

ertindole, solubility  $10 \mu\text{g}/\text{mL}$ ). Pinderre et al. (1997) have described coating powders with Eudragit to protect them against moisture uptake and have evaluated the coatings by way of moisture uptake rates.

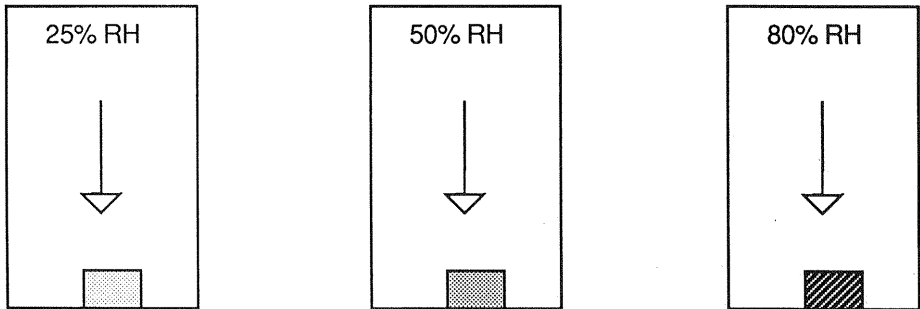
## 6. CRITICAL MOISTURE CONTENT

There are humidities below which a solid will not adsorb (considerable amounts of) moisture, i.e., not form a “bulk-sorbed” layer. These are dictated by the solubility of the compound, as will be seen below.

Suppose a solid is placed in a room of a given RH, as shown in Fig. 10. If the RH were 30%, then it might pick up moisture at a given rate, at 50% RH at a higher rate, and at 80% RH at an even higher rate.

The rate with which it picks up moisture is determined by weighing the sample at given intervals, as demonstrated in Table 1. It is noted that there is a linear section of the curve (up to 6 days), as shown in Fig. 11 and 12. The slope of this linear segment is the moisture uptake rate (MUR). The actual uptake rates (determined from the linear portions) are shown in Table 2.

The uptake rates can simply be obtained by weighing the sample after a given time (6 days), but in such a case it is assumed that the moisture uptake is still in the linear phase. If, e.g., the weight gain is 5 mg per 10 g sample in 6 days, then the MUR is  $5/10/6 = 0.083 \text{ mg}/\text{g}/\text{day}$ .



**Fig. 10** Mechanism of moisture uptake.

**Table 1** Moisture Uptake of a Water-Soluble Compound at 50% RH

Days stored at 50% RH	Moisture pickup (mg/g)
2	0.5
6	1.5
18	2.25
36	3.4
100	3.0
144	4.2
288	4.3