

# AISI 4140

LOW ALLOY STEEL

We are a division of the Smiths Metal Centres Limited Group

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AISI 4140 steel is a popular low-alloy steel that contains chromium, molybdenum, and manganese as alloying elements.

The elements improve the mechanical properties of the steel, such as strength, toughness, and wear resistance. Also referred to as SAE 4140, this steel grade has high hardenability, which means it can be heat treated to achieve high strength and hardness levels.

### Chemical Composition (weight, %)

	C	Si	Mn	P	S	Cr	Mo
Min.	0.38	0.15	0.75			0.80	0.15
Max.	0.43	0.35	1.00	0.035	0.040	1.10	0.25

\* Properties as per ASTM A29

### Wear Resistance:

AISI 4140 steel has good wear resistance due to its high carbon content and the addition of chromium and molybdenum to its composition. These elements form hard carbide particles and improve the material's wear resistance and toughness. Overall, the wear resistance of AISI 4140 makes it a suitable material choice for components subject to high wear and abrasion. Proper heat treatment and machining techniques can provide excellent wear resistance and long service life in demanding applications.

### Applications:

The alloy is commonly used in various applications, including automotive and oil drilling components, as well as in the aerospace industry.

### Availability:

We stock AISI 4140 in round and square bars.

### Benefits:

- Improved mechanical properties
- Good wear resistance
- High strength to weight ratio
- Good machinability

### Strength:

One of the main advantages of AISI 4140 steel is its high strength-to-weight ratio. It is an ideal material for use in applications requiring high strength but low overall weight, such as aircraft and automotive components. Additionally, its high toughness and fatigue resistance make it well-suited for use in applications where it will be subjected to repeated stress or strain, such as in gears, shafts, and other mechanical components.

### Machinability:

Our product is also known for its good machinability when annealed. It can be easily machined using conventional machining methods, such as milling, drilling, and turning.

