

suitable device. Some potent drugs are presented in this way because they are rapidly absorbed when administered as a fine powder via the nose (see Chapter 38 for a detailed discussion of the nasal route of administration). To enhance convenience and ensure that a uniform dose is delivered on each occasion, delivery devices have been developed. Sufficient drug for one dose may be presented in a hard gelatin capsule diluted with an inert, soluble diluent such as lactose. The capsule is placed in the body of the nasal delivery device and is broken when the device is assembled. The drug is inhaled, via the nose, by the patient as a fine powder. The size of the particles is such as to localize their deposition in the nasal cavity and is verified by adequate methods of particle-size determination.

Powders for external use

Powders for cutaneous application. (topical powders)

Powders for cutaneous application are preparations consisting of solid, loose, dry particles of varying degrees of fineness. They contain one or more active substances, with or without excipients and, if necessary, appropriate colouring matter.

Powders for cutaneous application are presented as single-dose powders or multidose powders. They should be free from grittiness. Powders specifically intended for use on large open wounds or on severely injured skin must be sterile.

Multidose powders for cutaneous application may be dispensed in sifter-top containers, containers equipped with a mechanical spraying device or in pressurized containers.

In the manufacture of powders for cutaneous application, measures should be taken to ensure a suitable particle size (determined and controlled by sieving) with regard to the intended use. Additionally, suitable measures should be taken to ensure their microbial quality and if the label indicates that the preparation is sterile, it must comply with a test for sterility.

Sterile powders used in cutaneous application must be prepared using materials and methods designed to ensure sterility and to avoid the introduction of contaminants and the growth of micro-organisms.

Dusting powders

Dusting powders contain ingredients used for therapeutic, prophylactic or lubricant purposes and are

intended for external use. Only sterile dusting powders should be applied to open wounds.

Dusting powders for lubricant purposes or superficial skin conditions need not be sterile but they should be free from pathogenic organisms. As minerals such as talc and kaolin may be contaminated at source with spores of organisms causing tetanus and gangrene, these should be sterilized before they are incorporated into the product. Talc Dusting Powder is a sterile cutaneous powder containing starch and purified talc in which the talc is sterilized before incorporation with the starch, or the final product is subject to a suitable terminal sterilization procedure.

Dusting powders are normally dispensed in glass or metal containers with a perforated lid. The powder must flow well from such a container, so that it can be dusted over the affected area. The active ingredients must therefore be diluted with materials having reasonably good flow properties, e.g. purified talc or maize starch.

Hexachlorophene Dusting Powder contains an antibacterial agent and Talc Dusting Powder is used as a lubricant to prevent chafing. Proprietary products are available, usually for the treatment of bacterial or fungal infections, e.g. Canesten® Powder (clotrimazole) is used as an antifungal agent.

Dusting powders are powders for cutaneous application which have a suitable fineness. An example is Talc Dusting Powder, which is a mix of 10% of starch and 90% of Purified Talc, where the particle size is controlled by size separation using, typically, a 250 µm sieve.

Ear powders.

Powders containing active ingredients can also be administered to the ear. Ear powders normally have to comply with the pharmaceutical requirements for powders for cutaneous application. They are supplied in containers fitted with a suitable device for application.

Preparations requiring further treatment at time of dispensing

Some preparations for oral use are prepared from powders or granules to yield oral solutions or suspensions using a suitable vehicle. This may be performed at the dispensing stage or by the patient prior to administration. The vehicle for any preparations for oral use is chosen having regard to the