



# Uni Klinger - compressed gasket materials



# Material Properties

## Material Description

## Operating Guidelines

## Typical Specifications

## Typical Original Properties (1.5mm)

## Typical Properties after Fluid Immersion (1.5mm)

|                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                               |                                                                                                              |                                                                                                                                                         |                                                                                                                                                                                                                                                                                                  |                                                               |                                                                                                                                               |
|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <br><b>UKL® 3XA</b>             | Top quality service sheet for steam, gas, water, alkaline media, non-aggressive solvents and many other chemicals such as aliphatic alcohols, esters, ketones and amines composed of SBR binder and high grade chrysotile asbestos.<br>Colour: Red/Brown.                                                                                                                                                                                                                                                        | <b>Max. Temperature</b><br>150°C<br><b>Max. Pressure</b><br>130 bar<br><b>Min. Temperature</b><br>-200°C<br>IS 2712 / 1995 : Gr. W1<br>& O1)                  | British<br>German<br>American<br>French                                                                      | BS 1832 Grade A and O<br>DM 3754 IT 400<br>ASTM F104-F112351 M8<br>NFT 48001 Cat. D.                                                                    | <b>Minimum tensile</b><br><b>Strength (cross grain)</b><br>35 N/mm <sup>2</sup><br><b>Specific gravity</b><br>1.95 g/cm <sup>3</sup><br><b>Compressibility</b><br>ASTM F364<br>ASTM F364<br>ASTM F364<br>ASTM F364<br><b>Recovery</b><br>55%<br><b>Stress relaxation</b><br>30 N/mm <sup>2</sup> | ASTM F152<br>ASTM F152<br>ASTM F364<br>ASTM F364<br>BS 1832   | <b>Thickness increase</b><br>ASTM Oil 3<br>ASTM Fuel A<br>ASTM Fuel B<br>5 hours 150°C<br>5 hours 20°C<br>5 hours 23°C<br>20%<br>0-10%<br>15% |
| <br><b>UKL® Universal (3XA)</b> | Top quality universal service sheet suitable for nearly all media such as : hydrocarbons, alkalines and medium strong acids. Composed of NBR binder and high grade chrysotile asbestos. Particularly suitable for use in aviation industry, automotive fluids.<br>Colour : Blue.<br>† Do not retorque fasteners at cryogenic temperatures                                                                                                                                                                        | <b>Max. Temperature</b><br>150°C<br><b>Max. Pressure</b><br>140 bar<br><b>Min. Temperature</b><br>-200°C<br>(Indian Standard<br>IS 2712 / 1995 : Gr. O1 & W1) | British<br>German                                                                                            | BS 1832 Grade A and O<br>BS F125 (Types 1 and 3)<br>DM 3754 IT 400<br>ASTM F104-F112120 M8<br>DM 3754 IT 0<br>ASTM F104-F112121 M8<br>NFT 48001 Cat. D. | <b>Minimum tensile</b><br><b>Strength (cross grain)</b><br>42 N/mm <sup>2</sup><br><b>Specific gravity</b><br>1.95 g/cm <sup>3</sup><br><b>Compressibility</b><br>ASTM F364<br>ASTM F364<br>ASTM F364<br>ASTM F364<br><b>Recovery</b><br>55%<br><b>Stress relaxation</b><br>30 N/mm <sup>2</sup> | ASTM F152<br>ASTM F152<br>ASTM F364<br>ASTM F364<br>BS 1832   | <b>Thickness increase</b><br>ASTM Oil 3<br>ASTM Fuel A<br>ASTM Fuel B<br>5 hours 150°C<br>5 hours 20°C<br>5 hours 23°C<br>8%<br>0-10%<br>12%  |
| <br><b>UKL® 1000</b>            | Top grade material based on UKL 3XA, but reinforced with wire mesh for demanding extreme services. Especially suitable for use in reinforced for applications where high pressure and high temperature are encountered. These materials might occur in automotive applications. Composed of SBR binder and high grade chrysotile asbestos. Delivered with graphited surfaces.<br>Colour : Graphite black.                                                                                                        | <b>Max. Temperature</b><br>550°C<br><b>Max. Pressure</b><br>200 bar                                                                                           | There are no standards to cover wire reinforced materials. However refer to UCL 3XA for typical properties   |                                                                                                                                                         | <b>Minimum tensile</b><br><b>Strength (cross grain)</b><br>33 N/mm <sup>2</sup><br><b>Specific gravity</b><br>2.1 g/cm <sup>3</sup><br><b>Compressibility</b><br>ASTM F364<br>ASTM F364<br>ASTM F364<br>ASTM F364<br><b>Recovery</b><br>50%<br><b>Stress relaxation</b><br>31 N/mm <sup>2</sup>  | ASTM F152<br>ASTM F152<br>ASTM F364<br>ASTM F364<br>BS 1832   | As there are no standards to cover wire reinforced materials, refer to UCL 3XA for typical properties                                         |
