

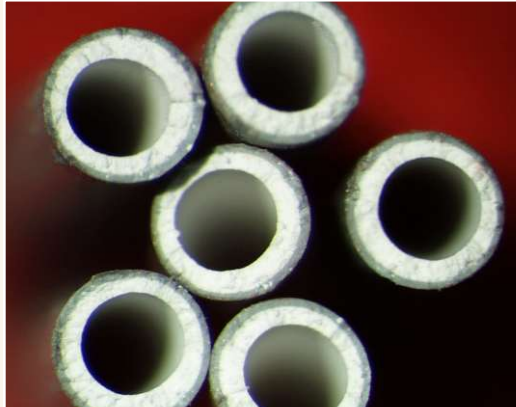


smartcel™ **ceramic** combines smartcel design with ceramic materials. Even complex textile ceramics can be manufactured cost-efficiently and flexibly. A ceramic powder (oxidic or non-oxidic) is combined with cellulose, formed and sintered thereafter. The result is a product which is fully ceramic in fiber, fabric and fleece.

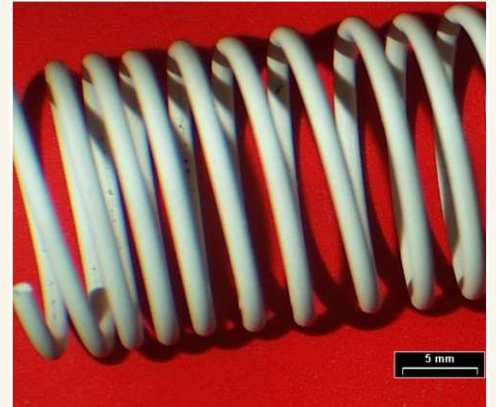
smartcel™ **ceramic** has a wide variety of possible applications. The sintered PZT ceramic fiber stretches when exposed to alternating voltage, thereby producing sound waves. Consequently, this fiber is used in ultrasound technology. Composite fiber components based on smartcel™ **ceramic** are used in medicine. Also, various sports accessories, such as tennis rackets or winter sports equipment, are reinforced by smartcel™ **ceramic** fibers, which in these applications have a vibration-damping effect.

## Fields of application

- Ultrasound technology (sonar systems for locating obstructions,
- Monitoring sea areas and harbours, locating shoals of fish, material testing);
- Medical technology (ultrasonic measuring heads for imaging body organs, duplex sonography, medical diagnosis);
- Sports equipment (tennis rackets, skis, snowboards);
- Substrates for catalytic converters, membrane modules, material separation, fuel cells, material testing.



**hollow structure**



**spiral structure**

smartcel™ ceramic is available as fleeces, filaments, fabrics and hollow structures. smartcel™ ceramic features high chemical and thermal consistency.

## Types of green fibers

Type of powder	Type- No.	Type of fiber	Proportion PZT-cellulose : powder (mass)	Diameter of green fibers, μm	Form of green fibers
SP 505	1	round	1 : 7	25	endless coil or fiber strand
	2	round	1 : 7	30	endless coil
	3	round	1 : 7	140	length 10 cm
	4	round	1 : 20	320	length 20 cm
	5	round	1 : 20	1030	length 20 cm
	6	hollow	1 : 20	1400 outside/ 850 inside	length 20 cm
	7	hollow	1 : 20	660 outside/ 320 inside	length 20 cm
SP 53	8 + 9	round	1 : 7 + 1 : 20	140	length 10 cm
	10	round	1 : 20	320	length 20 cm
	11	round	1 : 20	1030	length 20 cm
SP 4	12	round	1 : 20	320	length 20 cm
	13	round	1 : 20	1030	length 20 cm
SP 5	14	round	1 : 20	320	length 20 cm
	15	round	1 : 20	1030	length 20 cm
SP 8	16	round	1 : 20	320	length 20 cm
	17	round	1 : 20	1030	length 20 cm

Other diameters or fiber lengths are available upon request