

EN19 / 709M40

42CrMo4 1.7225 AISI 4140 SCM440

MATERIAL DATA SHEET

Parkside Steel

(Stockholders) Ltd

ISO 9001 | BSI FS 86692

Est. 1977 | Co. 01325509

01623 687 660

OVERVIEW

EN19 is the most widely used alloy steel in UK engineering. The Cr-Mo alloying gives high tensile strength, excellent hardenability, good fatigue resistance and adequate toughness. Through-hardens to 65mm section. Used wherever higher performance than EN8 is required.

TYPICAL APPLICATIONS

- High-tensile shafts
- Crankshafts and camshafts
- Gears and pinions
- Valve stems
- Hydraulic components
- Automotive drivetrain

SUPPLY & PROCESSING

Supply: Bright round bar 8-100mm. Black round bar 25-500mm. Hexagon bar.

Condition: Normalised. Q+T to 850-1000 N/mm2 available.

Weldability: Fair. Preheat 200-300C. Post-weld stress relief recommended.

Machinability: Good. 60-90 m/min carbide.

Certification: 2.2 Test Report standard. 3.1 on request.

GRADE EQUIVALENTS

Standard	Designation
BS EN 10083-3:2006	42CrMo4 / 1.7225
BS 970:1991 (withdrawn)	708M40 / 709M40
AISI/SAE	4140 / 4142
DIN	42CrMo4 / 1.7225
JIS	SCM440

CHEMICAL COMPOSITION (% by weight)

Designation	C	Si	Mn	P max	S max	Cr	Mo
709M40	0.36–0.44	0.10–0.35	0.70–1.00	0.035	0.040	0.90–1.20	0.25–0.35
42CrMo4	0.38–0.45	0.17–0.37	0.60–0.90	0.035	0.035	0.90–1.20	0.15–0.30

MECHANICAL PROPERTIES

Condition	Size (mm)	Tensile Rm (N/mm²)	Yield Re (N/mm²)	A% min	HB approx
H&T; (T)	≤16 / >16–40 / >40–63 / >63–100	1000–1200 / 900–1100 / 800–1000 / 750–950	≥800 / ≥650 / ≥550 / ≥500	10 / 11 / 12 / 13	295–350
Normalised	All	~850	~550	~14	~248

Indicative values. Properties vary by section size and heat treatment condition. Confirm with Parkside Steel.

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