

Table 19.9 Clear Aqueous Gel

Ingredient	Wt%	Tradename / supplier
Water	59.8	
Carbomer 934	0.5	Carbopol 934 / B.F. Goodrich
Triethanolamine (99%)	1.2	
Glycerin	34.2	
Propylene glycol	2.0	
Dimethicone copolyol	2.3	193 Surfactant / Dow Corning

The active ingredients for the formulation listed in Table 10 are surfactants designed for cleaning. The formulation is similar to a shampoo but is suitable for cleaning skin as well because the surfactant combination used has very low skin irritation. Dimethicone copolyol is the only type of silicone that is suitable for use in this type of formulation because it will not interfere with foaming. The viscosity of the formulation is controlled by the amount of sodium chloride used. If a higher viscosity is desired, then the sodium chloride level should be increased. The formulation is prepared by first dissolving the sodium chloride in the water, and then mixing in the other ingredients in the order listed. The two surfactants, sodium laureth sulfate and cocamidopropyl betaine, are usually sold as water solutions. For this formulation, the specific concentrations of surfactants in water are given. Surfactants from other manufacturers may differ in concentration, so adjustments should be made to compensate.

F. The Use of Silicones in Solid Delivery Forms (Sticks)

In certain categories of topical formulations, solid, or stick formulations are well suited for delivering the active ingredient. This is especially true for antiperspirants and deodorants. The formulations given in Tables 11 and 12 are based on a deodorant and an antiperspirant, respectively. The clear stick is suitable for delivering active ingredients that are soluble in one or more of the liquid ingredients. Sodium stearate is the gellant for the clear stick. A typical deodorant stick is simply a solution of biocide (e.g., triclosan) in a mixture of water and ethanol gelled with sodium stearate. To accommodate the cyclomethicone while maintaining clarity, a combination of propylene glycol, isostearyl alcohol, and PPG 10