

Ampulmatic® and Ampulmatic®-10 FAQ



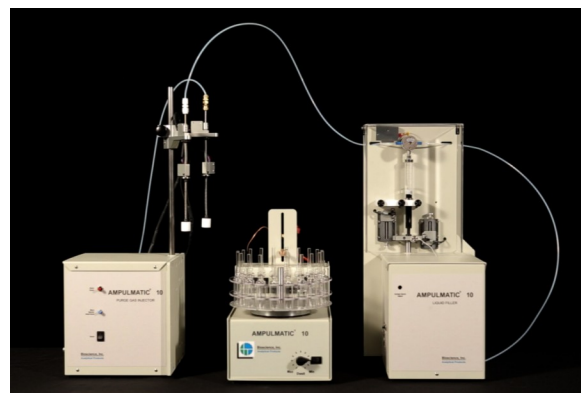
Bioscience, Inc.
Environmental Products & Services

ISO 9001:2015 Certified

www.bioscienceinc.com

Q: What is the difference between the Ampulmatic and the Ampulmatic-10?

A: The Ampulmatic is an older model mechanical ampule sealer. The newest model Ampulmatic-10 is a fully automated ampule sealer with optional plug-in Purge Gas Injector and Liquid Filler accessories. It's most notable features include a dial on the front to control dwell time (of the ampule within the flame), faster sealing speeds, and easy access for changing the belt.



Q: What gases are required to operate the Ampulmatic-10 Sealer?

A: The Ampulmatic-10 requires a fuel gas (propane, natural gas, MAPP, etc.) along with oxygen to produce a flame which melts the top of glass ampules for a uniform seal (tip seal). Small tanks (camping size) can be used for smaller sealing projects. A technical document (Connecting the Ampulmatic or Ampulmatic-10 and Accessories to Compressed Gas Cylinders) is available explaining the procedure and necessary parts.

Q: Can the Ampulmatic-10 be used for higher melting temperature glass?

A: Yes. The Ampulmatic-10 is compatible with MAPP gas as well as propane. A MAPP gas/oxygen flame will allow significantly higher flame temperatures for sealing higher melting glass.

Q: Can the Ampulmatic-10 be used to seal ampule sizes other than the standard (1, 2, 5, 10, 20 and 50 ml) sizes or ampules manufactured by various companies?

A: Yes. Bioscience offers customizing of the carousel racks to meet non-standard ampule sizes. A special insert is also available for onion skinned ampules.



Q: Can the speed of the Ampulmatic or Ampulmatic-10 be increased?

A: Yes. Bioscience offers customizing of sealing speed to meet your needs. Faster motors can be installed in the Ampulmatic to seal more ampules in a shorter time. However, some flexibility may be lost due to higher flame temperature requirements. That is, precise adjustment of the flame conditions becomes critical to seal ampules which are in the flame for a shorter period of time. In order to use

high speeds, high uniformity of ampules is required; and some types of glass may be difficult to seal at the higher speeds.

The Ampulmatic-10 has a dial to vary the dwell time (time the ampule is in front of the flame) to optimize sealing and/or improve efficiency. Some speeds may not work well with purge gas injection or liquid filling accessories due to the time necessary for these operations. If using the liquid filler to fill large volumes, the syringe must be able to fill the ampules within the time of the carousel advancement. Bioscience also has the ability to adjust this dial to meet your speed needs, making fine-tuned adjustment easier. A hotter flame can be used with faster speeds (short dwell times) in order to seal the ampules in a shorter time.

Q: How many ampules can the Ampulmatic-10 seal per hour?

A: The Ampulmatic-10 can seal approximately 900 ampules per hour.

Q: Can the Ampulmatic-10 be used to seal ampules containing volatile solvents?

A: Yes. The Ampulmatic-10 can be used to seal ampules containing such volatile solvents as acetone or hexane. However, special care and handling must be used in order to prevent accidents. Often, dry ice or other cold baths are used to cool the liquids before filling or ampules prior to sealing in order to reduce the volatility of the solvent. Bioscience, Inc. recommends pre-chilling the liquid or ampules (but not the carousel containing the ampules, due to possible embrittlement of the plastic carousel plates by rapid, extreme temperature changes). For more information, please contact Bioscience, Inc.'s technical services.



Q: What are the electrical requirements of the Ampulmatic or Ampulmatic-10?

A: The Ampulmatic-10 uses an external power supply to convert electrical outlet power from 100-240 VAC (50-60 Hz) to 12 VDC. The circuitry includes a resettable 3.0 amp circuit breaker. All electronics and electrical components are UL and/or CSA approved and ROHS compliant.

Q: What safety mechanisms are built into the Ampulmatic-10 and accessories?

A: The following safety mechanisms are built into the Ampulmatic-10 and Accessories:

- The Ampulmatic-10 and Accessories are fully automated. Once plugged in, if they are not all turned on, the carousel will not rotate.
- The Accessories will not dispense unless they detect an ampule in place.
- If an Accessory is not aligned properly or detects a sealed ampule, an alarm will sound to alert the user. The user can then stop/reset the alarm by pushing a button on the side of the gas purge.
- The Liquid Filler will not operate unless the safety shield is in place over the syringe.

Q: What safety accessories are available?

A: Bioscience, Inc. offers the following safety accessories:

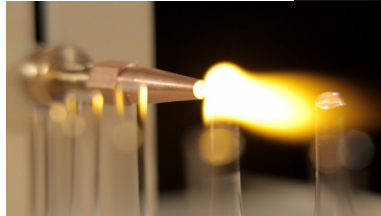
- Flame Shield (to protect the operators hands from hotter a flame)
- Foot Cut-Off Pedal (this can be designed to shut off the gases when the operator removes their foot from the pedal or to provide a hands-free machine shut-down)
- Flexible Heat Gloves
- Glass Blower Safety Glasses (made to be worn alone or to fit over prescription glasses)

Ampules can also be called ampoule, ampul, or ampulla.



Q: Why are there different syringe sizes for the Liquid Filler accessory?

A: We recommend different syringe sizes depending on the volumes of solutions you are filling. The syringe sizes affect the speed and accuracy of your filling automation. Different syringe sizes make it easier to calibrate the volumes you are dispensing. Our syringes vary from 1ml to 20ml.



Q: How does the Liquid Filler work?

A: The Liquid Filler accessory pumps the liquid from any container into the syringe. The user places a tube into the desired container and the Ampulmatic-10 does all the work. The container can be placed anywhere (we can provide the necessary lengths of tubing). For small amounts or expensive solutions, the container can be placed closer to the syringe to reduce dead volume within the tubing.

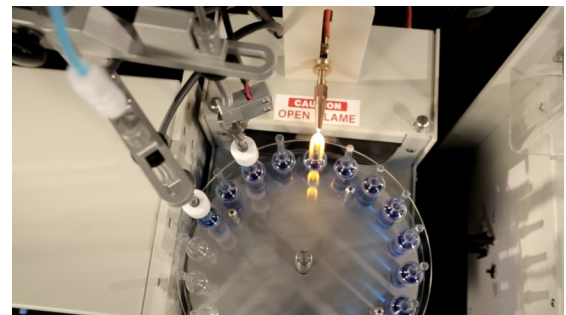


Q: Can the Liquid Filler fill small amounts?

A: Yes. Bioscience, Inc. has performed successful filling testing of 0.10ml and 0.20ml volumes, with a standard deviation of 0.5%.

Q: How do I clean the Liquid Filler between projects?

A: The fluid path consists of glass, PTFE, and stainless steel. This makes it easy to sterilize. A solution can be pumped through the system to sterilize or the components can be autoclaved.



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