Material Information

Stainless Steel 316L

Introduction
Stainless Steel 316L is one of the most widely used metal materials in many industries. It is the superior choice for high-corrosion and high-temperature applications. It is also strong in terms of mechanical properties. It can be 3D printed into various functional end products and prototypes.

Advantages
Corrosion-resistant, high-strength, durable, wear-resistant, food grade.

Disadvantages
More expensive. Less machinable. Relatively heavy compared to other metal 3D printing materials.

Tolerance
±300μm or 0.3%

Recommendation
Stainless steel 316L is widely used for prototypes, spare parts, and functional parts. From watches and jewelry to kitchenware and tableware, and even pipelines and underwater robots, Stainless steel 316L is an essential material for many industries and applications.

Material Specifications		
Hardness	ISO 6597-1:03-2006	200 HV
Density	WGE-Prod-067EN	7.95 g/cm³
Relative density	WGE-Prod-067EN	99.5%
Tensile strength	DIN EN ISO 6892-1:2009	530MPa
Elongation at Break	DIN EN ISO 6892-1:2009	50%
Yield strength	DIN EN ISO 6892-1:2009	340MPa
Elastic modulus	DIN EN ISO 6892-1:2009	180GPa
Roughness Ra	ISO 4287 / AITM 1-00070	15 μm
Roughness Rz	ISO 4287 / AITM 1-00070	70 μm

Attention

Products printed with powdered metal material come with grainy/pitted surfaces. All metal products supplied by 3DSPRO will be sandblasted for better results. If you have a specific requirement for surface finishing, you may need to add 3D Plus™ services, such as polishing, to reach a smooth surface. 3DSPRO offers anodizing and electroplating for coloring as well.

Applications

3DSPRO finds people using stainless steel 316L to make functional parts and prototypes in the following industries and applications.

Automotive parts and supplies:
Car bezels, rearview mirrors, dashboards, steering wheels, lights, seats, handles, etc.

Consumer electronics products:
Kitchenware, laptops, tablets, mobile phones, digital cameras, game consoles, MP3, mobile power bank.

Underwater & marine equipment:
Underwater drones, robots, shipbuilding, switches, sockets, power tools, electrical instruments, experimental instruments, measuring tools, etc.

Consumer supplies:
Golf clubs, tennis rackets, bicycles, wristwatches, glasses, tableware, jewelry, and sculptures.