

ALLOY 188 COBALT ALLOY - AMS 5772

Alloy 188 is known for its superior resistance to corrosion and oxidation at elevated temperatures, this is due to its composition, containing significant quantities of cobalt and chromium. This allows Alloy 188 to be well suited for high temperature environments. The alloy maintains structural integrity when exposed to extreme heat, oxidising agents, and corrosive media that would rapidly degrade many conventional materials.

Cobalt Alloy 188 falls under the category of superalloys - an elite family of metallic composites purpose-engineered to endure extraordinarily hostile operating environments and withstand severe mechanical stresses. Standard alloys would rapidly deteriorate under such punishing conditions, yet this superalloy exhibits remarkable resilience in the face of extraordinarily hostile environments that would compromise ordinary materials. Cobalt Alloy 188 exhibits exceptional resilience where standard materials would simply fail.

The presence of chromium, a key component at roughly 22%, allows a tenacious oxide layer to form on the alloy's surface, this acts as a barrier, which prevents corrosion. Cobalt itself is highly resistant to chloride-induced corrosion, a type of degradation that plagues many other alloys.

Industries that rely on Cobalt Alloy 188 include aviation, where it sees use in aircraft engines and hot section components and in the gas industry where it is used in turbine engines.

| Specific Gravity | | | | | | | | | | | | |
|-------------------------------|-------------------|------|------------------|------|------------|------------------------|----------|----|------|-------|----|-----|
| 9.14g/cm ³ | | | | | | | | | | | | |
| Typical Applications | | | | | | Related Specifications | | | | | | |
| Aerospace | | | | | | AMS 5608 | | | | | | |
| Gas Turbine Engines | | | | | | AMS 5772 | | | | | | |
| Chemical Composition (Wt %) | | | | | | | | | | | | |
| | C | Mn | Si | P | S | Cr | Ni | W | La | B | Fe | Co |
| Min | 0.05 | - | 0.20 | - | - | 20 | 20 | 13 | 0.02 | - | - | - |
| Max | 0.15 | 1.25 | 0.50 | 0.02 | 0.015 | 24 | 24 | 16 | 0.12 | 0.015 | 3 | Bal |
| Typical Mechanical Properties | | | | | | | | | | | | |
| | 0.2% Proof Stress | | Tensile Strength | | Elongation | | Hardness | | | | | |
| | MPa | | MPa | | 4D | | HB | | | | | |

| | | | | |
|-------------|-----|-----|-----|-----|
| Bars | 379 | 862 | 45% | 302 |
| | | | | |
| | | | | |

* This data has been supplied in good faith and is indicative only. It has been provided for general information purposes only and is not to be relied upon in place of the full specification. Mechanical properties can vary considerably with different supply conditions such as heat treatment or temper and product dimensions.

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