

## CHROMIUM-NICKEL-MOLYBDENUM ALLOY STEEL BAR

### TYPICAL APPLICATIONS

Aircraft landing gear, engine components, crankshafts, axles. Intended for parts with sections 3 1/2" or less in thickness at time of heat treatment, which require a through-hardening steel capable of developing minimum hardness of Rockwell "C" 30. Premium aircraft quality is intended for use in the manufacturing of highly stressed parts at higher strength levels, such as 260/280 ksi and where a much cleaner steel is desired.

### PRODUCT DESCRIPTION

This chromium-nickel-molybdenum alloy is a widely used deep-hardening constructional steel. It is used at a variety of strength levels and at each level possesses remarkable ductility and toughness. With its high alloy content uniform hardness is developed by heat treatment in relatively heavy sections. High fatigue strength makes E-4340 ideal for highly stressed parts. It maintains its strength and hardness at elevated temperatures.

This grade is available as electric furnace vacuum degassed steel to meet the high aircraft quality standards of AMS 2301. Thus, it is suitable for the fabrication of parts, which may be subjected to magnetic particle inspection.

This grade is also available as a Premium Aircraft Quality product. The regular aircraft quality material is remelted in a vacuum using consumable electrode practice. This results in a much cleaner steel meeting the magnetic particle test requirements of AMS-2300 and insures a steel of the highest quality with excellent transverse ductility and toughness at high strength levels.

The density of this material is typically 7.85kg/dm<sup>3</sup>.

### RELATED SPECIFICATIONS

SAE 4340  
UNS G43400

### STOCK RANGE

**Round Bar** : 1/4" to 14" Diameter  
(6.35 to 355.6mm)  
(Various conditions)

Various in flat, square & hexagon.

### CUT TO SIZE SAWN BLANKS

Cut to Length + 1.0mm - NIL

### MACHINABILITY

Average cutting speed 95 ft/min. 50% for annealed and cold drawn conditions. Based on 100% for AISI 1212 steel.

### CORROSION RESISTANCE

Low to medium resistance to corrosion.

### WELDABILITY

Fair.

### PRODUCTION TOLERANCES

Manufacturing limits are as stated in the Table AMS 2251. For further assistance please contact our Sales Dept / Laboratory.

### CHEMICAL COMPOSITION (WEIGHT %)

	C	Mn	Si	P	S	Cr	Ni	Mo	Cu
Min	0.38	0.65	0.15			0.70	1.65	0.20	
Max	0.43	0.85	0.35	0.025	0.025	0.90	2.00	0.30	0.35

### MECHANICAL PROPERTIES

Maximum Brinell Hardness : 322 HB

Hardness is for bars, forgings and tubing, normalised and tempered. Unless a surface finish is specified, the surface may be furnished hot finished or cold drawn.

### TECHNICAL SALES ASSISTANCE

Our resident team of qualified metallurgists and engineers will be pleased to assist further on any technical topic.

### Advanced Metals International

Unit O, Stratton Business Park, London Road, Biggleswade, Bedfordshire SG18 8QB United Kingdom

Tel: +44 (0) 1767 604 710 Fax: +44 (0) 01767 315 340 Email: sales@advancedmetals.com Website: www.advancedmetals.com

All information in this data sheet is based on approximate testing and is stated to the best of our knowledge and belief. It is presented apart from contractual obligations and does not constitute any guarantee of properties or of processing or application possibilities in individual cases. Our warranties and liabilities are stated exclusively in our terms of trading. © Advanced Metals International 2007