

# Operating Instructions For the MicroSolv Photochemical Reactor

**Caution: Disconnect power plug before removing lamp holder from reactor holder.**

The Photochemical Reactor includes:

1. UV Lamp Holder with power switch.
2. UV Lamp, 254nm.
3. Reactor Holder.
4. 25 Cotter Pins.
5. Polished Support Plate (PSP)

Required for use:

1. Appropriate Knitted Reactor Coil installed in the Photochemical Reactor.
2. Appropriate HPLC System with UV, Fluorescence, Electrochemical or Chemiluminescence detector.

## Assembly and Use of Photochemical Reactor

1. Disconnect power plug before removing lamp holder from reactor holder.
2. **DO NOT EXPOSE EYES TO UV Light.**
3. Keep the Photochemical Reactor in a horizontal position to prevent liquid from flowing into lamp connection in case of leaks.
4. Prolonged exposure of reactor coils to UV light causes a decrease in back pressure rating of coils.
5. The pressure rating for new knitted reactor coils (KRC) is 300 psig.
6. The power output of the UV lamp decreases with time. They should be replaced after 3,000 hours of use or when the response is significantly decreased.

### Knitted Reactor Coil (KRC) Placement in the Photochemical Reactor

Position the KRC on the polished side in the center and parallel to the PSP. Push cotter pins from the non-polished side of the PSP through small openings and through the interstices of the KRC.

By spreading apart the cotter pin prongs the reactor coil should be positioned flat on the PSP.

Place the Photochemical Reactor on a flat table, remove the lamp holder (top part with switch) and position PSP with attached KRC on the bottom of the stainless steel reactor holder.

The PTFE tubing extending from the KRC should be pushed through the large holes in the bottom and center of the reactor holder.

The PTFE tubing can then be connected the HPLC columns on one end the detector to the other end.

Carefully replace the UV lamp into the stainless steel reactor holder.

### **Alternate Method of Attaching KRC Using Nylon Ties**

Place the KRC on the polished side in the center and parallel to the PSP. Push a nylon tie through an opening of the KRC and a matching hole of the PSP. Loop the tie through the adjacent hole of the PSP and through another matching opening in the KRC. Push end of tie through locking mechanism of tie and pull until tight. Repeat at each end of the KRC.

#### **NOTE:**

1. The KRC's are often wider than the lamp housing and consequently take a "U Shape" in the housing. The lamp fits inside the "U Shape" similar to how a hot dog fits inside a hot dog roll. This is acceptable and will not alter the performance of the device.
2. It is acceptable for the UV Lamp to touch the KRC's and ties. The lamp does not get excessively hot and the increased temperature of the KRC slightly decreases band broadening.