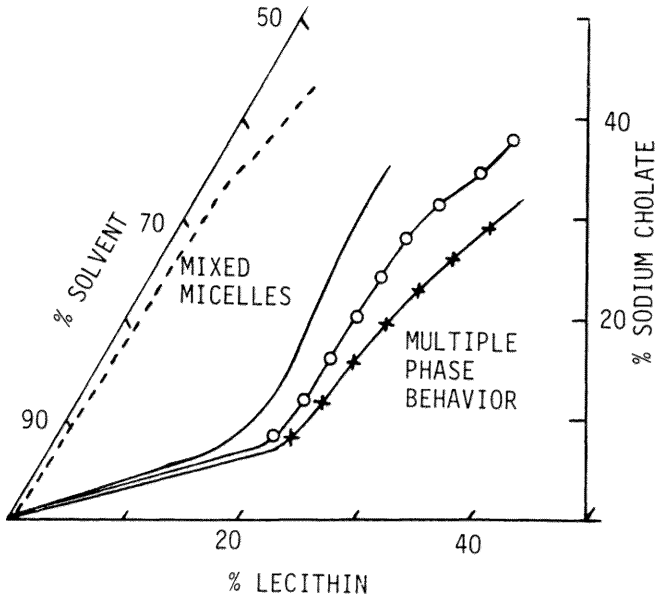

Figure 17.13 Partial ternary diagram for the system water–sodium cholate–totally hydrogenerated lecithin (– – – – – –), and for three systems using purified lecithin--sodium cholate and either water (————), water/propylene glycol 1:1 (–o–o–), or water/butanediol 1:1 (–×–×–). The micellar region was determined at 30°C.

water system, compared with having water as the solvent. For the water system, a lamellar liquid crystalline surface film immediately formed around the added lecithin, severely hindering solubilization. The bilayer destabilizing action of the propylene glycol prevented this film formation resulting in rapid dissolution of the lecithin in the sodium cholate–water micellar system. Replacement of half the water with butanediol had an effect similar to the use of propylene glycol.

B. Topical Liquid Crystals

Lyotropic liquid crystalline vehicles have generally the same advantages that were listed for microemulsions. These mesophases are thermodynamically stable and have unique, often superior, solubilization properties. Unlike microemulsions, some of the liquid crystalline systems may be slightly cloudy, rather than clear. In addition to the advantages listed for microemulsions, liquid crystals may