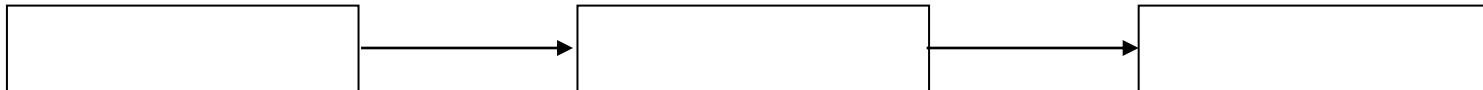


Extra Review of Mole Conversions

Directions: Perform each conversion. Show all work, show crossing units out, make sure answer has units. Answers are in parenthesis. Make sure to check your work as you go!!! Please do some of each to review for quizzes/tests! Keep this in the Unit #0 pocket in your notebook along with your extra binder paper



1) Mole → Mass

Using molar mass of each substance, convert the following quantities.

- | | | | |
|-----------------------------------|-----------|--|-----------------------------|
| a. 10.0 mol Cr | (520 g) | f. 0.160 mol H ₂ O | (2.88 g) |
| b. 3.32 mol K | (130 g) | g. 5.08 mol Ca(NO ₃) ₂ | (834 g) |
| c. 2.20 x 10 ⁻³ mol Sn | (0.261 g) | h. 15.0 mol H ₂ SO ₄ | (1470 g) |
| d. 0.720 mol Be | (6.48 g) | i. 4.52 x 10 ⁻⁵ mol C ₂ H ₄ | (1.27 x 10 ⁻³ g) |
| e. 2.40 mol N ₂ | (67.2 g) | j. 0.0112 mol K ₂ CO ₃ | (1.55 g) |

2) Mass → Mole

Using molar mass of each substance convert the following quantities.

- | | | | |
|---------------------------------|-------------------------------|--|-------------------------------|
| a. 72.0 g Ar | (1.80 mol) | f. 27.4 g NO ₂ | (0.596 mol) |
| b. 3.70 x 10 ⁻¹ g B | (3.43 x 10 ⁻² mol) | g. 5.00 g H ₂ | (2.50 mol) |
| c. 187 g Al | (6.93 mol) | h. 2.64 x 10 ⁻⁴ g Li ₃ PO ₄ | (2.28 x 10 ⁻⁶ mol) |
| d. 333 g SnF ₂ | (2.13 mol) | i. 11.0 g CH ₄ | (0.688 mol) |
| e. 7.21 x 10 ⁻² g He | (1.80 x 10 ⁻² mol) | j. 847 g (NH ₄) ₂ CO ₃ | (8.82 mol) |

3) Find the number of moles in each of the number of “particles.” Remember that “particles” is just a generic term

Using Avogadro’s Number, convert the following quantities.

- | | |
|--|--------------------------------|
| a. 1.20 x 10 ²⁵ atoms of P | (19.9 mol) |
| b. 3.87 x 10 ²¹ molecules of AlF ₃ | (6.43 x 10 ⁻³ mol) |
| c. 4.81 x 10 ¹⁴ molecules of NH ₃ | (7.99 x 10 ⁻¹⁰ mol) |

4) How many “particles” are in each of the following mole amounts? Remember that “particles” is just a generic term

Using Avogadro’s Number, convert the following quantities.

- | | |
|---|--------------------------------------|
| a. 1.24 mol Cl ₂ | (7.46 x 10 ²³ molecules) |
| b. 4.20 x 10 ⁻³ mol K ₂ S | (2.53 x 10 ²¹ molecules) |
| c. 34.02 mol Ca(OH) ₂ | (2.048 x 10 ²⁵ molecules) |

5) Convert the following – you will need to do multiple step dimensional analysis to do these!

- | | |
|---|-------------------------------------|
| a. Find the number of molecules in 60.0 g of N ₂ O. | (8.21 x 10 ²³ molecules) |
| b. Find the grams of 3.24 x 10 ²² molecules of Ne | (1.09g) |
| c. Find the number of molecules in 18.0g of CH ₄ | (6.77 x 10 ²³ molecules) |
| d. How many grams in 8.35 x 10 ³⁷ molecules of SO ₃ | (1.11 x 10 ¹⁶ g) |
| e. Find the mass of one atom of nickel. | (1 x 10 ⁻²² g) |

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