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## **Material Data Sheet U520-OR95-HT**

### **Polyurethane U520-OR95-HT – orange (High Temp. Polyurethane)**

#### **General**

U520-OR95-HT is a hydrolysis-resistant (H-PU), casted Polyurethane, based on MDI, Polycarbonate Polyol and certain additives. Due to the excellent stability of the physical properties at higher temperatures and outstanding thermal ageing resistance, compared to other Polyurethanes it is recommended for applications where temperature and mechanical stress of the material reach the limits of standard Polyurethanes. U520-OR95-HT has been optimized to withstand the risk of rapid gas decompression (RGD) or explosive decompression (ED) which is an essential demand in the oil and gas industry.

#### **Physical properties**

Density:	DIN 53479	g/cm <sup>3</sup>	1,09 ±0,03
Hardness at 23°C:	DIN 53505	Shore A	96 ±2
Hardness at +100°C:	DIN 53505	Shore A	93 ±2
100% Modulus:	DIN 53504	N/mm <sup>2</sup>	≥ 10
300% Modulus:	DIN 53504	N/mm <sup>2</sup>	≥ 25
Tensile strength:	DIN 53504	N/mm <sup>2</sup>	≥ 45
Elongation at break:	DIN 53504	%	≥ 350
Tear strength:	DIN 53515	kN/m	≥ 110
Compression set, 24h, 70°C, 25%:	DIN 53517	%	≤ 25
Compression set, 24h, 100°C, 25%:	DIN 53517	%	≤ 30
Compression set, 24h, 125°C, 25%:	DIN 53517	%	≤ 65

**Temperature range:** -30°C to 135°C

#### **Chemical resistance**

Resistant to: Water up to 90°C, Sea Water, Mineral Oils, Vegetable Oils, Silicone Oils, Ozone, Oxygen (cold), HFA fluids, HFB fluids, diluted Acids and Lyes

Not Resistant to: Steam, conc. Acids and Lyes, conc. Alcohols, Solvents, HFD fluids

#### **Main application**

Static and dynamic applications, mostly used for U-seals, wipers, packings and oil seals up to 400 bar pressure in various applications. Especially in those where the combination of temperature, pressure and wear resistance of rubber and other polyurethane materials reach their limits, but also where heat generation because of friction is expected.

#### **Rapid Gas Decompression (RGD) validation:**

The compound has passed the RGD test at Element UK with the highest possible rating of **0000**.

Test conditions, according Norsok M-710, were 8 decompressions cycles with 90% Methane + 10% Carbon dioxide gas at 100° C and 150 bar test pressure.