

→
$$\text{mole} = \frac{\text{mass (g)}}{\text{gm molecular weight}}$$

→
$$\text{molarity} \downarrow$$

$$\text{mole / lit of solution}$$

$$\text{molality} \downarrow$$

$$\text{moles / kg of solvent}$$

ex: $\text{MW of Tris} = 121$

1 molar Tris = 121 gm Tris
 ↓
 add in water upto
 1 Lit
 ↓
 total volume = 1 lit

1 molar Tris = 121 gm Tris +
 1 kg (1000 gm) water
 ↓
 total volume > 1 lit

⇒ Normality =
$$\frac{\text{gm Eq. of solute}}{\text{lit of solut.}}$$

- ex:
- 1 N = 1 mol H^+
 - 1 N HCl = 1 mol H^+
 - 1 N H_2SO_4 = 0.5 mol H^+

⇒
$$\text{Gm Eq.} = \frac{\text{MW}}{\text{charge}}$$

- 1 m Eq = 1 mmol +/- charge
- 1 m Eq Na^+ = 1 mmol Na^+
- 1 m Eq Ca^{2+} = 1/2 mmol Ca^{2+}
- 10 gm Eq H_2SO_4 = 5 gm H_2SO_4