

A Crash Course in Metals

Titanium

Pros: Doesn't bend, scratch or dent.

Cons: Difficult to cut, almost impossible to resize.

Hardness: Harder than aluminum. Scratch resistant. Good toughness.

Corrosiveness: Non-corrosive.

Rarity: The ninth most abundant element on earth.

Strength: Strength of steel, the lightness of aluminum.

Appearance: Smoky gray. Low sheen.

Other Uses: Bicycles, golf clubs, machinery.

Palladium

Pros: Less expensive than Pt,

Cons: Not as well known.

Hardness: Moh's 4.75 Vicker's 461

Rarity: As rare as platinum.

Appearance: Whiter and lighter than Platinum.

Other Uses: Dentistry, watch parts, spark plugs.

Tungsten

Pros: Only harder material is a diamond.

Cons: Heavy, very hard, but brittle (Could Crack if dropped.)

Hardness: Moh's 7.5 Vicker's 3430

Corrosiveness: Excellent corrosion resistance.

Rarity: Most abundant of the refractory metals.

Strength: One of the highest tensile strengths of all metals.

Appearance: Steel gray, white

Other Uses: Golf clubs, helicopters, lighting.

Stainless steel

Pros: Low cost, durable, hypoallergenic.

Cons: Man-made, lacks rarity.

Hardness: Moh's 5-8.5 240 Vicker's

Corrosiveness: its very name indicates it is less likely to corrode or stain than steel.

Rarity: lacks the rarity of the noble metals.

Strength: Good tensile strength

Appearance: Steel gray, white

Other Uses: Cutlery, surgical instruments, the pinnacle of the Chrysler Building

Sterling Silver

Pros: Beautiful noble metal, great value.

Cons: Many people are allergic to earring posts of 925. Tarnishing.

Hardness: 65 Vicker's

Corrosiveness: Not very reactive, but as % of silver decreases in alloy, tarnishing increases.

Rarity: Rare, with increase-ing rarity in the future.

Strength: Good tensile strength

Appearance: Bright, white metal.

Other Uses: Coinage, cutlery, tableware, electrical switches and contacts.

14 K Yellow Gold

Pros: Beautiful metal, great endurance

Cons: Pits when exposed to certain chemicals.

Hardness: 125- 165 Vickers

Corrosiveness: Non-corrosive

Rarity: Rare, with increase-ing rarity in the future.

Strength: Good tensile strength

Appearance: Golden yellow.

Other Uses: Jewelry and watches.

18 K Yellow Gold

Pros: Beautiful metal, great endurance

Cons: Not a great choice for many in heavily worn rings-repairs due to softness .

Hardness: 85-125 Vicker's

Corrosiveness: Non-corrosive

Rarity: Rare, with increase-ing rarity in the future.

Strength: Good tensile strength

Appearance: Intense golden color.

Other Uses: Jewelry and watches.