| <br><b>UKL® Oilitt (3XA)</b>    | Top quality oil and petrol resistant material suitable for fuels, oils, solvents including aromatic and chlorinated hydrocarbons for high mechanical and thermal demand. Excellent resistance and compatibility for natural and town gas, water, steam, alkalines, acids, organic acids, inorganic acids. Widely used in the chemical industry.<br>Composed of chrysotile asbestos and NBR binder. <b>Also available in metallic</b><br>Colour : Black.<br>† Do not retorque fasteners at cryogenic temperatures | <b>Max. Temperature</b><br>500°C<br><b>Max. Pressure</b><br>130 bar<br><b>Min. Temperature</b><br>-200°C<br>(Indian Standard<br>IS 2712 / 1995 : Gr. O1 & W1) | British<br>German<br>American<br>French<br>Approved by the Motor Research Council for use with potable water | BS 1832 Grade A and O<br>DM 3754 IT 0<br>ASTM F104-F112120 M8<br>NFT 48001 Cat. D.                                                                      | <b>Minimum tensile</b><br><b>Strength (cross grain)</b><br>38 N/mm <sup>2</sup><br><b>Specific gravity</b><br>1.95 g/cm <sup>3</sup><br><b>Compressibility</b><br>ASTM F364<br>ASTM F364<br>ASTM F364<br>ASTM F364<br><b>Recovery</b><br>55%<br><b>Stress relaxation</b><br>30 N/mm <sup>2</sup> | ASTM F152<br>ASTM F152<br>ASTM F364<br>ASTM F364<br>BS 1832   | <b>Thickness increase</b><br>ASTM Oil 3<br>ASTM Fuel A<br>ASTM Fuel B<br>5 hours 150°C<br>5 hours 20°C<br>5 hours 23°C<br>6%<br>0-1%<br>8%    |
| <br><b>UKL® Aciditt Plus</b>    | High quality acid resistant material based on chrysotile asbestos and special binder suitable with strong organic and inorganic acids. Widely used in the chemical industry.<br>Colour : White                                                                                                                                                                                                                                                                                                                   | <b>Max. Temperature</b><br>400°C<br><b>Max. Pressure</b><br>100 bar<br><b>Min. Temperature</b><br>-200°C<br>(Indian Standard<br>IS 2712 / 1995 : Gr. A1)      | British<br>German<br>American<br>French                                                                      | DM 3754 IT S<br>ASTM F104-F112000<br>NFT 48001 Cat. E.                                                                                                  | <b>Minimum tensile</b><br><b>Strength (cross grain)</b><br>30 N/mm <sup>2</sup><br><b>Specific gravity</b><br>1.90 g/cm <sup>3</sup><br><b>Compressibility</b><br>ASTM F364<br>ASTM F364<br>ASTM F364<br>ASTM F364<br><b>Recovery</b><br>50%                                                     | ASTM F152<br>ASTM F152<br>ASTM F364<br>ASTM F364<br>ASTM F364 | <b>Thickness increase</b><br>90% Sulphuric acid<br>95% Nitric acid<br>50% Minc acid<br>Not suitable<br>15%                                    |
| <br><b>UKL® 100</b>             | High quality grade similar to UKL 3XA widely used in the petro-chemical industry. Especially suitable for steam, gas, water, alkalines and other non-aggressive media. Composed for chrysotile asbestos and SBR binder.<br>Colour : Grey<br>† Do not retorque fasteners at cryogenic temperatures                                                                                                                                                                                                                | <b>Max. Temperature</b><br>510°C<br><b>Max. Pressure</b><br>100 bar<br><b>Min. Temperature</b><br>-200°C<br>(Indian Standard<br>IS 2712 / 1995 : Gr. W1 & O2) | British<br>German<br>American<br>French                                                                      | BS 1832 Grade A and O<br>DM 3754 IT 400<br>ASTM F104-F112351 M8<br>NFT 48001 Cat. D.                                                                    | <b>Minimum tensile</b><br><b>Strength (cross grain)</b><br>30 N/mm <sup>2</sup><br><b>Specific gravity</b><br>1.95 g/cm <sup>3</sup><br><b>Compressibility</b><br>ASTM F364<br>ASTM F364<br>ASTM F364<br>ASTM F364<br><b>Recovery</b><br>55%<br><b>Stress relaxation</b><br>29 N/mm <sup>2</sup> | ASTM F152<br>ASTM F152<br>ASTM F364<br>ASTM F364<br>BS 1832   | <b>Thickness increase</b><br>ASTM Oil 3<br>ASTM Fuel A<br>ASTM Fuel B<br>5 hours 150°C<br>5 hours 20°C<br>5 hours 23°C<br>25%<br>5-15%<br>17% |
| <br><b>UKL® SOE</b>             | A Medium Grade Product for hydrocarbon service, fuels and oil solutions. Good resistance for medium pressure gases, water, steam, alkalines & acids.<br>Colour : Black                                                                                                                                                                                                                                                                                                                                           | <b>Max. Temperature</b><br>400°C<br><b>Max. Pressure</b><br>80 bar<br><b>Min. Temperature</b><br>-200°C<br>(Indian Standard<br>IS 2712 / 1995 : Gr. O1)       | German                                                                                                       | DM 3754 IT 0                                                                                                                                            | <b>Minimum tensile</b><br><b>Strength (cross grain)</b><br>22 N/mm <sup>2</sup><br><b>Specific gravity</b><br>1.95 g/cm <sup>3</sup><br><b>Compressibility</b><br>ASTM F364<br>ASTM F364<br>ASTM F364<br>ASTM F364<br><b>Recovery</b><br>40%<br><b>Stress relaxation</b><br>25 N/mm <sup>2</sup> | ASTM F152<br>ASTM F152<br>ASTM F364<br>ASTM F364<br>BS 1832   | <b>Thickness increase</b><br>ASTM Oil 3<br>ASTM Fuel A<br>ASTM Fuel B<br>5 hours 150°C<br>5 hours 20°C<br>5 hours 23°C<br>10%<br>12%          |
