# TECHNICAL CERAMICS FOR THE OIL & GAS INDUSTRY

Extreme pressures, aggressive media and high temperatures push conventional materials to their limits. Kyocera's advanced ceramics ensure maximum process reliability, durability and efficiency – even under the harshest operating conditions. With decades of experience in developing and manufacturing components for the oil and gas sector, Kyocera is a trusted partner when highly specialized solutions are required.

## Application Areas

**Pumps & Valves**

Pump liners, plungers, valves, nozzles, tubes, cylinders, and erosion-resistant components

**Sealing & Bearing Technology**

Mechanical seal rings, bearings, sealing rings and sliding discs – also for use in highly aggressive media.

**Sensor & Measurement Technology**

Sensor housings, insulators, feedthroughs and measurement/control components for demanding environments.

**High-Temperature- & Insulaation Applications**

Components for downhole operations, drill heads, and insulating parts designed for high-pressure / high-temperature conditions.

## Ceramic Materials for the Oil & Gas Industry

**Silicon Carbide (SSiC)**
- Outstanding chemical resistance
- Excellent corrosion resistance, even at very high operating temperatures
- Excellent mechanical strength at elevated temperatures

**Silicon-Infiltrated Silicon Carbide (SiSiC)**
- Outstanding chemical resistance
- Very high thermal conductivity
- High stiffness
- Suitable for complex geometries and lightweight structures, including 3D-optimized designs

**Silicon Nitride ($Si_3N_4$)**
- High strength and toughness
- Excellent thermal shock resistance
- Low coefficient of thermal expansion
- Resistant to corrosive and erosive media

**Alumina ($Al_2O_3$)**
- High strength and dimensional stability
- Excellent corrosion resistance at elevated temperatures
- High electrical resistivity

**Zirconia ($ZrO_2$)**
- Very high fracture toughness
- High bending and tensile strength
- Outstanding wear resistance
- High compressive strength

**Data sheets for our materials can be found at www.kyocera-fineceramics.de/materials**

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