

## Nickel Institute position on Piercing materials

Nickel Institute and NiPERA support using appropriate materials in appropriate applications for many reasons, including avoidance of adverse health effects. If the use involves direct and prolonged contact with the skin, including body piercings, then only appropriate materials should be used to avoid nickel allergic contact dermatitis. It is the amount of nickel released from an article, not the fact that the article contains nickel, which determines the potential for causing nickel allergic contact dermatitis. In some individuals an allergic reaction may occur if an article is in direct and prolonged contact when three conditions are present: 1) the nickel in the material must be corroded, 2) the resulting nickel compounds must be solubilized, and 3) the nickel ions must be absorbed by the skin to cause a reaction.

The European standard EN1811 measures the potential amount of nickel release under the conditions of direct and prolonged contact with the skin. Articles such as those used for earrings in children should not release more than 0.2 µg Ni/cm<sup>2</sup>/week (by EN1811 testing) to prevent children from becoming allergic to nickel or having a dermatitis reaction if they are already allergic to nickel. This nickel release rate is from the parts of earrings that are in contact with the skin and within the pierced part of the ear.

Because it is the rate of release of nickel (and not nickel content itself) that is important and relevant in determining whether there is a risk for nickel allergic contact dermatitis, articles may contain nickel but not cause a dermatitis reaction. For example, both ASTM F2923-14 (Standard Specification for Consumer Product Safety for Children's Jewelry) and F2999-14 (Standard Consumer Safety Specification for Adult Jewelry) state that for body piercing jewelry, surgical implant stainless steel is an approved material. This would include specific stainless steel alloys with 9.0-15% Ni. For other jewelry in contact with the skin, the above ASTM standard specifications state that "...stainless 304, 316...are expected to meet these requirements and do not require testing" and nickel release testing is suggested for other materials. Stainless steel 304 contains 8.0-10.5% Ni and 316 contains 10.0-14.0% Ni.

### For further information:

Katherine Heim, Ph.D., DABT  
Regulatory Toxicologist  
Nickel Producers Environmental  
Research Association (NiPERA)  
2525 Meridian Parkway, Suite 240  
Durham, NC 27713 U.S.A.  
Phone: +1-919-595-1942  
Fax: +1-919-595-1955  
E-mail: [kheim@nipera.org](mailto:kheim@nipera.org)