Stained packaging, segregating scope blades, proper handling of pouches

by Ray Taurasi

Q We have been experiencing intermittent issues with a mysterious gray-colored staining on our packaging materials, tray liners, peel pouches and wraps. What is perplexing is that the stains only appear on some packages in the same load — some of the staining is on the inner wrap and some is on the outer wrap. Our Biomed has assured me that our steam and water quality is excellent. Some lab samples of the stained packages have tested positive for aluminum. I have noticed that some of our recently purchased aluminum trays, cases and cassettes are also discoloring and was wondering if they might have something to do with our problem.

A Certain chemicals, detergents and sterilants can have a caustic affect on certain metals such as aluminum; the metals can degrade and slough off and be deposited on wraps and other items in the sterilizer. I don't know enough about your situation to determine if that is causing your problem. The fact that your aluminum cases, etc., are discoloring is indicative of some problem which may be relevant. You need to verify that you are following the manufacturer's instructions for use (IFU) for the aluminum devices you are using, including cleaning protocols, proper use of chemical agents and sterilization processes. I would investigate and document what is being packaged in the stained packages — do they contain the aluminum products in question? You also want to be certain that you use quality aluminum products as there are different grades and types of aluminum. Anodized aluminum is superior, but like all other devices, proper care and handling must be applied to ensure and maintain its serviceability. Anodizing is a...
process, which gives aluminum a protective surface of aluminum oxide, which is scratch and corrosion resistant and is not electrically conductive. A non-anodized metal is not corrosion resistant and can become reactive, causing an adverse affect on other metals that come in contact with it. An electrolytic couple reaction dissolves and corrodes other metals.

Furthermore, a non-anodized aluminum material will oxidize when exposed to steam or water during routine cleaning, decontamination, and sterilization, producing a white powdery film. In addition, non-anodized aluminum scratches easily and will discolor through routine use. Surgical instruments can also corrode, rust and stain when they come in contact with the non-anodized material. What is imperative is to keep metals protected from corrosion. In fact, aluminum material has a mil spec for corrosion resistance that all manufacturers of sterilization containers need to meet in order to sell product to the federal government. That is why pH neutral detergents are necessary for cleaning aluminum containers to avoid corrosion when the caustic or acidic cleaning agents or chemicals remove the anodized surface.

Q We have a major issue with our anesthesia staff and their carts. The staff is not very careful in the segregation of clean items and used or soiled items. Most problematic are our laryngoscope blades; we place the clean ones in Ziplock plastic bags and the scopes are often taken out and not used. We have found some in open plastic bags and are not sure if they are clean or dirty. If a package is found opened or a blade is found unpackaged then the blade is considered contaminated and has to be sent for reprocessing. My concern is that the anesthesia staff might be placing a soiled scope blade back in the plastic bag and resealing it. Do you have any suggestions for managing this situation better?

A Laryngoscope blades need to be reprocessed in accordance with the manufacturer's instructions, which include disinfection or sterilization. The storage of unpackaged laryngoscope blades is unreliable and leads to questions relative to their safe use. The processed scopes do need to be protected from contamination until used and is accomplished by some sort of protective packaging. The method of packaging you choose to use should be tamper evident which means once the packaging is opened it cannot be resealed without visible detection. The Ziplock bag and method that you are currently using obviously is not tamper evident. You could use non-Ziplock plastic bags and secure it closed with a green pull tight lock labeled CLEAN (Figure 1). To open the bag, the pull tight lock would either have to be broken off or the bag torn open, but either way the blade could not get repackaged without being reprocessed.

Q I am the OR director at my hospital and I recently requested that sterile processing place some sounds, dilators and other delicate instruments in foam multi-pocket pouches and roll them for added protection in the instrument sets. The sterile processing manager advised me that the IFU states that the foam pocket should be laid flat in the instrument tray or basket. The IFU however gave no rationale for this and I can see no reason why the foam can’t be rolled as I have done so with no apparent problems in the past. Do you see any reason why I shouldn’t do this?

A The primary reason it should not be done is because the IFU gives you specific instructions for how their product is to be used effectively and safely. It is expected and required that end users follow the manufacturers IFUs. It is likely that the foam pouches have only been validated for use in accordance with the manufacturer's IFU. Using the product in violation of the IFU could result in sterilization and or product failure, posing a risk to patient welfare and safety. Rolling the foam could possibly create too much density, challenging the steam permeation and also causing excess moisture retention. You should contact the manufacturer with your questions as I am
sure they can provide you with reasons for why their foam pouches must be laid flat and not rolled. Unless they can provide you with written authorization and validation to roll the foam pouches, you must not do so. If rolling is essential for you then you should search for a manufacturer that has foam pouch products that can be rolled or an alternative that can be rolled such as a cellulose multi pocket pouch (Figure 2).

Ray Taurasi is Eastern Regional Director of Clinical Sales and Services for Healthmark Industries. His healthcare career spans over three decades as an Administrator, Educator, Technologist and Consultant. He is a member of AORN, AHA, SIGNA, AAMI and a past president of IAHCSMM and has served on and contributed to many national committees with a myriad of professional organizations, manufacturers, corporations and prestigious healthcare networks. Taurasi has been a faculty member of numerous colleges teaching in the divisions of business administration and health sciences. In addition to this column he has authored several articles and has been a featured speaker on the international scene.