Investment casting materials
Case-hardening steels

				Mechanical-technological characteristics			Hardness	
Designation	Material no.	Standard	Common heat treatment condition	0,2 Yield strength $RP_{0,2}$	Tensile strenght RM (MPA)	Elon-gation A_5 (%)	Glow hardness (HB)	Application/ particular use cases
C 15	1.0401	DIN 17210 EN 10084	case-hardened	≥ 430	700-900	≈12	143	parts for general mechanical engineering with low core strength; levers
14 NiCr 14	1.5752	WL 1.5752	case-hardened	≥ 835	930-1.230	≈10	190	components insensitive to impact stress, cold-tough; high core strength even with thick cross-sections; pinion shafts, cones
GS 15 CrNi 6	1.5919 1.5924	DIN 17210 WL 1.5924	case-hardened	≥ 680	1.000-1.300	≈8		highly stressed parts with lower wall thicknesses, poorer through-hardening 1.5924 WL 1.5924 compared to 14 NiCr 14
18 CrNi 8	1.5920 1.5934	WL 1.5934	case-hardened	≥ 785	1.180-1.420	≈7	190	highly stressed machine components, better through-hardening compared to 17 CrNiMo 6, therefore particularly suitable for larger parts
17 CrNiMo 6	1.6587	DIN 17210 EN 10084	case-hardened	≥ 785	1.050-1.350	≈8	183	highly stressed machine components, very good wear resistance
15 Cr 3	1.7015	DIN 17210 EN 10084	case-hardened	≥ 440	690-880	≈11	174	machine components subject to medium stress, higher core strength compared to C 15; roller bearings, measuring tools
17 Cr 3	1.7016	DIN 17210 EN 10084	case-hardened	≥ 450	750-1.050	≈11	174	similar to 15 Cr 3, but slightly higher core strength; parts in vehicle construction
GS 16 MnCr 5	1.7131	DIN 17210 EN 10084	case-hardened	≥ 600	800-1.100	≈10	164	standard quality for medium and highly stressed components with not too large DIN EN 10084 cross-sections; gear wheels, control parts
16 MnCrS 5	1.7139	DIN 17210 EN 10084	case-hardened	≥ 600	800-1.100	≈10	164	similar to 16 MnCr 5; better and more uniform machining possible due to adjusted sulphur content
GS 20 MnCr 5	1.7147	DIN 17210 EN 10084	case-hardened	≥ 680	1.000-1.300	≈8	178	similar to 16 MnCr 5, but suitable for larger cross-sections or higher core strengths