SPECTROMETER ANALYSIS: LEAD, CADMIUM, NICKEL - WHAT'S IN YOUR JEWELRY?

By : Laurence

Do you know that your necklaces, earrings, rings or bracelets can be harmful to health? Precious jewelry and costume jewelry comply with very specific regulations which impose the limitation of several toxic and dangerous heavy metals, such as lead, cadmium or chromium, and sets a requirement for the release of nickel. This is the famous REACH regulation (CE n ? 1907/2006)! To check the conformity of our products, at Perles & Co, we use an X-ray fluorescence spectrometer (in other words XRF). This tool makes it possible to quickly and precisely obtain the composition of the elements and thus detect the presence of heavy metals , but also the percentage of precious metals in a product. These analyzes are non-destructive and allow the evaluation and characterization of elements without damaging the original sample. At Perles & Co, all products manufactured outside the European Union, and products manufactured in the European Union about which we have doubts, are systematically checked. From now on, we have a new service to offer you, today we have the possibility of carrying out pre-checks of your products, including items that would not have been purchased from Perles & Co. In case of any doubt , we can check their quality and compliance with REACH regulations so that you can sell them with peace of mind! Analysis by spectrometer THE "ROHS" MODE ROHS stands for "Restriction of the use of certain Hazardous Substances" in English. This translates in French as "Restriction of use of certain dangerous substances". This is a European directive (2002/95 / EC) which aims to limit the use of certain dangerous substances to allow better health protection. This concerns, among other things, cadmium, which is recognized as carcinogenic and causes kidney damage and bone fragility during prolonged exposure. But also lead which can have neurotoxic effects for development, cardiovascular and renal when absorbed by the body. What is "Rohs" mode? When it is in "Rohs" mode, the spectrometer will therefore analyze the composition of the articles to allow us to detect the presence of nickel and heavy metals: Lead Cadmium Mercury Chromium However, the spectrometer can only analyze a product on the surface. The softer the metal, the more X-rays will be able to access the internal layers to analyze the part in depth. If the coating is too thick, the analysis will be distorted. We then file the article in order to remove this coating and find out what is hidden under the surface. For example, on Gold Plated products, we need to remove the coating to analyze the product in depth. At Perles & Co, during a delivery, if the result of one of the heavy metals exceeds the fixed limit, the product is systematically put aside and returned to the supplier. THE "PRECIOUS METALS" MODE When the "precious metals" mode is activated, the machine indicates the percentage of precious metals present in an article. If a product, such as a charm, a bracelet or an interlayer, includes welds, wire or rings, we carry out several tests in order to take an average and obtain a homogeneous result. At Perles & Co, this average must be greater than 93% for a 925 silver jewel. If this is not the case, the product is declared non-compliant and will not be sold.Spot-nickel Analysis Nickel is a light metal that is highly allergenic because of the nickel salts that are released under the effect of sweat. The presence of nickel is limited and regulated. According to European directive 94/27 / EC , this limit is set at 0.5 ?g / cm? / week for jewelry in direct and prolonged contact with the skin (0.2 ?g / cm? / week in the case of products introduced into pierced parts of the human body). The release of nickel is not tested with the fluorescence spectrometer. The release of nickel is controlled with a Hasulith solution . We rub part of the article with a cotton ball moistened with this chemical solution. If it turns pink, it means that there is a reaction and therefore release of nickel. To date, we are not able to say whether the percentage of nickel released complies or not with the legislation in force. If you want to know the nickel release rate in your article, we invite you to contact a certified laboratory to perform this analysis. Do you want to have your products analyzed? Are you interested in this pre-check? Send us samples of your products to test. Here's the procedure to follow : Download and complete the form attached or available on the item sheet. Send your form and samples to: Perles & Co - Service Spectrom?tre - 25, rue Henri Moissan 81000 Albi. The products will be analyzed within 10 working days from the date of receipt. The results will be communicated to you by email with the comments of our expert. The sample will be returned to you in the stamped envelope with your address, which you will include when sending the sample. For more information, please contact our quality department: contact@perlesandco.com If we encounter any problem with the analysis of your product, we will contact you (remember to write down your details in the form!) To note : To understand the pre-test, you need to have some knowledge of metals and the composition of alloys. If you want a core analysis of the product, you will need to send us a finished product + a filed product. The sample must sometimes be intentionally damaged to facilitate analysis (removal of glass beads on beaded chains for example ...). In this case, you have the choice between two solutions: either authorize us to deteriorate the sample entrusted (after having given us your agreement), or not to analyze it. If you send us a part made up of a magnet (such as a magnetic clasp for example), it cannot be tested. To carry out the pre-check, we must remove the magnetic part (on your authorization). You can also choose not to test it. PERLES & CO IS NOT A CERTIFIED LABORATORY, THE DATA ARE THEREFORE COMMUNICATED FOR INFORMATION PURPOSE. FOR GREATER RESULTS, WE INVITE YOU TO CONTACT A SPECIALIZED LABORATORY.