

Molar Mass

Name _____ Period _____ Date _____

- Using the average atomic mass values on your periodic table, calculate the number of moles of each element in samples with the following masses.

a. 26.2 g gold

b. 41.5 g of calcium

c. 335 mg of barium

d. 12.01 g of carbon

- Using the average atomic mass values on your periodic table, calculate the mass in grams of each of the following samples.

a. 2.00 moles of iron

b. 0.521 moles of nickel

c. 1.23×10^{-3} moles platinum d. 72.5 moles of lead

e. 0.00102 moles of magnesium f. 4.87×10^3 moles of aluminum

- Calculate the molar mass for each of the following substances.

a. sodium nitride (Na_3N)

b. carbon disulfide (CS_2)

c. ammonium bromide (NH_4Br)

d. ethyl alcohol ($\text{C}_2\text{H}_5\text{OH}$)

e. sulfuric acid

Name _____

Period _____ Date _____

1. What is the molar mass of each of the following compounds? Show your work!
 - a. barium perchlorate (p. 100)
 - b. magnesium sulfate
 - c. lead (II) chloride
 - d. copper (II) nitrate
 - e. tin (IV) chloride
 - f. phenol (C_6H_6O)
2. Calculate the number of moles of the indicated substances below.
 - a. 49.2 mg of sulfur trioxide
 - b. 7.44×10^4 kg of lead (IV) oxide
 - c. 59.1 g of chloroform ($CHCl_3$)
 - d. 4.01 g of lithium hydroxide
 - e. 521 g of copper (I) chloride
 - e. 151 kg of iron
3. Calculate the mass in grams of each of the following samples.
 - a. 1.50 moles of aluminum iodide
 - b. 1.91×10^{-3} moles of benzene (C_6H_6)
 - c. 4.00 mole of glucose ($C_6H_{12}O_6$)
 - d. 4.56×10^5 moles of ethanol (C_2H_5OH)
 - e. 2.27 moles of calcium nitrate
 - f. 0.00451 moles of ammonium nitrate
 - g. 18.0 moles of water
 - h. 62.7 moles of copper (II) sulfate

Molar Mass

1. Using the average atomic mass values on your periodic table, calculate the number of moles of each element in samples with the following masses.

b. 26.2 g gold

0.133 mole

b. 41.5 g of calcium

1.03 mole

c. 335 mg of barium

0.00244 mole

d. 12.01 g of carbon

1.00 mole

2. Using the average atomic mass values on your periodic table, calculate the mass in grams of each of the following samples.

a. 2.00 moles of iron

112 g

b. 0.521 moles of nickel

30.6 g

c. 1.23×10^{-3} moles platinum

0.240 g

d. 72.5 moles of lead

1.50×10^4 g

e. 0.00102 moles of magnesium

0.248

f. 4.87×10^3 moles of aluminum

131,000 g

3. Calculate the molar mass for each of the following substances.

a. sodium nitride (Na_3N)

83.0 g/mole

b. carbon disulfide (CS_2)

76.2 g/mole

c. ammonium bromide (NH_4Br)

97.9 g/mole

d. ethyl alcohol ($\text{C}_2\text{H}_5\text{OH}$)

46.0 g/mole

e. sulfuric acid

98.1 g/mole

Name _____

Period _____ Date _____

1. What is the molar mass of each of the following compounds? Show your work!

b. barium perchlorate (p. 100)

336.2 g/mole

b. magnesium sulfate

120.38 g/mole

c. lead (II) chloride

278.1 g/mole

d. copper (II) nitrate

187.57 g/mole

e. tin (IV) chloride

260.5 g/mole

f. phenol (C_6H_6O)

94.11 g/mole

2. Calculate the number of moles of the indicated substances below.

c. 49.2 mg of sulfur trioxide

0.000614 mole

b. 7.44×10^4 kg of lead (IV) oxide

311,000 moles

c. 59.1 g of chloroform ($CHCl_3$)

0.495 mole

d. 4.01 g of lithium hydroxide

0.167 mole

e. 521 g of copper (I) chloride

5.26 mole

e. 151 kg of iron

2.70×10^3 mole

3. Calculate the mass in grams of each of the following samples.

d. 1.50 moles of aluminum iodide

612. g

b. 1.91×10^{-3} moles of benzene (C_6H_6)

0.149 g

c. 4.00 mole of glucose ($C_6H_{12}O_6$)

721 g

d. 4.56×10^5 moles of ethanol (C_2H_5OH)

2.11×10^7 g

e. 2.27 moles of calcium nitrate

373 g

f. 0.00451 moles of ammonium nitrate

0.361 g

g. 18.0 moles of water

324 g

h. 62.7 moles of copper (II) sulfate

1.00×10^4 g