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Rio Grande, Nickel Alloys & You

by Kevin Whitmore, Product Manager, Rio Grande, Inc.

More and more, jewelry makers are asking about the nickel content in the findings and fabrication metals offered by Rio Grande. This is understandable because a significant number of people have allergic reactions to nickel and because the European Union has strict rules regarding the permissible level of nickel content in jewelry alloys.

With regard to nickel allergies, according to some sources, roughly 10–12% of women and 6% of men experience an allergy to nickel. The allergy is not caused by the nickel itself, but rather by the nickel salts that are formed when the metal comes into contact with our perspiration; the reaction usually results in a rash or inflammation of the skin at the point of contact. As a jewelry maker, you, like Rio, care about your customers and naturally share this concern about nickel content. You want to know how much, if any, nickel there is in the various alloys Rio Grande carries.

In addition, the European Union has issued a “Nickel Directive” that closely regulates the use of nickel in jewelry that will be in contact with human skin. The EU standard around nickel is tied to the release of nickel into the human bloodstream via skin contact. The testing involves prolonged exposure to synthetic sweat, and measuring the amount of nickel released. Theoretically, an item could contain nickel and pass this test if the nickel simply isn’t released from the item being tested. Certain grades of stainless steel are accepted as a viable alloy in the EU, as the nickel content is so tightly bound within the alloy that it is not released in EU nickel release tests.

We very recently did a thorough examination of the findings and metal products Rio Grande offers, and I thought a checklist of the various milled metals we sell might be helpful. Please Note: While many alloys listed below do not have nickel intentionally added, there is a possibility there may be minute amounts (ppm) of nickel present as a trace element.

Platinum	No nickel is added.
Karat Gold	<ul style="list-style-type: none"> • Pink and yellow gold have no nickel added. • White gold routinely has nickel added, but it is possible to make white gold with palladium, instead of adding nickel. Palladium White Gold is more expensive than traditional white gold.
Gold-Filled	<ul style="list-style-type: none"> • Pink and yellow gold-filled have no nickel added. This is a recent improvement. Traditionally, gold-filled was made with a nickel interleaf. The reason for this was that a layer of nickel would prevent diffusion of the gold into the brass substrate. In recent years improved engineering has allowed the removal of this nickel interleaf. • White gold-filled has significant nickel content.
Silver	Traditional sterling, Argentium and fine silver have no nickel added.
Silver Filled	<ul style="list-style-type: none"> • Silver-filled materials can be manufactured using a brass substrate or a nickel-brass substrate. The nickel-brass substrate gives a white base, while the brass substrate gives a colored substrate. • All silver-filled sheet and wire sold by Rio Grande has a brass substrate. A nickel inner liner is used. This microscopic layer of nickel prevents silver from diffusing into the brass layer. • Selected silver-filled findings sold by Rio Grande have a nickel-brass substrate/core. There is a significant nickel content.
Brass	All brass sheet and round wire sold by Rio Grande is manufactured to CDA #230 standards. No nickel is added.
Bronze	All bronze sheet and round wire sold by Rio Grande is manufactured to CDA #521 standards. No nickel is added.
Copper	All copper sheet and round wire sold by Rio Grande is manufactured to CDA #110 standards. No nickel is added.
Nickel Alloy	Our nickel alloy is manufactured to CDA #752 standards and is approximately 18% nickel. Though sometimes called "nickel silver," this alloy contains no silver.
Titanium & Niobium	No nickel is added to either titanium or niobium.

In general, avoid using alloys that contain nickel if you are exporting to the EU; these include nickel-white karat gold, white gold-filled, silver-filled that is either nickel-backed or has a nickel core, and nickel alloy base metal.

Throughout the Rio Grande website we are adding notes to findings and milled products that, according to our vendors or to our own knowledge, do contain some level of nickel. Use this information to inform the buying decisions you make. Please keep in mind that this information is intended as a guide only; it is not comprehensive and should not to be construed as legal advice. If your business requires testing and/or a definitive declaration as to nickel content, such testing will need to be performed by you to meet your specific needs.