

## MARAGING STEEL

### TYPICAL APPLICATIONS

Missile casings  
Tooling  
Ordnance breach blocks  
High performance autosport components  
Bearings  
Transmission shafts

### MATERIAL SPECIFICATIONS

- UNS K93120
- AMS 6514
- Wr. N 1.6358

### AVAILABILITY

Bar and forgings.

### PRODUCT DESCRIPTION

Type C300 cobalt containing grade of maraging steel, produced by vacuum arc remelting, provides very high strength (nominally 300 ksi tensile) with an above average level of toughness.

The alloy retains its strength up to 450<sup>0</sup>C and good notch impact is maintained down to minus 50<sup>0</sup>C and below. This material may be nitrided.

C300 is usually supplied in the annealed condition where the microstructure consists of fine martensite. This structure is then maraged (precipitation hardened) to achieve final properties employing a relatively low temperature that results in the required combination of high strength and toughness.

The alloy has a density of 8.02 g/cc.

### MACHINING AND WELDING

Maraging steels are usually machined in the annealed condition, however, they can be machined in the maraged condition. Components can be machined close to finished dimensions as the low temperature maraging treatment results in minimal distortion. In addition, the small contraction of approximately 0.05% due to maraging results in good dimensional stability.

C300 steel can be readily welded.

### CORROSION RESISTANCE

The corrosion resistance of C300 maraging steel is similar to that of standard martensitic stainless steels.

### CHEMICAL COMPOSITION

Weight%	C	Si	Mn	Ni	Co	Mo	Al	Ti	Fe
Min.				18.00	8.50	4.60	0.05	0.50	Bal.
Max.	0.3	0.10	0.10	19.00	9.50	5.20	0.15	0.80	

### TYPICAL MECHANICAL PROPERTIES (annealed and maraged condition)

UTS, MPa	2,035
0.2% PS, MPa	2,000
Elongation on 4D, %	12
Charpy notch impact, J	17
Young's modulus, GPa	195

Hardness (HRC) in the annealed condition is 36 max. and for the maraged condition 52 min.

### TECHNICAL SALES ASSISTANCE

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

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