| <br><b>UKL® 200</b>           | Good quality suitable for most applications of steam, gas, water, alkalines and other non-aggressive media under less demanding conditions. Composed of chrysotile asbestos fibre bonded with SBR.<br>Colour : Red/Brown.                                                                                                                                                                                                                                                                                        | <b>Max. Temperature</b><br>400°C<br><b>Max. Pressure</b><br>40 bar<br><b>Min. Temperature</b><br>-200°C<br>(Indian Standard<br>IS 2712 / 1995 : W2)           | British<br>German<br>American                                                                                | BS 1832 Grade B<br>DM 3754 IT 200<br>ASTM F104-F112150 M7                                                                                               | <b>Minimum tensile</b><br><b>Strength (cross grain)</b><br>22 N/mm <sup>2</sup><br><b>Specific gravity</b><br>1.95 g/cm <sup>3</sup><br><b>Compressibility</b><br>ASTM F364<br>ASTM F364<br>ASTM F364<br>ASTM F364<br><b>Recovery</b><br>55%<br><b>Stress relaxation</b><br>26 N/mm <sup>2</sup> | ASTM F152<br>ASTM F152<br>ASTM F364<br>ASTM F364<br>BS 1832   | <b>Thickness increase</b><br>ASTM Oil 3<br>ASTM Fuel A<br>ASTM Fuel B<br>5 hours 150°C<br>5 hours 20°C<br>5 hours 23°C<br>30%<br>5-20%<br>20% |
| <br><b>UKL® 80</b>            | Medium quality for general purpose use. Contains chrysotile asbestos fibre bonded with SBR. <b>Also available in metallic</b><br>Colour : Red/Brown                                                                                                                                                                                                                                                                                                                                                              | <b>Max. Temperature</b><br>350°C<br><b>Max. Pressure</b><br>35 bar<br><b>Min. Temperature</b><br>-200°C<br>(Indian Standard<br>IS 2712 / 1995 : Gr. W3)       | British<br>American                                                                                          | BS 1832 Grade B<br>ASTM F104-F112100                                                                                                                    | <b>Minimum tensile</b><br><b>Strength (cross grain)</b><br>13 N/mm <sup>2</sup><br><b>Specific gravity</b><br>2 g/cm <sup>3</sup><br><b>Compressibility</b><br>ASTM F364<br>ASTM F364<br>ASTM F364<br>ASTM F364<br><b>Recovery</b><br>50%                                                        | ASTM F152<br>ASTM F152<br>ASTM F364<br>ASTM F364<br>ASTM F364 | <b>Thickness increase</b><br>ASTM Oil 3<br>ASTM Fuel A<br>ASTM Fuel B<br>5 hours 150°C<br>5 hours 20°C<br>5 hours 23°C<br>25%<br>5-20%<br>15% |
| <br><b>UKL® Style 20</b>      | Medium quality general purpose grade. Suitable for wide range of applications under less demanding conditions. <b>Also available in metallic.</b><br>Colour : Red/Brown.                                                                                                                                                                                                                                                                                                                                         | <b>Max. Temperature</b><br>350°C<br><b>Max. Pressure</b><br>35 bar<br><b>Min. Temperature</b><br>-200°C<br>(Indian Standard<br>IS 2712 / 1995 : Gr. W3)       | British<br>American                                                                                          | BS 1832 Grade B<br>ASTM F104-F112100                                                                                                                    | <b>Minimum tensile</b><br><b>Strength (cross grain)</b><br>13 N/mm <sup>2</sup><br><b>Specific gravity</b><br>2 g/cm <sup>3</sup><br><b>Compressibility</b><br>ASTM F364<br>ASTM F364<br>ASTM F364<br>ASTM F364<br><b>Recovery</b><br>50%                                                        | ASTM F152<br>ASTM F152<br>ASTM F364<br>ASTM F364<br>ASTM F364 | <b>Thickness increase</b><br>ASTM Oil 3<br>ASTM Fuel A<br>ASTM Fuel B<br>5 hours 150°C<br>5 hours 20°C<br>5 hours 23°C<br>25%<br>5-20%<br>15% |
| <br><b>UKL® KLR - 232</b>     | A Medium Range General Purpose Gasket Joining For Steam, Water and Gas Application.<br>Colour : Red / Black                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Max. Temperature</b><br>270°C<br><b>Max. Pressure</b><br>25 bar<br><b>Min. Temperature</b><br>-200°C<br>(Indian Standard<br>IS 2712 / 1995 : Gr. W3)       | —                                                                                                            | —                                                                                                                                                       | <b>Minimum tensile</b><br><b>Strength (cross grain)</b><br>8 N/mm <sup>2</sup><br><b>Specific gravity</b><br>2.15 g/cm <sup>3</sup><br><b>Compressibility</b><br>ASTM F364<br>ASTM F364<br>ASTM F364<br>ASTM F364<br><b>Recovery</b><br>40%                                                      | ASTM F152<br>ASTM F152<br>ASTM F364<br>ASTM F364<br>ASTM F364 | <b>Thickness increase</b><br>ASTM Oil 3<br>ASTM Fuel A<br>ASTM Fuel B<br>5 hours 150°C<br>5 hours 20°C<br>5 hours 23°C<br>45%<br>30%          |

