

1979-2019 40 YEARS OF GERMAN ENGINEERING



TRANSCERAM
HIGH PRECISION

Mechanical seals ▷ Bearings
▷ Pump- and Valve components
▷ Rotating systems

For these applications we supply following materials:

Tungsten Carbide

- TC with Ni-binder (6, 8, 10 and 12 %)
- TC with Co-binder (3 to 30 %)
- TC with NB-binder (0,4 to 2 %)

Ceramics

- SSiC (Alpha-SiC), DLC possible
- SiSiC (SiC with 8-12 % free Si)
- SSiCC (SSiC with C)
- Al_2O_3 (99,7 %)
- Si_3N_4
- ZrO_2 (Yttria- or MgO-partially stabilized)

Carbon / Graphite

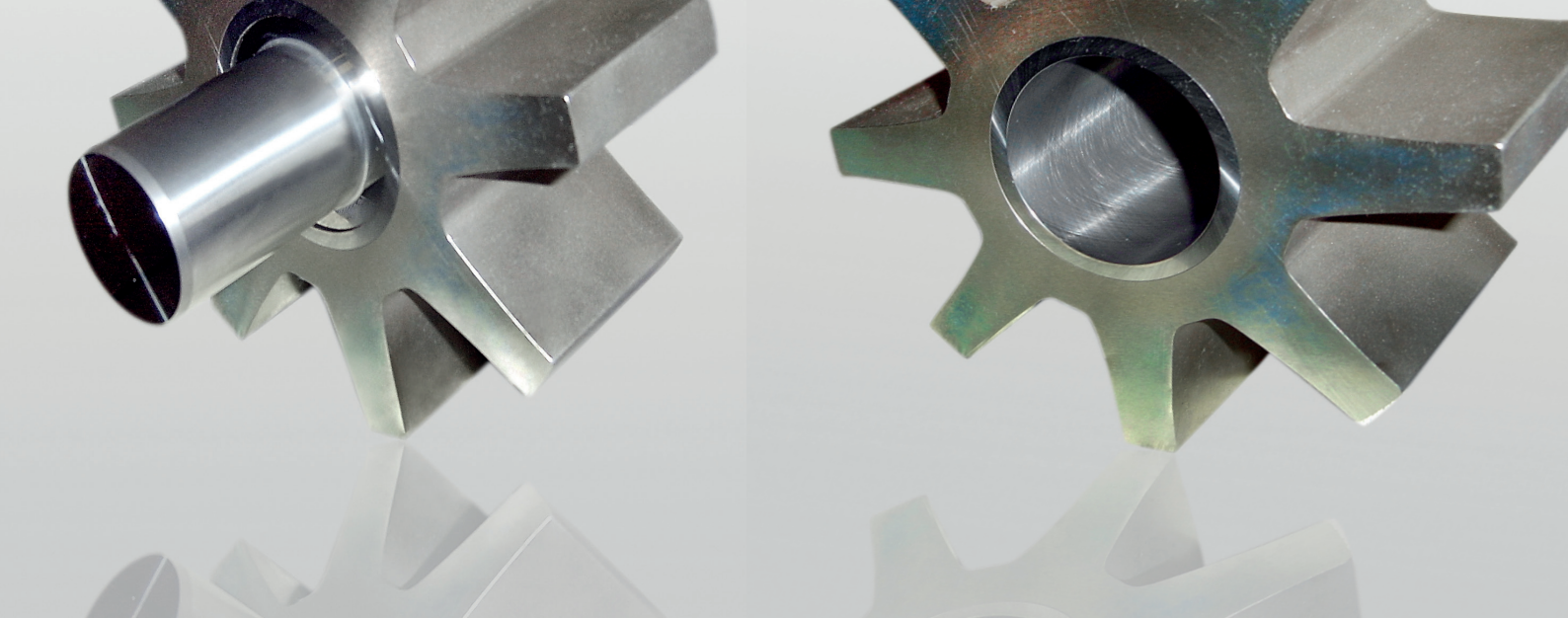
- Graphite (Bronze-, Copper-, Babbitt- or Nickel impregnated)
- Graphite (Teflon or plastic impregnated)

Connection Systems and Materials

As joining method with steel-cases there are brazing, glueing, press fitting or shrink- fitting. Only tungsten carbide can be brazed. All other materials can be joint with steel only by glueing or shrink-fitting. As temperature range for use we recommend a range of 200°C. A wider range of temperature requires other concepts.

The different thermal expansion coefficients in relation to steel should be considered. The best solution for required chemical resistance is SSiC or TC-NB. All other materials are not generally resistant.

High-precision quality products
Ceramics
Carbide
Special alloys



MATERIAL description	Binder	Hardness HV	Density g/cm ³	Bending strength N/mm ²	Compression strength N/mm ²	Chemical resistance
TC-NB	max. 1 %	N/A	N/A	1,030	6,000	very good
CD-20	3 % Co	1,850	15.1-15.35	1,240	4,550	PH 3-9
TC-5S (1% Cr ₃ C ₃)	5 % Co	1,950	14.95-15.1	2,070	6,270	PH 3-9
TC-6C	6 % Co	1,710	14.8-15.0	1,790	4,760	PH 3-9
TC-6N	6 % Ni	1,675	14.8-15.0	1,720	4,800	PH 3-12
TC-10N	10 % Ni	1,650	14.4-14.6	1,800	3,790	PH 3-12
TC-12N	12 % Ni	1,380	14.2-14.45	2,200	2,760	PH 3-12
TC-NM12 (not magnetic)	12 % Ni	1,380	14.2-14.45	2,200	2,760	PH 3-12
SSiC		2,400	3.10	550	2,200	very good
SiSiC	8-12% Si	2,200	3.05	420	2,300	partially good
SSiCC		1,100	2.65	200	1,800	very good
Al ₂ O ₃ 99,7%		2,000	3.89	330	2,100	good up to PH9
ZrO ₂ (Yttria-PSZ)		1,300	6.05	550	1,700	partially good
ZrO ₂ (MgO-PSZ)		1,200	5.60	800	2,000	partially good
Si ₃ N ₄		1,550	3.21	750	3,000	partially good
Graphite (Metal impregnated)		290 min	1.7 bis 3.5	-	175	partially good
Graphite (Teflon impregnated)		230 min	1.7 bis 3.5	-	175	partially good

Your partner for success



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