Micro-Lab/ Medical Waste Sterilization Made Easier

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Approximately 75-80% of off-site medical waste treatment facilities use steam sterilization as the method of treatment. Steam sterilization is commonly used by on-site medical centers and hospitals for their medical waste treatment. Many such facilities are periodically monitoring the efficacy of their sterilization process with Biological Indicators (BIs). In most states, the Dept. of Health has set up regulations requiring the periodic monitoring of such sterilization cycles. The BIs commonly used to monitor the steam sterilization cycles are spore strips or small crushable types of plastic self-contained indicators.

A common but inappropriate method used to monitor the sterilization cycles for medical or micro lab waste is where the spore strips are placed directly into the bag of medical waste prior to sterilization. The load is processed and upon cycle completion, the spore strips are removed.   The strips must then be transferred aseptically to a tube of culture media and incubated for growth / no growth testing.   The spore strip transfers could be done on-site or by a contract laboratory where testing results and *Spore Strips and Media* the testing records are maintained as evidence that sterilization monitoring has been done.

During the sterilization cycle, much of the medical waste that consists of used IV bags, plastic tubing partially filled with remaining fluids, blood agar Petri dishes and other such items tend to melt and leak their fluid content into the biowaste bag being sterilized. This liquid and melted agar often gets onto the spore strips or on and around the plastic self-contained biological indicator. When such a situation exists where liquid and melted agar can come into contact with the spore strips, a messy situation can occur. The actual performance of the spore strip may be compromised and your test results no longer accurate and reliable.

Spore strips are not intended for use in cycles similar to liquid loads where they may become wet and coated with waste debris.

There is an easier method, there are sealed glass ampoule type BIs designed specifically for such cycles where liquids are going to be present. These glass ampoules contain the same spores that would be used on a spore strip and they also contain the growth media that would be in the tube that a spore strip is transferred to. Therefore the need to aseptically transfer to growth media is eliminated. One simply inserts the ampoule into the bag being sterilized and upon

removal the ampoule is placed directly into the incubator. Sterilize and incubate! No other steps are required.

The media in the ampoule contains a pH indicator so that with incubation, if the bacteria in the ampoule grow, the media changes from a bright purple color to a bright yellow color. If the sterilization cycle was successful, the ampoule remains purple. The required incubation time for these ampoules is only 48 hours and not a full 7 days as with most spore strips. Ease of placement into and out of the biobag is much more convenient than with spore strips. The upper portion of the ampoule, as seen on the photo, has a collared or grooved area in the glass. A long string or
wire can be attached to the ampoule at this area as shown above. The ampoule is placed into the biobag with the string hanging out of the bag. When the cycle is finished, the ampoule is retrieved by pulling on the string. The ampoule is then wiped off and placed directly into the incubator. It's that simple! No transfers needed!
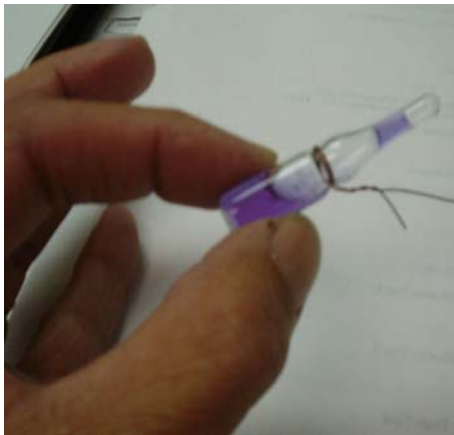
A small table top incubator can be purchased that will hold up to 12 ampoules at one time. The incubator is preset for temperature and the ampoules are easily visible to monitor for color change. After 48 hours of incubation, if no color changes occur, the ampoules can be removed and disposed of.

The monitoring of medical/micro-lab waste no longer needs to be a messy task!