

# The European Directive on Nickel in Jewellery

*An update on the current position*

There is some confusion on the 'Nickel law' in the European Union countries and the current position. This is a brief summary of the position as it stands today, as we understand it, and some of its consequences.

## The problem

As discussed by Rushforth in the last issue of *Gold Technology* no 28, Spring 2000, about 10% of the female population (but about 20% of the younger females) and less of the male are sensitised to nickel and skin contact with anything containing nickel causes a skin reaction (red rash). Sensitisation can occur, for example, when ears or other body parts are pierced with nickel-containing stainless steel needles. The healing pierced skin ('epithalisation') is particularly a vulnerable situation for sensitisation and allergic reaction.

## The European approach

Following unilateral action by some European Union (EU) countries, the EU decided to enact a Directive to prevent sensitised persons from suffering allergic reaction when wearing jewellery and other items that come into contact with the skin. This European Directive, 76/769/EEC - 12th Amendment (94/27/EC), was "published" on 20th July 1999, and EU law requires each member country to enact national legislation to comply with the Directive within 6 months, i.e. by 20th January 2000.

## The current situation

Thus, all EU countries should have implemented legislation by the 20th January this year, but many had not done so, including Britain, Germany, Italy and Sweden, although all were reported as being in the process of implementing legislation. In June, the UK Government finally enacted the

legislation and an important point is that it is back-dated to the 20th January. Several others have also now implemented legislation. For practical purposes, jewellers should regard the legislation as being in place in all EU countries.

The important thing to note here is that the law applies to all jewellery (including costume/fashion jewellery) and other items that come into contact with the skin. Thus watches and watch straps are also embraced, as are metallic items on clothes - zips, rivets on jeans, catches on underwear, etc. It does not only apply to white gold jewellery.

## What does the Directive cover?

The Directive has the following requirements:

**1 Ear Posts** (including posts inserted into other parts of the body) *inserted into the wound during the healing period* following piercing:

**Prohibits** the use of nickel in posts inserted into the wound during the healing period, if the concentration of nickel in the post is 0.05% wt. nickel or more

The UK guidelines suggest that other contacting surfaces of earrings are included here.

**2 Parts of jewellery and other items coming into direct and prolonged contact with the skin:**

(a) **Release** of nickel above 0.5 microgrammes per square centimetre per week is prohibited.

(b) This release rate not to be exceeded for a period of **at least 2 years** of normal use of product

Note: Nickel release is defined in terms of a Standard Test for nickel release which is based on immersion in a salt solution to simulate human sweat. Interpretation of test results is also subject to some "adjustment"

factor. There is also another Standard procedure for wear designed to simulate '2 years normal wear' prior to release testing. (See the article by Rushforth in *Gold Technology* No 28, Spring 2000 for details of these tests)

## What does it mean?

1 For ear posts inserted into a healing wound, the law is straightforward to interpret. Effectively, NO NICKEL, whether the ear post is made from gold, steel, titanium or whatever! This applies to items that may be coated with a non-nickel coating.

2 For normal use, any jewellery or other items in direct and prolonged contact with the skin must comply with the nickel release requirement. This affects mainly gold and costume/fashion jewellery (gold plated often has a nickel plate underlayer).

For gold jewellery, we are talking mainly **white golds** but not exclusively so! Some yellow golds may contain some small nickel alloying additions! If mixed scrap is recycled in jewellery production, then some nickel white gold can contaminate a yellow gold melt.

White golds: there are essentially 2 types of white golds - the nickel whites and the palladium whites, but beware: some low palladium whites may contain nickel alloying additions too. Many white golds are rhodium plated to give a good white appearance. If so, the item still needs to comply with nickel release requirements over a 2 year period. Rhodium plating will wear through!

It is possible to use (small) nickel alloying additions in golds and meet the nickel release requirements but one cannot define a threshold nickel content below which all alloys will meet the requirement. Nickel release rate depends on many factors,

metallurgical and other. One has to test and determine release rate on individual completed jewellery items to be certain it complies! In practice, many retailers and producers are opting for complete safety by using only 'nickel-free' alloys. For white golds, this means switching to the more expensive palladium whites (and high palladium alloys are usually a good white colour and do not need rhodium plating). Currently, many alloy producers are developing new alloys with low palladium content and other alloying additions such as manganese (for example, see article by P.Rotheram on White Golds, *Gold Technology* no. 27, November 1999). These may still need rhodium plating for good colour.

### **Old jewellery stocks**

The Nickel Directive recognises the problem of old stocks that do not meet the new regulations. Manufacturers and importers have 6 months from the date of implementation to sell non-

compliant stock. Wholesalers and retailers have 18 months from date of implementation to sell non-compliant stock. The date of implementation is 20th January 2000.

Any item "placed on the market" (i.e. packaged and ready for sale) before the date of implementation is exempt. Labelling of such old stocks is important for compliance. Most retailers and wholesalers are playing safe and disposing of old stock that is non-compliant!

### **Who is affected by this Directive?**

Clearly, all manufacturers, importers, wholesalers and retailers within EU countries must comply for all jewellery sold within the EU. *But note* that European producers/exporters who export jewellery into countries outside of the EU may still export jewellery that contains nickel and does not meet the EU Directive!

Incidentally, reports have been received of alloys, claimed to be

nickel-free, that have been analysed and found to contain significant amounts of nickel. Ensure your alloy supplier certifies that his alloys are nickel free and meet the requirements.

For countries outside of the EU: For example, producers in India, the Middle and Far East, who are exporting into EU countries, must comply with those products that they export into the EU. Again, reports have been received of producers in such countries who are totally unaware of the Nickel Directive and continue to export nickel white gold jewellery into Europe. Importers in Europe should check that such imported jewellery complies.

### **Testing for nickel release**

There are EU Standards for test procedures for measuring nickel release, as described by Rushforth. Some Laboratories in Europe, such as the Birmingham and Sheffield Assay Offices in the UK, offer a commercial testing service. Birmingham also offer an accredited Quality system for due diligence in meeting these laws (remember, if a product fails a test, the penalties can be severe, so producers need to prove that they have good preventative procedures in place to avoid such penalties).

### **Concluding comment**

The EU Directive is now law in most, if not all, EU countries. Where it is not yet implemented, it is likely that national law will be back-dated to the 20th January. In practical terms, this means that the Nickel Directive is now effectively law in all EU countries and that all jewellery should comply. Many EU countries have produced guidelines on the interpretation of the law. For example, in the UK, the law banning nickel in posts inserted into a healing wound also applies to the skin-contacting surfaces of the adjacent parts of the earring.

Another important aspect relating to nickel release is that one cannot just do nickel release tests on the basic semifabricated alloys, e.g. sheet or ingot. The alloy may pass the release test in this condition but the same alloy, when fabricated into jewellery may fail the test! The metallurgical state of the alloy can influence the release rate. That is one reason why many producers and retailers are opting for 'nickel-free' alloys – to avoid the problem.

For specific information and advice relating to specific EU country's regulations and interpretation, contact their government Department of Trade and Industry (or its equivalent) or the national Jewellery Manufacturers Association.

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