Electroplated tin-nickel coatings as a replacement for nickel to eliminate nickel dermatitis - DTU Orbit (06/05/2019)

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Nickel dermatitis (skin allergy) is a growing problem in numerous countries. The alarming frequency of sensitization to nickel especially in the US caused nickel to be selected as the "Allergen of the Year" in 2008 by the American Contact Dermatitis Society. Nickel as coating in contact with skin has already been regulated by the nickel EU directive [94/27/EC] since 1994. In the present contribution tin/nickel alloy coatings (66.9 wt. % Sn), electrodeposited from a chloride/fluoride containing alloy electrolyte, will be presented as an alternative for both nickel and bright chromium coatings. The main focus will be on the corrosion properties where the following corrosion investigations will be covered: corrosion potential measurements for the different coatings, estimation of corrosion rates for materials in galvanic coupling with tin/nickel coatings, salt spray test, medical tests and immersion test of tin/nickel coatings in artificial sweat. Copyright © (2013) by the National Association for Surface Finishing.

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