

## Instructions for SP1502 (Modification of a 35 mL Quartz Vessel Insert for Temperature Control with the XP-1500™ Plus Vessel in a MARS™ System)

The modification kit consists of a modified cover for the 35 mL Quartz Vessel Insert, a sapphire thermowell and a modified thermowell nut. The cover is modified with an opening so that a thermowell can pass through into the 35 mL Quartz Vessel Insert body. The sapphire thermowell is 14.05 cm (5.53 in.). The kit is designed to allow temperature feedback control during the MARS microwave heating process using a 35 mL Quartz Vessel Insert inside an XP-1500 Plus Control Vessel assembly.



**Note:** These instructions should be used in conjunction with the Instructions for use of the XP-1500 Plus Vessel Accessory Set (PN 600493) and Instructions for Use of the 35 mL Quartz Vessel Insert (PN 600742).

### WARNING

Proper precautions must be taken to avoid contact with acids or acid vapors. Protective gear should be worn as outlined in the user's safety program for hazardous materials and the reagent manufacturer's material safety data sheet. Refer to these guidelines for proper decontamination, handling and disposal of reagents or any hazardous materials.

1. Place the sample (maximum 300 mg of organic sample) into a 35 mL quartz vessel insert to be used for temperature control.
2. Add 5 mL of acid to the quartz vessel insert.

### CAUTION

Do not use hydrofluoric acid (HF). It will attack the quartz insert.

3. Place the modified cover with the opening on the quartz insert vessel body.

- Place the assembled quartz vessel insert into an XP-1500 Plus liner.



- Place 5 mL of 30% hydrogen peroxide into the XP-1500 Plus liner, but outside the 35 mL quartz vessel insert.



- Place the top thermowell locking nut (PN 325028) onto the open end of the XP-1500 Plus modified thermowell. Push the thermowell down through the top of the XP-1500 Plus control cover until the locking nut meets the threads on the top of the control cover. Tighten the locking nut finger tight.
- Slide the modified bottom thermowell locking nut over the thermowell on the underside of the cover and tighten it finger tight. Verify that the thermowell is locked securely by holding the cover and slightly pulling on the thermowell. The thermowell should not feel loose.
- Insert the tip (sealed end) of the thermowell into the 35 mL quartz insert vessel through the opening in the insert cover.



- Insert the assembled XP-1500 Plus liner and cover into a sleeve.
- Insert the control vessel assembly into the support module and hand tighten the support screw.
- Tighten the pressure tubing leading from the ESP-1500 Plus to the pressure port on the control cover. Rotate the vessel so that the vent fitting is positioned toward the front of the support module (the end with the label attached).
- Using the torque wrench, tighten the module screw to 5 ft. lbs. (60 in. lbs.).
- Slide the RTP-300 Plus temperature probe into the control vessel through the support screw until it “bottoms out” in the thermowell.