About Us

Scientific Studies have concluded that copper-based alloy surfaces display the unique ability of destroying a wide variety of disease-carrying bacteria within a short time frame. In comparison, other common metals such as Steel and Aluminium that are regularly used as surfaces in homes and other public spaces, have been found to aid bacteria growth instead.

What makes Copper-based alloys antibacterial?

Antibacterial properties are exhibited by 9 metal elements: Viz, Titanium, Cobalt, Nickel, Lead, Zinc, Zirconium, Molybdenum, Tin and Copper – Of which Copper tops the list in its antibacterial efficacy. This efficacy stems from the copper ions', Cu^{2+} ability to prevent virus cell respiration by destroying the DNA & RNA inside a bacterium, leaving no room for any mutation into a more potent variant that could resist antibiotics.

However, the low tensile strength and low malleability of copper has posed a huge limitation for use in many fitments. The big challenge lies in shaping copper into something durable enough to hold its shape. Till date, there are no other copper alloys that demonstrate a similar degree of antibacterial properties without compromising on its quality of mechanical properties.

Through the result of intensive research and development, IOZ uses patented copper alloy for all our fitments. Under stringent laboratory test conditions, IOZ's patented copper exhibits the beneficial antibacterial properties of copper without compromising on its ability to shape into fitments that are durable. Even in an unlikely scenario when it tarnishes, the properties will never wear off.

Such properties will in turn mean that antibacterial solvents used to sanitise the fitments are no longer needed. Only basic cleaning using a dry cloth is required to remove fitments of any dirt and moisture. As compared to normal Copper, IOZ has a greater resistance to oxidation, keeping it untarnished and aesthetically attractive for longer periods of time.

What are the benefits of IOZ?

IOZ products demonstrate other beneficial properties such as low electrical and heat conductivity. The former property would grant our material as the ideal choice for electrical appliances, mitigating the risk of electrocution. The latter makes IOZ a preferred metal material to be used in many tactile finishing and fitments.

IOZ

Where to best use IOZ?

IOZ best demonstrates its unique features through usages on contact prone surfaces such as customized handphone covers, medical instruments, food processing facilities or any other equipment that requires a high degree of sanitation to meet the highest safety standards. Reach out to us at admin@ioz.sg to find out how our products can be customized to meet your needs.

(Michels, H. T., Keevil, C. W., Salgado, C. D., & Schmidt, M. G. (2015). From Laboratory Research to a Clinical Trial: Copper Alloy Surfaces Kill Bacteria and Reduce Hospital-Acquired Infections. HERD, 9(1), 64–79. https://doi.org/10.1177/1937586715592650)

Advantages of IOZ

- ★ High weldability
- ★ High brazeability
- ★ Good solderability
- ★ Non-Sparking
- ★ Moderate to high strength
- ★ Electrical Resistivity
- ★ Corrosion resistance to petrochemicals
- ★ Corrosion resistance to paper industry chemicals
- ★ Corrosion resistance to fresh water
- ★ Corrosion resistance to salt water
- ★ Good galling and wear resistance
- ★ Wear Resistance

Technical Comparisons between Copper & IOZ

Alloy	IOZ	Copper
Electrical Conductivity *% IACS at 68°F*	7	85
Thermal Conductivity *Btu/ sq ft/ ft hr/ °F at 68°F*	21	196
Modulus of Elasticity in Tension (*ksi)*	15000	17000
Modulus of Rigidity (*ksi)*	5600	6400