

Material Technical Data Sheet

WixSteel Industrial – 16MnCr5

Material No.:	Former brand name:	International steel grades:
1.7131	EC 80	BS: 527M17, 590M17
1.7139		GB: 16CrMnH
		SAE: 5115

Material group: Case hardening steels according to DIN EN 10084

Chemical composition:
(Typical analysis in %)

	C	Si	Mn	P	S	Cr
16MnCr5	0.15	0.20	1.23	≤0.30	≤0.30	1.05
16MnCr5(ESU)	0.15	0.20	1.23	≤0.0015	≤0.0015	1.05

Application: Alloyed case hardening steel for parts with a required core tensile strength of 800 - 1100 N/mm² and good wearing resistance as piston bolts, camshafts, levers and other vehicle and mechanical engineering components.

Hot forming and heat treatment:

Forging or hot rolling:	1100 - 850°C
Normalising:	840 - 870°C/air
Soft annealing:	650 - 700°C/furnace
Carburising:	880 - 980°C
Core hardening:	860 - 900°C/oil
Intermediate annealing:	650 - 700°C
Case hardening:	780 - 820°C/oil
Tempering:	150 - 200°C

Mechanical Properties:

Treated for cold shearability, +S:	Shearable in as rolled condition
Soft annealed, +A:	max. 207 HB
Treated for strength, +TH:	156 - 207 HB
Treated for ferrite and pearlite structure and hardness range, +FP:	140 - 187 HB

after hardening and tempering at 200°C:

Diameter d [mm]	d ≤ 16	16 < d ≤ 40	40 < d ≤ 100
Tensile strength R _m [N/mm ²]	min. 1000	min. 900	min. 700