

Stainless Steel 17-4 PH Datasheet



Overview

Stainless Steel 17-4 PH is a versatile metal widely utilized across numerous industries. Known for its exceptional strength and hardness, it is perfect for specialized sectors like aerospace, tooling, and petrochemicals.

As-printed Part's Tolerance: $\pm 300\mu\text{m}$ or 0.3%

Maximum Printing Size: 320*360*360mm

Properties

Dense Properties	Metric	Method
Relative Density	96.4%	ASTM B923
Mechanical Properties	Metric	Method
Tensile Strength	1230MPa	ASTM E8
Yield Strength	1050MPa	ASTM E8
Elongation at Break	13%	ASTM E8
Tensile Modulus	170GPa	ASTM E8
Hardness	38 HRC	ASTM E18
Other Properties	Metric	Method
Corrosion	PASS	ASTM F1089

Pros

Stainless Steel 17-4 PH is renowned for its high strength, hardness, excellent corrosion resistance, and superior mechanical properties, especially at elevated temperatures, along with impressive thermal capabilities. It is commonly used for producing prototypes, spare parts, and functional components like turbine blades, pumps, and valves.

Cons

It is a more expensive material and somewhat heavier than other metal 3D printing options. Products made from powdered metal tend to have grainy or pitted surfaces.

Applications

Automotive Parts and Supplies

Wrenches and Sockets

Pump Shafts

Mixers and Blenders

Mechanical Seals

Gas Turbines

Jigs and Fixtures

Enclosures and Housings

Load Cells and Screws