



## CarTech® Temper Tough® Alloy

### TYPICAL COMPOSITION

C	Si	Ni	Cu	Mn	Cr	Mo	V	Fe
.40	1.5	3.8	.50	.85	1.25	.50	.30	Balance

The attributes of CarTech Temper Tough alloy offer a lower cost alternative to cobalt containing precipitation hardened alloys for a variety of general purpose tooling, industrial, and transportation applications, especially those in which designers may be seeking to lighten the weight or increase the longevity of their products.

CarTech Temper Tough alloy is able to attain both a typical ultimate tensile strength of 293 ksi (2023 MPa) and a typical range of toughness between 60 and 65 ksi√in (66-72 MPa√m). CarTech Temper Tough has also demonstrated excellent ductility and resistance to fatigue when compared to traditional quench and temper alloy steels.

This alloy may be considered for applications requiring high strength along with good toughness such as:

- Drive trains
- Power trains
- Structural members
- Off-road construction & mining
- Industrial Tooling
- Fasteners

CarTech Temper Tough alloy is available in a range of bar sizes.

### TECHNICAL DATA

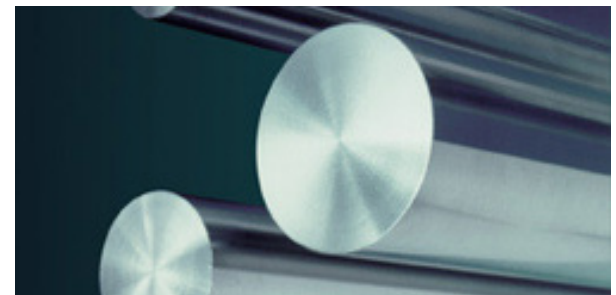
	Typical Gear Materials	High Strength, Heat Treated Steel	CarTech Temper Tough Alloy
0.2% YS (ksi/MPa)	90-203 ksi (550-140 MPa)	145-225	237/1631
UTS (ksi/MPa)	61-151 ksi (420-1040 MPa)	174-268	293/2023
% El	10-13	10	12
% RA	28-36	40	45
10 <sup>7</sup> Cycles Fatigue Strength (ksi/MPa)		79-85	
Fracture Toughness (ksi√in/ MPa√m)		55/60	60-65/66-71
Hardness (HRC)			54

### BENEFITS

- ▶ High Strength
- ▶ High Toughness
- ▶ Strength-to-weight ratio

### PRODUCT FORMS

- ▶ Bar - Rounds



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