

|                                                                                                                                                                                                                  |                                                                                                                         |                                          |                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------------------------------------------|
| Producer:<br>Producer - Type:<br>Producer-Mark-Code::<br>Order-/ Item-No.:<br>Material-Briefname / Norm:<br>Material-Briefname / Norm:<br>Impregnation:                                                          | <b>Kempchen &amp; Co. GmbH</b><br><b>K 80 (Graphite high grade)</b><br><br><b>Graphite 99,85 %</b><br><br><b>no one</b> |                                          |                                                    |
| Dimension range                                                                                                                                                                                                  | diameter (mm)                                                                                                           |                                          | thickness (mm)                                     |
|                                                                                                                                                                                                                  | inside                                                                                                                  | outside                                  |                                                    |
| Dimension range others (mm)                                                                                                                                                                                      | <b>Packing cross-section 4 until 25 mm</b>                                                                              |                                          |                                                    |
| Characteristics                                                                                                                                                                                                  | unit                                                                                                                    | Testing method / Test standard           | Minimum value of the product guaranteed            |
| Density                                                                                                                                                                                                          | g/cm <sup>3</sup>                                                                                                       | DIN 28090-2                              | <b>1,2 ± 0,1</b><br><b>(deliver-condition)</b>     |
| Density of Graphite<br>(if Graphite is used)                                                                                                                                                                     | g/cm <sup>3</sup>                                                                                                       | DIN 28090-2                              | <b>1,0</b><br><b>(source-material)</b>             |
| <b>Data regarding resistance</b>                                                                                                                                                                                 |                                                                                                                         |                                          |                                                    |
| Maximum working temperature (°C)<br>for steam / water                                                                                                                                                            | °C                                                                                                                      | -                                        | <b>550</b>                                         |
| Media resistance                                                                                                                                                                                                 | -                                                                                                                       | DIN 28090-3                              | <b>not specify</b>                                 |
| Long-Term-Resistant<br>Limit value with respect to the change of sealing- and deformation characteristics and if applicable gasket dimensions<br>(media, pressure, temperature, seal-expanse-pressing and so on) | -                                                                                                                       |                                          | <b>always depending on the kind of application</b> |
| <b>Part of contamination</b>                                                                                                                                                                                     |                                                                                                                         | Requirements see KS D 2021/50 appendix D |                                                    |
| Water soluble chloride                                                                                                                                                                                           | mg/Kg                                                                                                                   | Siemens-Norm                             | ≤ <b>20</b>                                        |
| Total amount chloride and fluorine                                                                                                                                                                               | mg/Kg                                                                                                                   | DIN 28090-2                              | ≤ <b>100</b>                                       |

|       |                  |                  |
|-------|------------------|------------------|
|       | <b>prepared:</b> | <b>released:</b> |
| Date: | 04.12.2003       | 04.12.2003       |
| Name: | H. Buchholz      | H. Hehle         |

**Characteristic values for packings**

|                                                        |                                                                   |
|--------------------------------------------------------|-------------------------------------------------------------------|
| Dimensions of the test samples (mm):<br><b>10 x 10</b> | Dimension of the housing of the packing (mm):<br><b>Ø 40 / 60</b> |
| Testing medium:<br>---                                 |                                                                   |

| Characteristic                                                                                                    | Unit              | Test method / Test standard | Minimum value of the product standard                                        |
|-------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------|------------------------------------------------------------------------------|
| Axial-to-radial load transfer ratio K                                                                             | ---               | Test. Kempchen              | <b>0,70 until 0,92 (<math>\sigma_{10-100}</math>)</b>                        |
| Coefficient of friction $\mu$ at temperature T                                                                    | ---               |                             | <b>0,18 until 0,12 (20°C/<math>\sigma_{10-100}</math>)</b>                   |
| Product $K * \mu$<br>Comprised of the axial-to-radial load transfer ratio K and the coefficient of friction $\mu$ | ---               | Test Kempchen               | <b>0,119 until 0,110 (<math>\sigma_{10-100}</math>)</b>                      |
| Minimum surface-pressure <sup>1)</sup> in fitting condition $\sigma_{VU/L}$                                       | N/mm <sup>2</sup> | Test Kempchen               | <b><math>\sigma_V = 20</math></b><br>(for the lower packing)                 |
| Minimum surface-pressure <sup>1)</sup> in working condition $\sigma_{BU/L}$                                       | N/mm <sup>2</sup> | Test Kempchen               | <b><math>\sigma_{BU} = m * p</math> (m = 1,5)</b><br>(for the lower packing) |
| Coefficient of relaxation <sup>2)</sup> g at working temperature T ( $\sigma_A$ )                                 | ---               | ---                         | <b>Temporary available</b>                                                   |
|                                                                                                                   | RT                | ---                         | <b>Temporary available</b>                                                   |
|                                                                                                                   | 100 °C            | ---                         | <b>Temporary available</b>                                                   |
|                                                                                                                   | 200 °C            | ---                         | <b>Temporary available</b>                                                   |
|                                                                                                                   | 300 °C            | ---                         | <b>Temporary available</b>                                                   |

1) Alternatively the requisite compressive stress for initial installation shall be stated

2) The coefficient of relaxation g is defined as the ratio between the compressive stress at operating temperature and the surface pressure ( $\sigma_A$ ) at RT. The relaxation factor is dependent of temperature and loading time.