

and equating the two right hand sides then gives

$$2.5 - 0.25q = 10 + 20q \quad (10.34)$$

or

$$20.25q = 12.5 \quad (10.35)$$

or

$$q = \frac{12.5}{20.25} = 0.6 \text{ mg} \quad (10.36)$$

It simplifies the computation that the moisture content is given in mg of moisture per g of dry solid (i.e., not in percent, which would be related to mg of moisture per g of total weight). It should be noted that this situation is simplified by assuming the isotherm to be linear.

8.3. Disintegration

Tablets (whether coated or not) are usually subjected to a disintegration test. The disintegration was the first in-vitro test used by the U.S.P. It is now not obligatory compendially (but is recommended); in an obligatory sense it has been replaced by the dissolution test. This latter, hence, is the more important test, but it will be seen that there often is a correlation between the two, and since the disintegration test is much more easily carried out, a stability program will check disintegration frequently, and dissolution less frequently, primarily due to labor intensity.

The apparatus used (U.S.P. XX, p. 958) is shown schematically in Fig. 22. It is an apparatus where six tubes are placed in holders on a circular screen, which is then raised and lowered between 29 and 32 times per minute through a distance of 5.3–5.7 cm in a 1000 mL beaker containing the disintegration medium (either water or N/10 hydrochloric acid). The wire mesh oscillates so that it is 2.5 cm (or more) below the surface at the upstroke and 2.5 cm (or more) from the bottom of the

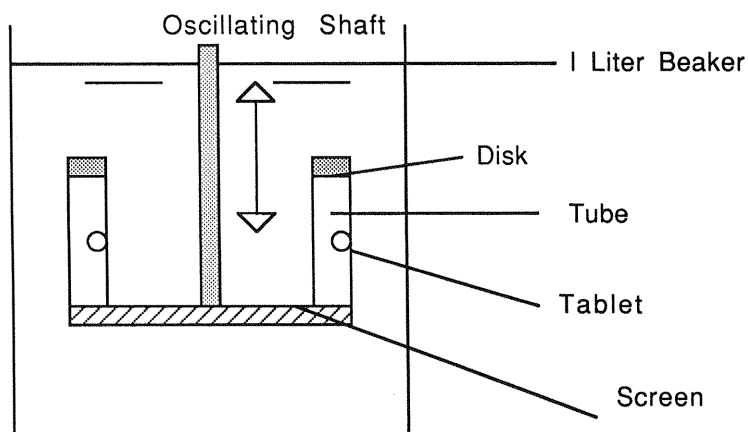


Fig. 22 Disintegration apparatus.