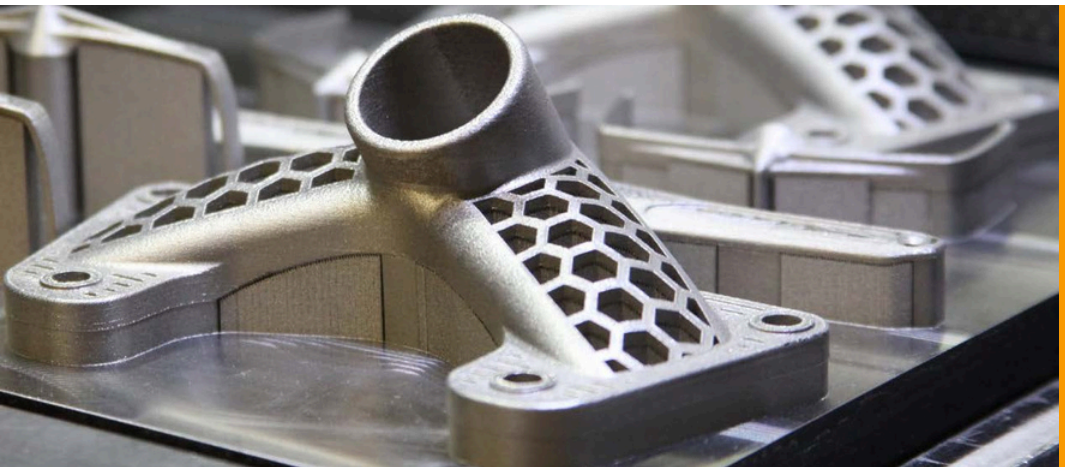
17-4PH Stainless Steel

INDUSTRIAL GRADE MATERIALS FOR SLM 3D PRINTING



MATERIAL NAME
17-4PH Stainless Steel

COLOR
Silvery-gray

PROCESS
SLM

PRODUCT DESCRIPTION

17-4PH Stainless Steel is a martensitic precipitation – hardened stainless steel. It's known for its corrosion resistance and high levels of strength and hardness, especially when heat treated. 17-4PH Stainless Steel can be heat treated to a variety of hardness and toughness levels, allowing users to customize post-sintering properties of the alloy to suit a wide variety of applications, including： manufacturing machinery, chemical processing, food processing, pump components, valving, fasteners, jigs and fixtures.

TYPICAL APPLICATIONS

- Manufacturing machinery
- Food processing
- Valving
- Jigs and fixtures
- Chemical processing
- Pump components
- Fasteners

PRODUCT SAFETY

If there are sharp edges on the surface of the parts, be careful not to scratch them. If there are metal powders on the parts, be careful not to inhale them into the lungs and avoid contact with strong acids and alkalis.

PRODUCT DELIVERY & WAREHOUSING

- **STORAGE**

  Store in a dry, ventilated environment, avoiding moisture and exposure to corrosive chemicals.
  Apply protective coatings to prevent oxidation or corrosion of metal surfaces.

- **USAGE AND HANDLING**

  Remove burrs and residual materials from the product. Use protective equipment like gloves when handling.
  Avoid using the product in extreme environments or high-load scenarios; regularly inspect for mechanical performance.

- **CHEMICAL COMPATIBILITY**

  Avoid contact with strong acids, alkalis, or corrosive solvents. Use appropriate cleaning and maintenance solutions.
  Assess risks of oxidation, corrosion, or magnetic effects based on specific application environments.

MATERIAL PROPERTIES

Formed Part Properties	Value
Hardness	13~16 HRC
Yield Strength (Mpa)	≥1050 Mpa
Tensile strength (Mpa)	≥1100 Mpa
Elongation at break	≥15 Mpa
Heat-Treated Properties	**Value**
Hardness	32~42 HRC
Yield Strength (Mpa)	≥1150 Mpa
Tensile strength (Mpa)	≥1250 Mpa
Elongation at break	≥10%
Elastic Modulus (Gpa)	200 GPa
Other Properties	**Value**
Poisson's Ratio	/
Coefficient of themal expension(/°C)	68~212°F, /°F: 6.0x10-6
Thermal Conductivity	/w/(m.k)100℃-:17.2。w/(m.k)500℃-:23
Electrical Resistivity	Microhm-in: 38.6
Electrical Conductivity	1.4~1.5*106 S/m
Surface Roughness of Formed Parts	RA 6.3~7

Tips: Want to explore a wider range of materials? Check out *https://www.unionfab.com/materials*