\*Note : Maximum temperature and pressure capabilities do not necessarily operate together for all gasket thickness and service conditions.



## Tolerances

| Nominal Sheet Size | Standard     |              | Reinforced   |              |
|--------------------|--------------|--------------|--------------|--------------|
|                    | Width (mm)   | Length (mm)  | Width (mm)   | Length (mm)  |
| 1.5 X 4.0 M        | 1510 to 1475 | 4100 to 3800 | 1500 to 1450 | 4100 to 3800 |
| 1.5 X 2.0 M        | 1510 to 1475 | 2040 to 1975 | 1500 to 1450 | 2040 to 1975 |
| 1.5 X 1.5 M        | 1510 to 1475 | 1510 to 1475 | 1500 to 1450 | 1510 to 1475 |
| 1.5 X 1.0 M        | 1510 to 1475 | 1020 to 975  | 1500 to 1450 | 1020 to 975  |

### Nominal Thickness

Up to and including 0.5 mm  
Over 0.5 mm, Up to and including 1.0 mm  
Over 1.0 mm, Up to and including 2.0 mm  
Over 2.0 mm

### Tolerances

Plus or Minus 0.05 mm  
Plus or Minus 0.10 mm  
Plus or Minus 0.15 mm  
Plus or Minus 0.20 mm

### Maximum variation within one sheet.

0.05 mm  
0.10 mm  
0.15 mm  
0.20 mm

**Special Tolerances on request.**

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**Also available : UKL Fluid Sealing Division:**

**Graphite Sheets, Expanded PTFE sheets, Full Range of Cut gaskets. Spiral wound Gaskets, Metal Jacked Gaskets, Kammprofile Gaskets. Non Asbestos Gland Packing.**

**Fluid Control Division:**

**Piston Valves, Bellow Sealed Valves. Steam Traps - Thermodynamic/Inverted Bucket/Bimetallic Thermostatic, Ball Float. Strainers "Y" Type, Level Gauges-Reflex & Transparent. Condensate Recovery System, Pressure Reducing Station, Hot Water Generation System.**

In view of technical progress designs and dimensions are subject to change without notice.



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