CHAPTER - 1

Systems of Measurement, Storage Conditions and Common Household Measures

Like other field of sciences, it is accepted to use International System (SI) of Units in pharmaceutical sciences and practice. The few relevant fundamental units are:

Parameter	Unit
Length	meter (m)
Mass	kilogram (kg)
Volume (capacity)	cubic meter (m^3)
Temperature	kelvin (K)
Amount of substance	mole (mol)
Radio activity	becquerel (Bq)

Though SI units are expected to be used, still it is found to have the common (older systems) units in daily practice. Hence, it is essential that the pharmacist should know the common units too and their equivalents, how to convert them to SI units and vice versa.

Volume

The volume is commonly expressed in terms of millilitre (ml) or litre.

1 litre = 1000 ml = 1 dm^3

Concentration expressed in gram per litre = g/dm^3

Mass

The mass is commonly expressed as milligram (mg) or gram (g).

1 kilogram (kg) = 1000 g

1 g = 1000 mg

1 mg = 1000 microgram (μg)

The 'curie' is the traditional unit of radioactivity (Ci) = 3.7×10^{10} Bq

Intersystem Conversion Equivalents

Weight measure (mass)	Liquid measure (volume)
1 kg = 2.2 pounds (lb)	1 ml = 16.23 minims (m)
1 lb = 453.4 g	1 minim = 0.06 ml (app.)
1 ounce (oz) = 28.35 g	1 fluid ounce = 29.57 ml (app. 30 ml)
1 grain (gr) = 64.8 mg (app. 65 mg)	1 pint (pt) = 473 ml
1 g = 15.432 gr	1 gallon (gal) USA= 3785 ml
	1 gallon (gal) UK = 4546 ml

Storage Conditions (NFI 2016)

Storage	Meaning
Store in Cold Place	2 – 8 °C (Keep in Refrigerator)
Store in Cool Place	10 – 25 °C
Do not store over 8 °C	Keep in Refrigerator, but not in freezer.
Do not store over 30 °C	Store at Room Temperature
Protect from Moisture	Store in normal humidity at room temperature (Relative Humidity less than 60 %.
Protect from Light	Light resistant cupboard / drawer (Amber coloured bottle is usually provided for liquids)

Common Household Measures

Domestic Measure	Volume
1 tumblerful	240 ml
1 teacupful	120 ml
1 wine glass	60 ml
1 tablespoonful	15 ml
1 teaspoonful	5 ml