Answer on Question#72579 – Chemistry – Organic chemistry

Question:

1. How many kmols are in 890 cg of sodium phosphate?

Solution:

1 cg = 0.01g

890cg =8.90 g

$M(Na_3PO_4)$ = 163.9 g/mol

$$n(Na_3PO_4) = \frac{m(Na_3PO_4)}{M(Na_3PO_4)} = \frac{8.90\ g}{163.9\frac{g}{mol}} = 0.0543\ mol$$

1 mol = 10^{-3} kmol

0.0543 mol = 5.43×10^{-5} kmol

Answer:

5.43×10^{-5} kmol Na_3PO_4

Question:

2. How many pg are in 365 amol of potassium perchlorate?

Solution:

1 amol = 10^{-18} mol

365 amol = 3.65×10^{-16} mol

$M(KClO_4)$ = 138.6 g/mol

$$m(KClO_4) = n(KClO_4) \times M(KClO_4) = 3.65 \times 10^{-16} mol \times 138.6\frac{g}{mol} = 5.06 \times 10^{-14} g$$

1g = 10^{12} pg

5.06×10^{-14} g = 0.0506 pg.

Answer:

0.0506 pg $KClO_4$

Question:

3. How many damol are in 1000 dg of arsenic (III) sulfide?

Solution:

1 dg = 0.1 g

1000 dg = 100 g

$M(As_2S_3)$ = 246.0 g/mol

$$n(As_2S_3) = \frac{M(As_2S_3)}{M(As_2S_3)} = \frac{100\ g}{246.0\ g/mol} = 0.407\ mol$$

1 mol = 0.1 damol

0.407 mol = 0.0407 damol

Answer:

0.0407 damol As_2S_3

Question:

4. How many hg are in 740.00 fg of barium hydroxide?

Solution:

1 fg = 10^{-15} g

1 hg = 10^{2} g

$$740.00\ fg \times \frac{10^{-15} g}{1\ fg} \times \frac{1\ hg}{10^{2} g} = 7.4000 \times 10^{-15} hg$$

Answer:

7.4000×10^{-15}hg $Ba(OH)_2$