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SILICON CARBIDE MECHANICAL SEAL FACE INFORMATION for Series 4030, 4280, 4300, 4360D, 4380, 4600 and dualArm Pumps

Some of the excellent seal face material properties inherent in **Silicon Carbide** include:

- Silicon Carbide (SiC) is one of the hardest high-performance materials available. Second only to diamonds! System abrasive particulate causes most seal failures on problem systems by becoming embedded in the 'soft' carbon face then grinding on the hard face until the seal fails. Tungsten Carbide (TC) is the 'old technology' hard material that is typically used to delay failures on difficult systems. The new technology uses SiC, which outperforms TC at every turn.

  See the material hardness comparison document on page 2.

- SiC has extremely high strength and excellent resistance to 'creep' and stress rupture at extreme temperatures to 3000°F (1650°C). You can imagine how stable it is in an HVAC environment at less that 10% these temperatures.

- SiC weighs less than half as much as most metal alloys. It weighs about the same as the seal carbon ring.

- The extreme hardness and density of SiC makes it ideal for applications where parts are subject to high abrasion and sliding wear, particularly mechanical seal faces.

- The high thermal conductivity of SiC, combined with its low thermal expansion produces excellent thermal-shock resistance, far better than Aluminum Oxide (Ceramic) or Tungsten Carbide.

- The high density, low porosity and chemical inertness of SiC permit it to function in environments of hot gases and liquids, oxidizing and corrosive atmospheres, and in strong acids and bases, even at extremely high temperature. If SiC can stand up to those extremes just imagine the life cycle value increase in moderate HVAC system conditions.

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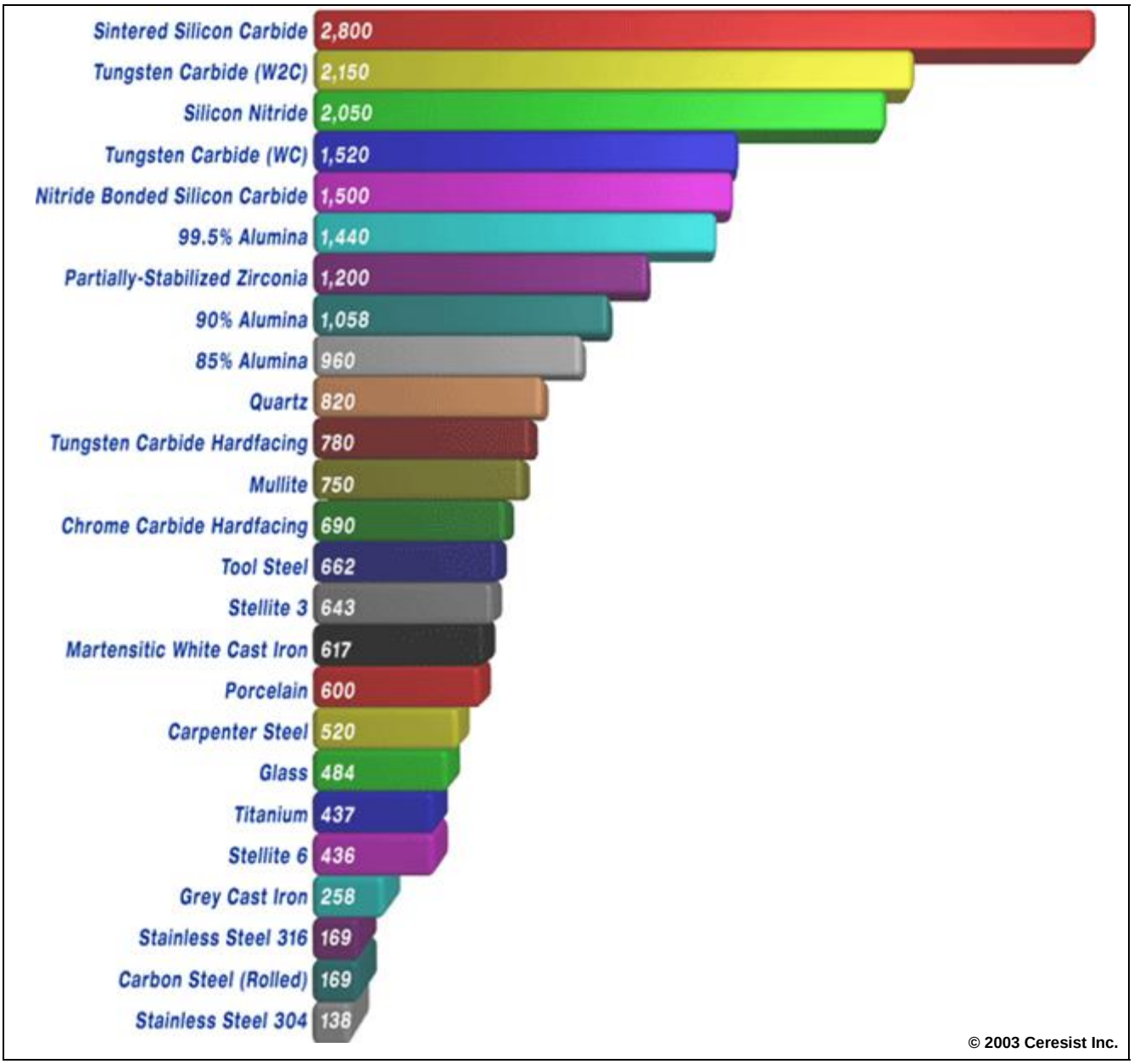
Hardness Comparison

The hardness of any given material is only one of many factors that must be taken into account when recommending a suitable material for erosive or abrasive service. Some of the factors that will affect longevity are angle of impingement, velocity, material smoothness, and so on. Nevertheless, the chart below offers a sound comparison of the expected service life of various materials neglecting other influences or factors.

For comparison, the hardness of natural diamond is approximately 8,000 Knoop.

Knoop Hardness Comparison Chart



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