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antimony trichloride solution, at the maximum at about 500 nm, using *ethylene chloride* as the blank.
The amount of calciferol, in mg, in the weight of sample taken is given by the formula:

$$\frac{0{\cdot}04(e_1 - e_2)}{(e_3 - e_1)}$$

where e_1 = the extinction due to the solution in the first tube,
e_2 = the extinction due to the solution in the second tube, and
e_3 = the extinction due to the solution in the third tube.
Each mg of calciferol is equivalent to 40,000 Units of vitamin D.

Appendix 25

Powders and Suspensions

A. Classification of Powders

The descriptive term used to indicate the degree of comminution of substances employed in the manufacture of preparations in the British Pharmaceutical Codex can usually be related to the size of the mesh of the sieve or sieves through which the whole or a portion of the powder is able to pass. The wire sieves used in sifting powders are distinguished by numbers and should comply with the requirements of British Standard 410:1969. In the British Pharmacopoeia and the British Pharmaceutical Codex, sieves were formerly designated by the mesh count or mesh number which was the number of meshes per inch. Sieves are now designated by aperture size and the numbers indicate the nominal aperture size, measured in millimetres for aperture sizes of 1 mm or greater and in micrometers (µm) for aperture sizes of less than 1 mm.
The table below relates the sieve numbers now used to the mesh numbers formerly used. The relationship of the mesh number to the actual number of meshes per inch depends on the wire diameter and should be taken as an approximation.

Sieve Number	Mesh Number	Sieve Number	Mesh Number
mm		µm	
4·00	4	355	44
3·35	5	250	60
2·80	6	180	85
1·70	10	150	100
µm		125	120
710	22	106	150
500	30	75	200

The following terms are used in the description of powders:

COARSE POWDER. A powder of which all the particles pass through a No. 1·70 sieve and not more 40·0 per cent pass through a No. 355 sieve.

MODERATELY COARSE POWDER. A powder of which all the particles pass through a No. 710 sieve and not more than 40·0 per cent pass through a No. 250 sieve.

MODERATELY FINE POWDER. A powder of which all the particles pass through a No. 355 sieve and not more than 40·0 per cent pass through a No. 180 sieve.

FINE POWDER. A powder of which all the particles pass through a No. 180 sieve.

VERY FINE POWDER. A powder of which all the particles pass through a No. 125 sieve.

ULTRA-FINE POWDER. A powder of which the maximum diameter of 90 per cent of the particles is not greater than 5 µm and of which the diameter of none of the particles is greater than 50 µm.

When the degree of comminution of a powder is defined by means of a number, the whole of the powder passes through the sieve described by that number.

B. Determination of the Surface Area of Bephenium Hydroxynaphthoate

Determine by the air-permeability method described by F. M. Lea and R. W. Nurse, *J. Soc. Chem. Ind., Lond.* (*Transactions*), 1939, **58**, 277–283, using a compact 2·54 cm in diameter, 1·00 cm in height, and having a porosity within the range 0·475 to 0·525.
For the purpose of the calculations, the density of the particles may be assumed to be 1·298 g per cm^3.

C. Determination of Particle Size in Suspensions

The following method is to be used, when directed, to determine the particle size of a suspended solid in a preparation:
Dilute a suitable quantity of the preparation with an equal volume of *glycerol* and further dilute, if necessary, with a mixture of equal volumes of *glycerol* and water; alternatively, where specified in the individual monograph, use *liquid paraffin* as the diluent.
Mount the diluted preparation on a slide and examine random fields microscopically using a microscope providing adequate resolution for the observation of small particles.
Observe that there are no particles (or, if stated, not more than a few particles) above the maximum size permitted in the individual monograph.
Count the numbers of particles having maximum diameters above and/or below the limiting sizes permitted in the individual monographs and hence calculate the percentages of particles having maximum diameters within the stated limits.
The percentages should be calculated from observations on at least 1000 particles.