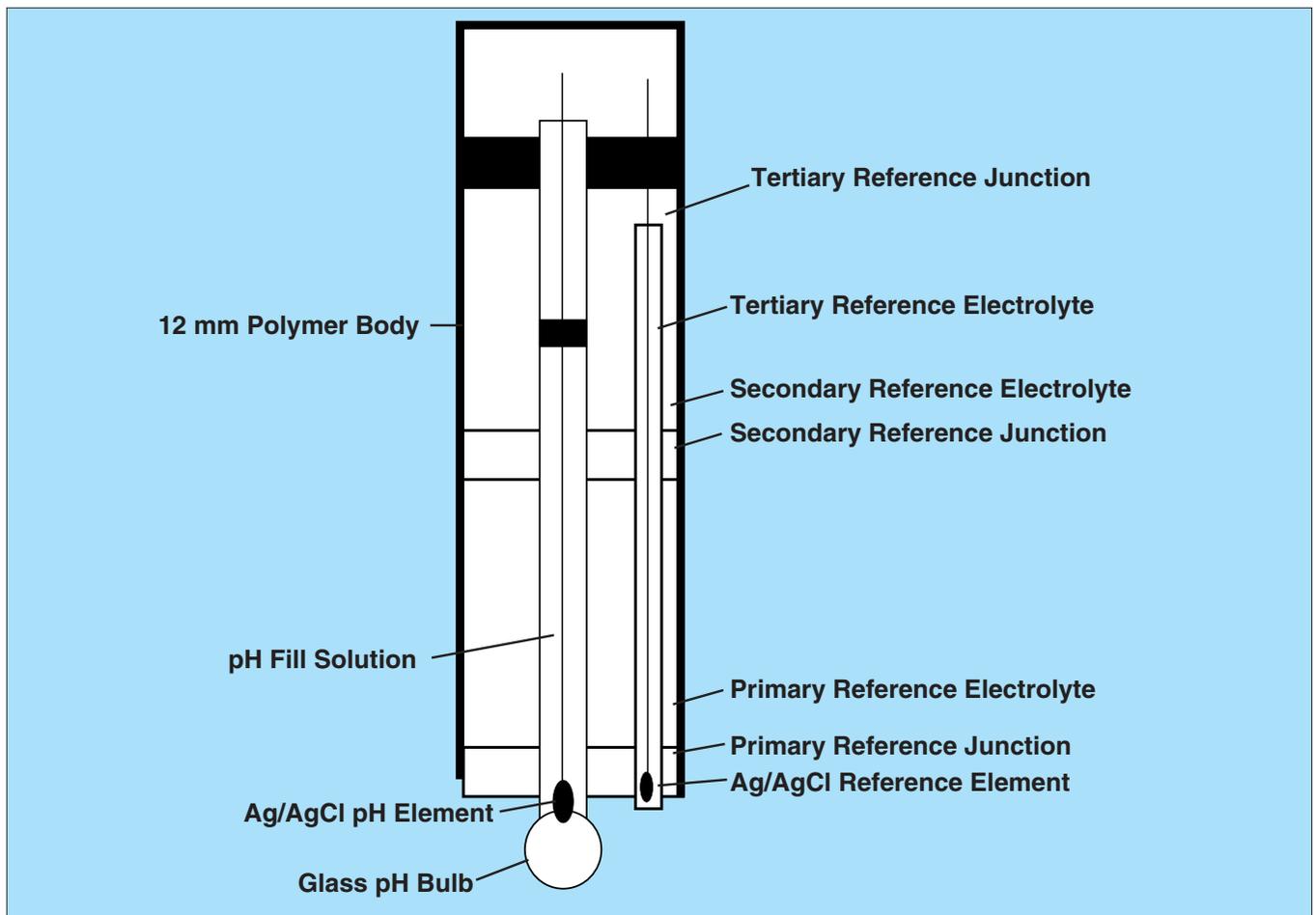


Triple Junction pH Electrode Cross Section



While the mercury/calomel reference electrode is still used in some measurement systems, it has rapidly been replaced with chemistries using less toxic substances. The most common reference electrode is the silver/silver chloride cell; it is simple and reliable. Problems encountered because of silver ions within the primary reference junction such as precipitation with sulfides and proteins have been greatly reduced or eliminated by using electrodes with multiple junctions without the presence of silver in the primary electrolyte. Rapid stability of

response to temperature changes is a characteristic of premium electrodes. By locating the silver/silver chloride reference electrode properly in relation to the pH sensing electrode, temperature response characteristics approaching the temperature characteristics of the single-phase iodine/iodide redox electrolyte system can be obtained.

As shown above, the 12 mm polymer body incorporates a triple junction reference system with the silver/silver chloride cell encapsulated in a glass tube placed just behind the patented Porous

Teflon® primary reference junction. This pH glass bulb/reference cell geometry provides rapid and equal cell temperature equilibration times when the electrode is subjected to sudden temperature swings. Both the primary and secondary reference electrolyte gels are prepared free of silver ions and provide a large-volume path from the primary reference junction to the silver/silver chloride reference element located at the bottom of the capillary tube.