

Important Determination of Equivalent Mass Formulas PDF

Formulas
Examples
with Units



List of 10 Important Determination of Equivalent Mass Formulas

1) Determination of Equivalent Mass of Acid using Neutralization Method Formula

Evaluate Formula

Formula

$$E.M_{\text{acid}} = \frac{W_a}{V_{\text{base}} \cdot N_b}$$

Example with Units

$$0.44 \text{ g} = \frac{0.33 \text{ g}}{1.5 \text{ L} \cdot 0.5 \text{ Eq/L}}$$

2) Determination of Equivalent Mass of Base using Neutralisation Method Formula

Evaluate Formula

Formula

$$E.M_{\text{base}} = \frac{W_b}{V_{\text{acid}} \cdot N_a}$$

Example with Units

$$1.6 \text{ g} = \frac{0.32 \text{ g}}{2 \text{ L} \cdot 0.1 \text{ Eq/L}}$$

3) Determination of Equivalent Mass of Metal added using Metal Displacement Method Formula

Evaluate Formula

Formula

$$E_1 = \left(\frac{W_1}{W_2} \right) \cdot E_2$$

Example with Units

$$5.486 \text{ g} = \left(\frac{0.336 \text{ g}}{0.55 \text{ g}} \right) \cdot 8.98 \text{ g}$$

4) Determination of Equivalent Mass of Metal Displaced using Metal Displacement Method Formula

Evaluate Formula

Formula

$$E_2 = \left(\frac{W_2}{W_1} \right) \cdot E_1$$

Example with Units

$$8.9702 \text{ g} = \left(\frac{0.55 \text{ g}}{0.336 \text{ g}} \right) \cdot 5.48 \text{ g}$$

5) Determination of Equivalent Mass of Metal using Chloride Formation Method Formula

Evaluate Formula

Formula

$$E.M_{\text{Metal}} = \left(\frac{W}{M_{\text{reacted}}} \right) \cdot E.M_{\text{Cl}}$$

Example with Units

$$3.0992 \text{ g} = \left(\frac{0.033 \text{ g}}{0.378 \text{ g}} \right) \cdot 35.5 \text{ g}$$



6) Determination of Equivalent Mass of Metal using Oxide formation Method Formula

Formula

$$E.M_{\text{Metal}} = \left(\frac{W}{M} \right) \cdot E.M_{\text{Oxygen}}$$

Example with Units

$$3.1059 \text{ g} = \left(\frac{0.033 \text{ g}}{0.085 \text{ g}} \right) \cdot 8 \text{ g}$$

Evaluate Formula 

7) Determination of Equivalent Mass of Metal using Oxide formation Method given vol. of Oxygen at STP Formula

Formula

$$E.M_{\text{Metal}} = \left(\frac{W}{V_{\text{displaced}}} \right) \cdot V_{\text{Oxygen}}$$

Example with Units

$$3.3 \text{ g} = \left(\frac{0.033 \text{ g}}{56 \text{ mL}} \right) \cdot 5600 \text{ mL}$$

Evaluate Formula 

8) Determination of Eqv. Mass of Metal using Chloride Formation Method given vol. of Cl at STP Formula

Formula

$$E.M_{\text{Metal}} = \left(\frac{W}{V_{\text{reacted}}} \right) \cdot V_{\text{Chlorine}}$$

Example with Units

$$3.2997 \text{ g} = \left(\frac{0.033 \text{ g}}{112.01 \text{ mL}} \right) \cdot 11200 \text{ mL}$$

Evaluate Formula 

9) Determination of Eqv. Mass of Metal using H₂ Displacement Method given vol. of H₂ displaced at STP Formula

Formula

$$E.M_{\text{Metal}} = \left(\frac{W}{V} \right) \cdot V_{E.M}$$

Example with Units

$$3.3 \text{ g} = \left(\frac{0.033 \text{ g}}{112 \text{ mL}} \right) \cdot 11200 \text{ mL}$$

Evaluate Formula 

10) Equivalent Mass of Metal using Hydrogen Displacement Method Formula

Formula

$$E.M_{\text{Metal}} = \left(\frac{W}{M_{\text{displaced}}} \right) \cdot E.M_{\text{Hydrogen}}$$

Example with Units

$$3.1088 \text{ g} = \left(\frac{0.033 \text{ g}}{0.0107 \text{ g}} \right) \cdot 1.008 \text{ g}$$

Evaluate Formula 



Variables used in list of Determination of Equivalent Mass Formulas above

- E_1 Equivalent Mass of Metal added (Gram)
- E_2 Equivalent Mass of Metal displaced (Gram)
- $E.M_{\text{acid}}$ Equivalent mass of acids (Gram)
- $E.M_{\text{base}}$ Equivalent mass of bases (Gram)
- $E.M_{\text{Cl}}$ Equivalent Mass of Chlorine (Gram)
- $E.M_{\text{Hydrogen}}$ Equivalent Mass of Hydrogen (Gram)
- $E.M_{\text{Metal}}$ Equivalent Mass of Metal (Gram)
- $E.M_{\text{Oxygen}}$ Equivalent Mass of Oxygen (Gram)
- M Mass of Oxygen displaced (Gram)
- $M_{\text{displaced}}$ Mass of Hydrogen Displaced (Gram)
- M_{reacted} Mass of Chlorine reacted (Gram)
- N_a Normality of acid used (Equivalents per Liter)
- N_b Normality of base used (Equivalents per Liter)
- V Vol. of hydrogen displaced at STP (Milliliter)
- V_{acid} Vol. of acid required for neutralisation (Liter)
- V_{base} Vol. of base required for neutralisation (Liter)
- V_{Chlorine} Vol. of Chlorine reacts with eqv. mass of metal (Milliliter)
- $V_{\text{displaced}}$ Vol. of Oxygen displaced (Milliliter)
- $V_{E.M}$ Vol. of Hydrogen displaced at NTP (Milliliter)
- V_{Oxygen} Vol. of oxygen combined at STP (Milliliter)
- V_{reacted} Vol. of Chlorine reacted (Milliliter)
- W Mass of Metal (Gram)
- W_1 Mass of Metal added (Gram)
- W_2 Mass of Metal displaced (Gram)
- W_a Weight of acid (Gram)
- W_b Weight of bases (Gram)







Constants, Functions, Measurements used in list of Determination of Equivalent Mass Formulas above

- **Measurement: Weight** in Gram (g)
Weight Unit Conversion ↻
- **Measurement: Volume** in Liter (L), Milliliter (mL)
Volume Unit Conversion ↻
- **Measurement: Molar Concentration** in Equivalents per Liter (Eq/L)
Molar Concentration Unit Conversion ↻





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