

1.5714, 16NiCr4, 637M17 EN 10084 - Special steels

Datasheet

1.5714, 16NiCr4, 637M17 EN 10084: 2008 Case hardening carburizing steel application on parts requiring high core strength, structures subject to abrasion and variable loads, typically used for small parts such as heavy-duty sprockets, screws, pins, shafts, spigots, machine parts, cars and motors.

Chemical Composition

Grade	Chemical composition WT %								
	C	Mn	Si	P	S	Cr	Mo	Ni	Cu
1.5714, 16NiCr4	0.13 - 0.19	0.70 - 1.00	max 0.40	max 0.025	max 0.035	0.60 - 1.00		0.80 - 1.10	
1.5715, 16NiCrS4	0.13 - 0.19	0.7 - 1.0	max 0.4	max 0.025	0.02 - 0.04	0.6 - 1.0		0.8 - 1.1	
637H17, 637M17	0.14 - 0.20	0.60 - 0.90	0.10 - 0.35	max 0.035	max 0.04	0.60 - 1.00		0.85 - 1.25	
18ChGN1, 18KhGN1, 18XГH1	0.16 - 0.21	0.60 - 0.90	max 0.40	max 0.025	max 0.035	0.90 - 1.20		1.20 - 1.50	
19ChGN, 19KhGN, 19XГH	0.16 - 0.21	0.70 - 1.00	0.17 - 0.37	max 0.035	max 0.035	0.80 - 1.10	max 0.1	0.80 - 1.10	max 0.3

sales@longhaisteel.com

+86-13880247006

Mechanical Properties

Mechanical properties for conditions

- +A: max 217 HBW
- +TH: 166 - 217 HBW
- +FP: 156 - 207 HBW
- +S: max 255 HBW
- +A Soft annealed
- +TH Treated to hardness range
- +FP Treated to ferrite-pearlite structure and hardness range
- +S Treated to improve shearability
- Tensile strength R_m : ≥ 1030 MPa
- Yield strength R_p : ≥ 830 MPa
- Elongation A: min 11%

- Hardness: +A max 229 HBW
- Impact strength, KU2 min 56J

Physical Properties

Heat Treatment

- Austenitizing: 30 - 35 min , 880°C
- Carburizing 880 - 980°C
- Core-hardening 850 - 890°C
- Case-hardening 780 - 820°C
- Tempering 1 h minimum 150 - 200°C

Welding Properties

Machining Properties

Similar or Equivalents Steel Grade

16NiCr4, 1.5714, 16 NiCr 4, 5714, 19ChGN, 19KhGN, 19XГH, 637H17, 637 H 17, 18ChGN1, 18KhGN1, 18XГH1, ČSN 16 121, ČSN 16121, 15HGN, 16NiCrS4



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