                      |                              |
| Flächenpressung 2 [ 90 MPa]                                                                |                |                              |                      |                              |                      |                              |                      |                              |                      |                              |                      |                              |
| Flächenpressung 3 [ 120 MPa]                                                               | 1,00           | 0,003                        | 0,99                 | 0,011                        | 1,00                 | 0,004                        | 0,98                 | 0,020                        | 1,00                 | 0,001                        |                      |                              |
| Flächenpressung 4 [ 180 MPa]                                                               |                |                              |                      |                              |                      |                              |                      |                              |                      |                              |                      |                              |

| maximale Flächenpressung ohne Beschädigung $Q_{Smax}$ |      |       |      |       |      |       |      |       |      |       |  |
|-------------------------------------------------------|------|-------|------|-------|------|-------|------|-------|------|-------|--|
| PQR bei $Q_{Smax}$                                    | 1,00 | 0,002 | 0,99 | 0,008 | 1,00 | 0,001 | 1,00 | 0,002 | 1,00 | 0,013 |  |
| $Q_{Smax}$ [MPa]                                      | 220  |       | 220  |       | 220  |       | 220  |       | 180  |       |  |

| Sekantenmodul der Dichtung bei Entlastung $E_G$ und Dichtungshöhe $e_G$ |                |            |                       |            |                       |            |                       |            |                       |            |                       |            |
|-------------------------------------------------------------------------|----------------|------------|-----------------------|------------|-----------------------|------------|-----------------------|------------|-----------------------|------------|-----------------------|------------|
| Flächenpressung [MPa]                                                   | Raumtemperatur |            | Temperatur 1 [100 °C] |            | Temperatur 2 [200 °C] |            | Temperatur 3 [300 °C] |            | Temperatur 4 [400 °C] |            | Temperatur 5 [500 °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] | $E_G$ [MPa]           | $e_G$ [mm] |
| 0                                                                       |                | 2,0500     |                       | 2,0000     |                       | 2,0300     |                       | 2,1050     |                       | 2,0350     |                       |            |
| 1                                                                       |                | 1,9380     |                       | 1,9530     |                       | 1,9205     |                       | 2,0970     |                       | 1,9325     |                       |            |
| 20                                                                      | 439            | 1,3800     | 399                   | 1,3258     | 438                   | 1,3430     | 1052                  | 1,4642     | 493                   | 1,3450     |                       |            |
| 30                                                                      | 707            | 1,2965     | 616                   | 1,2543     | 734                   | 1,2690     | 1282                  | 1,3983     | 730                   | 1,2810     |                       |            |
| 40                                                                      | 998            | 1,2270     | 882                   | 1,1940     | 1012                  | 1,1965     | 1494                  | 1,3252     | 1009                  | 1,2115     |                       |            |
| 50                                                                      | 1317           | 1,1775     | 1195                  | 1,1488     | 1315                  | 1,1580     | 1943                  | 1,2837     | 1338                  | 1,1680     |                       |            |
| 60                                                                      | 1645           | 1,1490     | 1437                  | 1,1203     | 1708                  | 1,1315     | 2456                  | 1,2553     | 1661                  | 1,1395     |                       |            |
| 80                                                                      | 2243           | 1,1100     | 1960                  | 1,0794     | 2278                  | 1,0940     | 3938                  | 1,2182     | 2371                  | 1,1005     |                       |            |
| 100                                                                     | 2921           | 1,0845     | 2477                  | 1,0508     | 3012                  | 1,0695     | 5562                  | 1,1942     | 2987                  | 1,0740     |                       |            |
| 120                                                                     | 3506           | 1,0660     | 3012                  | 1,0303     | 3613                  | 1,0510     | 7075                  | 1,1755     | 3629                  | 1,0550     |                       |            |
| 140                                                                     | 4110           | 1,0515     | 3517                  | 1,0139     | 3890                  | 1,0365     | 7993                  | 1,1592     | 4436                  | 1,0400     |                       |            |
| 160                                                                     | 4678           | 1,0395     | 3947                  | 1,0004     | 4365                  | 1,0240     | 8179                  | 1,1453     | 5167                  | 1,0275     |                       |            |
| 180                                                                     | 5296           | 1,0295     | 4515                  | 0,9899     | 5673                  | 1,0155     | 8517                  | 1,1335     | 5446                  | 1,0155     |                       |            |
| 200                                                                     | 5910           | 1,0210     | 4866                  | 0,9799     | 6682                  | 1,0035     | 8530                  | 1,1223     |                       |            |                       |            |
| 220                                                                     | 6495           | 1,0130     | 5364                  | 0,9718     | 8694                  | 0,9875     | 8655                  | 1,1123     |                       |            |                       |            |
|                                                                         |                |            |                       |            |                       |            |                       |            |                       |            |                       |            |
|                                                                         |                |            |                       |            |                       |            |                       |            |                       |            |                       |            |

Hinweis: Der Inhalt von grau gefärbten Zellen wurde nicht ermittelt bzw. ist nicht nötig