NISTTech

ALLOY WITH SELECTED ELECTRICAL CONDUCTIVITY AND ATOMIC DISORDER, PROCESS FOR MAKING AND USING SAME

Docket 15-002

Abstract

A white copper alloy consisting of (by mass) 18-21 % Ni, 24-28 % Zn, up to 1.0 % Mn, <0.2 % Fe, unavoidable impurity elements in concentrations <0.1 %, and a balance of Cu, with properties desirable for use in currency applications. Specifically, after appropriate thermo-mechanical processing, the alloy: (1) is silvery-white in appearance; (2) possesses an electrical conductivity of 5-6% IACS measured with an eddy current conductivity meter operating at frequencies of 60-480 kHz; (3) exhibits mechanical properties conducive for stamping operations, a yield strength of 120-180 MPa and an initial work hardening coefficient of 0.12-0.13; (4) acceptable corrosion behavior of currency applications; (5) excellent wear resistance; and (6) a density similar to cupronickel such that a coin make of it will have the same mass as one made of cupronickel.

Status of Availability

This invention is available for licensing exclusively or non-exclusively in any field of use.

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