TYLER
Research Corporation
Biomedical Engineering

Product: LAMR20-09PSF
LAMR25-09PSF

Material: Polysulfone with silicone seals and stainless steel screws

The LAMR20-09PSF and LAMR25-09PSF are manufactured from olysulfone, an advanced engineered thermoplastic polymer capable of withstanding a temperature range of -100°C to 150°C. The LAMR-PSF series biofilm devices may be safely sterilized using an autoclave.

IMPORTANT:

Polysulfone is **NOT COMPATIBLE** with the following:

- *Acetone*
- *Acetonitrile*
- *Benzene*
- *Chloroform*
- *Dimethylformamide (DMF)*
- *Dimethylsulfoxide (DMSO)*
- *Ethyl acetate*
- *Methyl ethyl ketone*
- *Methylene chloride*
- *Perchloroethylene*
- *Phenol*
- *Pyridine*
- *Sulfuric acid*
- *Toluene*
- *Trichloroethylene*
- *Xylene*

Polysulfone has **LIMITED RESISTANCE** to the following:

- *Acetate*
- *Ammonia*
- *Butyl acetate*
- *Carbontetrachloride*
- *Isopropanol*

**Please note that the chemical lists are not exhaustive, but refer to the most commonly encountered laboratory chemicals*

Sterilizing LAMR-series devices:

1. The fully assembled LAMR20-09PSF or LAMR25-09PSF may be autoclaved with biostud holders and biostuds in place (for biostuds that can withstand autoclaving) or separately from the holders and/or biostuds for those (such as acrylic or PVC) that cannot be autoclaved.
2. Attach silicone or vinyl tubing (1/2” or 12mm ID) to the inlet/outlet ports, fold and tape the ends of the tubing closed. Place the entire device in an autoclave bag or wrap in surgical towels and tape the package closed with an indicating tape.
3. Refer to the manual of the autoclave in use for proper loading techniques and correct positioning of the items to be sterilized. Sterilize at 121°C for 15 minutes.

LAMR20-09PSF / LAMR25-09PSF

Assembly/Disassembly Instructions:

The LAMR-PSF series biofilm systems are precision devices consisting of two polysulfone manifold halves, two polysulfone inlet/outlet nipples, stainless steel socket head cap screws connecting the manifold halves, silicone O-rings, and nine polysulfone biostud holders with silicone seals and stainless steel screws.

Assembly or disassembly of the LAMR20-09PSF or LAMR25-09 PSF devices for cleaning requires a #2 Phillips screwdriver.

Disassembly of the LAMR20-09PSF or LAMR25-09PSF

1. Turn the biostud holders counterclockwise to remove them from their ports. If the holders are populated with biostuds, remove the biostuds from the holders by turning the panhead screws clockwise using fingers or a #2 Phillips screwdriver until the biostud is partially ejected from the holder. Grasp the biostud with sterile forceps to remove them for analysis.
2. If desired, remove the inlet/outlet nipples from the lower manifold by turning counterclockwise with a wrench (for routine cleaning and sterilization this step is not required).
3. Place the LAMR-PSF device face down and use a #2 Philips screwdriver to remove the screws connecting the two manifold halves.
4. Carefully separate the two polysulfone halves and remove the silicone O-ring.
5. Wash all components using only mild detergent and water, and thoroughly rinse with deionized water. Allow to dry before reassembly.

Assembly of the LAMR20-09PSF and LAMR25-09PSF

1. Lubricate all O-rings occasionally with silicone O-ring lube to promote sealing and prolong O-ring life. With the LAMR-PSF base upright on a bench, place the large silicone O-ring in the groove surrounding the central channel. Align the top manifold and place it gently onto the base, being careful not to dislodge the O-ring. While holding the halves firmly together, turn the manifold over on the bench to expose the holes for the socket head cap screws. Using a #2 Philips screwdriver, install and partially tighten the screws, leaving a 1mm gap between the top and base of the manifold. Then tighten the screws uniformly, still leaving a tiny gap (approximately 0.1mm) between the manifold halves. Finally, tighten them sequentially just to bring about surface-to-surface contact between the manifold halves**. DO NOT OVERTIGHTEN!** The O-ring is fully compressed and any tightening beyond surface-to-surface contact will simply stress the threads in the upper manifold, leading to cracking and structural failure.
2. If the inlet/outlet nipples were removed during cleaning, replace the O-rings in the grooves surrounding the thread and carefully screw them into the endport sockets only until surface-to-surface contact has been made to gently compress the retained O-ring. Again, **DO NOT OVERTIGHTEN** as this will simply lead to structural failure of the insert or manifold.
3. Turn the panhead ejector screws counterclockwise to back the head off of the holder face by about 3/8”. Populate the holders with biostuds of the appropriate material by pushing the stem into the holder and gently twisting until the face is flush with the end of the holder.
4. Turn the Biostud holders clockwise to return them to their respective ports. Be careful **NOT TO OVERTIGHTEN** the holders to avoid damaging the structural integrity of the piece.