

42CrMo4 (EN19)

CHROMIUM MOLYBDENUM STEEL

We are a division of the Smiths Metal Centres Limited Group

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42CrMo4 is a type of alloy steel that contains chromium and molybdenum as the main alloying elements.

It is known for its high strength, toughness, and hardenability, making it a popular choice for a variety of applications in the automotive, aerospace, and mechanical engineering industries.

Chemical Composition (weight, %)

	C	Si	Mn	P	S	Cr	Mo
Min.	0.38		0.60			0.90	0.15
Max.	0.48	0.35	0.90	0.035	0.025	1.20	0.30

* Properties as per BS 970

Strength:

The strength of **42CrMo4** steel can vary depending on the specific heat treatment used. Still, it is generally a high-strength steel that offers excellent tensile strength and yield strength. The typical tensile strength of our product is 900-1200 MPa (megapascals), while the yield strength is typically around 600-900 MPa. These high levels of strength make **42CrMo4** suitable for a wide range of applications where strength and durability are important.

Common Use:

42CrMo4 is commonly used to manufacture components such as gears, shafts, axles, bolts, and piston rods that are subject to high stress and wear. It can be heat-treated to achieve increased levels of strength and toughness. It can also be surface-hardened to improve wear resistance.

Availability:

We stock **42CrMo4** in round and square bars.

Benefits:

- High strength
- Good toughness and hardness
- Good wear resistance
- Can be surface hardened

Heat Treating:

The alloy steel can be heat-treated to achieve a high hardness level, making it suitable for applications where wear resistance is essential. The steel is typically quenched and tempered to achieve hardness in the range of 55-62 HRC (Rockwell C scale), which is very high and makes the steel suitable for use in applications where high stress and wear resistance are required.

The presence of chromium and molybdenum forms hard carbides during heat treatment. The steel can also be surface-hardened using techniques such as nitriding, which can further improve its wear resistance properties.