

by the formulation (spreadability). Generally, 1 to 5  $\mu\text{l}$  of formulation will cover 1-cm<sup>2</sup> skin surface area. The drug mass within that amount will be determined by the concentration of drug within the formulation.

#### E. Open Versus Occluded

The use of the product under normal circumstances will determine its application.

#### F. Finite Versus Infinite Dose

For dermatological products, a dose relevant to actual use will usually suggest a finite dose. A delivery system that employs constant delivery may justify infinite dose. Common sense says to follow how the product will be used.

#### G. Equilibration

Physiologically (except for some psoriasis treatment) a person does not sit submerged in a tub before applying a dermatological or transdermal drug. Therefore, it seems irrational to use equilibration beyond 30 min to determine if the system is working (bubbles). Because human skin tends to fall apart after 24 to 48 hr in an *in vitro* run, adding more water time generally seems irrelevant.

#### H. Time

The relevant *in vivo* drug use should determine *in vitro* run time. Most absorption is determined over a 24 to 48 hr period because of the tendency of human skin to fall apart after this.

#### I. Receptor Fluid

The previous published recommendation is as follows (1): For most studies, an isotonic solution buffered to pH 7.4 is a suitable and preferred receptor fluid; a different pH can be used if it can be justified. In all instances, the thermodynamic activity of drug in the receptor fluid should not exceed 10% of its thermodynamic activity in the donor medium to maintain a favorable driving force for permeation and to assure reasonable and efficient collection of permeant. The receptor medium may need alteration from a strictly aqueous medium to attain this endpoint for hydrophobic compounds. This factor supercedes concern for maintaining a minimal receiver volume.