



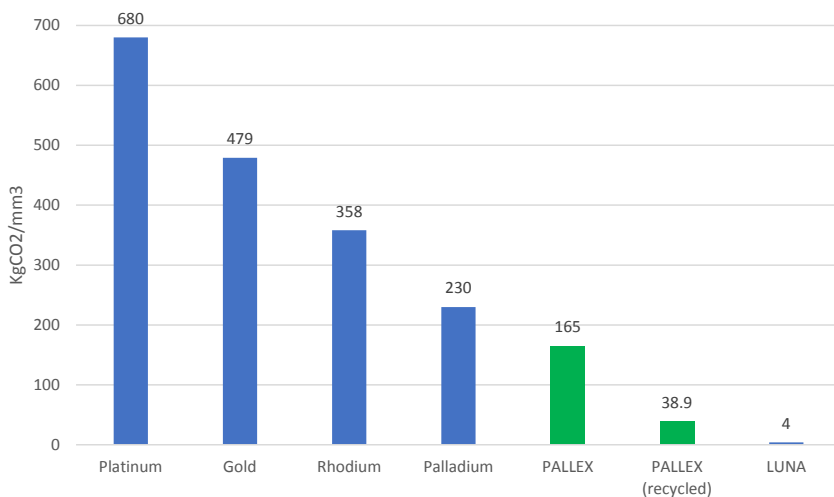
PALLEX®

Nanocrystalline palladium-antimony alloy

PALLEX® is a nanostructured palladium alloy computationally designed by Xtallic to deliver high-performance as a connector final finish. Designed for applications that demand low and stable contact resistance, wear durability, and corrosion stability, PALLEX offers a cost-effective alternative to traditional precious metal finishes like rhodium and platinum. Ideal for consumer electronics and high-performance connectors, PALLEX is paving the way for more efficient and environmentally friendly solutions in electronics manufacturing.

Key Features

Wear Durability	Hardness of 550-650 HV for enhanced durability in mechanical interfaces.
Corrosion Stability	PALLEX offers value-based powered immersion corrosion performance that competes with Platinum but at a lower cost point.
Thermal Stability	Capable of withstanding temperatures up to 300°C, making it ideal for high-heat environments.
Sustainability	PALLEX already has a low carbon footprint. Optionally made with 100% recycled palladium to further reduce the carbon footprint compared to rhodium and gold.
Manufacturing Flexibility	Available through reel-to-reel, selective tooling, rack, and barrel plating methods for high-volume production.



PALLEX has a much lower carbon footprint than other precious metal alternatives. The chart below shows the equivalent CO2 offsets coming from various precious metals. PALLEX, if made from virgin materials, has a lower carbon footprint than other options, but the sustainability can be further improved by using the greener version of PALLEX made from recycled Palladium content. This further lowers the footprint, making it nearly 10x lower than rhodium and more than 12 times lower than gold.

Benefits

Cost- Effective	Offering performance competitive with rhodium and platinum but at a lower cost point.
High Performance	Provides low and stable contact resistance, making it perfect for connector products requiring durable, corrosion-resistant finishes.
Manufacturing Efficiency	Robust chemistry that operates at high plating rates, with long plating life (MTO) and extremely uniform composition.
Sustainable	PALLEX is available in two versions, Low Carbon Footprint (LCF) and Ultra Low Carbon Footprint (ULCF), which is made from recycled palladium, further reducing the carbon footprint compared to other precious metals.
Nickel-Free	Suitable for wearable electronics.

Applications

Consumer Electronics
 Ideal for charging stations, mobile phone connectors, and accessories.

Wearable Technology
 Durable enough for low normal force mechanical interfaces while maintaining a sleek finish.



Coating Characteristics

Plating	70% Pd and 30% Sb
Color	Gray (typical La*b* of 79, 1, 7)
Brightness	Bright
Density	9.8 g/cm ³
Maximum use temperature	300 C