

chapter 4

Emulsions

Overview

Upon completion of this chapter, you should be able to:

- understand how to calculate the quantities of ingredients required to make a primary emulsion
- prepare an emulsion from first principles
- select an appropriate container in which to package an emulsion
- prepare an appropriate label for an emulsion.

Introduction and overview of emulsions

The pharmaceutical term 'emulsion' is solely used to describe preparations intended for internal use, i.e. via the oral route of administration. Emulsion formulations for external use are always given a different title that reflects their use, e.g. application, lotion and cream.

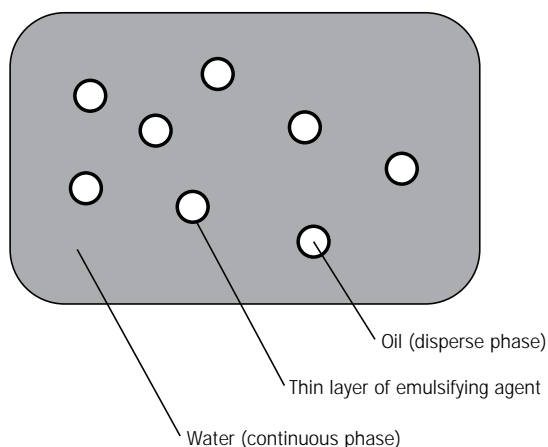


Figure 4.1 Illustration of an oil-in-water emulsion..

British Pharmacopoeia (BP) definition (oral emulsions)

Oral emulsions are oral liquids containing one or more active ingredients. They are stabilised oil-in-water dispersions, either or both phases of which may contain dissolved solids. Solids

Definition

An emulsion is essentially a liquid preparation containing a mixture of oil and water that is rendered homogeneous by the addition of an emulsifying agent. The emulsifying agent ensures that the oil phase is finely dispersed throughout the water as minute globules (Figure 4.1). This type of emulsion is termed an 'oil-in-water' emulsion. The oily phase (disperse phase) is dispersed through the aqueous phase (continuous phase). Generally all oral dose emulsions tend to be oil-in-water as the oily phase is usually less pleasant to take and more difficult to flavour. 'Water-in-oil' emulsions can be formed but these tend to be those with external uses.