

HARDNESS OF ALLOYS

Below Dumont's alloys in order of hardness, useful for determining which alloy will resist scratching and dinging, as it relates to the Rockwell C scale and ductility.

hardest +

NON-AUTOCCLAVABLE
POOR TEMPERATURE RESISTANCE
MAGNETIC
RUST

CARBON [01]

> 59 HRC

Carbon Steel is an extremely hard alloy with carbon content up to 2.1% by weight, Mn, and Si. This alloy is magnetic and cannot be sterilized.

AUTOCCLAVABLE 180°C
TEMPERATURE RESISTANCE 400°C
ANTIMAGNETIC 100%
NEVER RUST

DUMOSTAR® [09]

> 58 HRC

Dumostar® is a patented alloy more elastic and resistant to corrosion than the best stainless steels. It is also perfectly compatible with human tissues and is resistant to mineral and organic acids as well to salt. It is 100% antimagnetic and resistant to temperatures of up to 400°C. It's sterilizable and autoclavable. Dumostar® is the most cost effective and appropriate alloy for laboratory use.

AUTOCCLAVABLE 180°C
TEMPERATURE RESISTANCE 400°C
MAGNETIC
NEVER RUST

INOX 08 [08]

58 HRC

Inox 08 is a medical stainless steel that provides an excellent resistance to corrosion and a good resistance to salt. This magnetic alloy supports temperatures of around 400°C (DIN 50914*) and is suitable for autoclave sterilization at 180°C.

NON-AUTOCCLAVABLE
TEMPERATURE RESISTANCE 400°C
MAGNETIC
NEVER RUST

INOX 02 [02]

55 – 58 HRC

Inox 02 is a magnetic stainless steel high in chromium content that forms an invisible layer on the steel to prevent corrosion and staining. Inox 02 resists temperatures of around 400°C (DIN 50914*), but to preserve the tools we suggest not to sterilize in autoclave.

AUTOCCLAVABLE 132°C
TEMPERATURE RESISTANCE 400°C
ANTIMAGNETIC 80%
NEVER RUST

ANTIMAGNETIC [04]

37 HRC

Antimagnetic offers a good resistance to corrosion thanks to its high concentration of molybdenum. Is resistant up to temperatures of around 400°C (DIN 50914*) and is suitable for autoclave sterilization at 132°C.

AUTOCCLAVABLE 132°C
TEMPERATURE RESISTANCE 400°C
ANTIMAGNETIC 95%
NEVER RUST

DUMOXEL® [03]

~ 37 HRC

Dumoxel® was developed and patented to offer the best in resistance to corrosion thanks to its high concentration of molybdenum and chromium. It also guarantees an excellent resistance to sulphuric environments, hydrochloric acid, as well as to all other mineral and organic acids. Is 95% antimagnetic, resistant up to temperatures of around 400°C (DIN 50914*) and is suitable for autoclave sterilization at 132°C.

NON-AUTOCCLAVABLE
POOR TEMPERATURE RESISTANCE
ANTIMAGNETIC 100%
NEVER RUST

NICKEL [05]

~ 15 HRC

Nickel is a 100% antimagnetic alloy composed of Cu, Ni, Mn and Zn. It is widely appreciated as it does not damage the components handled by it.

NON-AUTOCCLAVABLE
POOR TEMPERATURE RESISTANCE
ANTIMAGNETIC 100%
RUST

BRASS [06]

5 – 10 HRC

Brass is composed of Cu, Pb, Sn, Ni and Zn. This alloy is 100% antimagnetic and is widely used for handling delicate components, especially in watch-making.

NON-AUTOCCLAVABLE
POOR TEMPERATURE RESISTANCE
ANTIMAGNETIC 100%
RUST

BRONZE [010]

~ 5 HRC

Bronze is a nonferrous alloy widely popular in watchmaking for handling scratch-sensitive parts against damage. It is completely anti-magnetic and resistant to corrosion.

AUTOCCLAVABLE 132°C
TEMPERATURE RESISTANCE 430°C
ANTIMAGNETIC 100%
NEVER RUST

TITANIUM [07]

< 1 HRC

Titanium is totally resistant to corrosion from nitric acid, chloride, salt water, and the like. This alloy is not as hard as Inox 08 but is 40% lighter and more flexible. Titanium is 100% antimagnetic and resistant up to temperatures of around 430°C and is suitable for autoclave sterilization at 132°C.

* DIN 50914 : Determination of the resistance of stainless steel to intergranular corrosion using the copper sulfate sulfuric acid method (Money Penny-Strauss Test)

least hard -