1. How many molecules are contained in 55.0 g of H2SO4?

* 1. 0.561 molecule
  2. 3.93 molecules
  3. 3.38 x 1023 molecules
  4. 2.37 x 1024 molecules

**C.8.B**

1. Some students burned magnesium in excess oxygen, as described by the equation



They recorded their data in the table below.



What is the percentage yield of MgO in this reaction?

1. 97.2%
2. 86.8%
3. 58.0%
4. 51.0%

**C.8.E**

1. How many atoms are in a chromium sample with a mass of 13 grams?
2. 1.5 × 1023
3. 3.3 × 1023
4. 1.9 × 1026
5. 2.4 × 1024

**C.8.B**

1. You combine 10.0 grams of hydrogen gas and 15.0 grams of oxygen gas. Which molecule is your limiting reagent?

2H2 + O2 → 2H2O

1. H2
2. O2
3. H20
4. None of the above

**C.8.E**



1. What would be the product(s) of this reaction?
   1. 2Mg3Al2O3
   2. Mg3Al2 + 3O2
   3. 6Mg + Al3O2
   4. 3Mg + Al2O3

**C.8.D**

1. How many fluorine atoms are there in 65 g of CF4?
2. 0.74 atoms
3. 3.0 atoms
4. 4.5 × 1023 atoms
5. 1.8 × 1024 atoms

**C.8.B**

1. What is the number of moles in 432 g Ba(NO3)2?
   1. 0.237 moles
   2. 0.605 moles
   3. 1.65 moles
   4. 3.66 moles

**C.8.A**

1. What coefficients are required to balance this equation?

\_\_ Fe2O3 + \_\_ CO 🡪 \_\_ Fe + \_\_ CO2

1. 2, 6, 3, 6
2. 1, 3, 2, 3
3. 1, 1, 2, 2
4. 1, 1, 2, 1

**C.8.D**

1. How many atoms are contained in 55.0 g of H2SO4?
   1. 0.561 atoms
   2. 3.93 atoms
   3. 3.38 x 1023 atoms
   4. 2.36 x 1024 atoms

**C.8.B**

\_\_\_\_\_ + 4HCl *(aq)* 🡪 PbCl2 *(S)* + Cl2 *(g)* + 2H2O *(l)*

1. The partial chemical equation above represents the formation of lead (II) chloride. What is the missing reactant?
2. PbO*(s)*
3. Pb*(s)*
4. PbO2*(s)*
5. PbCl4*(s)*

**C.8.D**

1. A compound has an empirical formula of CH2O and a molecular mass of 180 g. What is the compound’s molecular formula?
   1. C3H6O3
   2. C6H12O6
   3. C6H11O7
   4. C12H22O11

**C.8.E**

1. The chemical formula of aspirin is C9H8O4. What is the mass of 0.40 moles of aspirin?
2. 45 grams
3. 10.8 grams
4. 160 grams
5. 72 grams

**C.8.A – S**

1. How many molecules of CO2 are present in 97.3 grams of CO2?
2. 1.33×1025
3. 1.33×1024
4. 1.34×1023
5. 1.32×1025

**C.8.B**

2C2H2 *(g)* + 5O2 *(g)* → 4CO2 *(g)* + \_\_\_

1. Which additional product balances this reaction?
2. 4OH(*aq*)
3. CH4(*g*)
4. 2H2O(*g*)
5. H2O2(*g*)

**C.8.D**

1. What is the base unit of amount of pure substance in the International System of Units that contains the same number of elementary entities as there are atoms in exactly 12 grams of the isotope carbon-12?
   1. Kilogram
   2. Ampere
   3. Kelvin
2. Mole

**C.8.A**

1. If 60.2 grams of Hg combines completely with 24.0 grams of Br to form a compound, what is the percent composition of Hg in the compound?
2. 28.5%
3. 71.5%
4. 39.9%
5. 60.1%

**C.8.C**



1. The coefficients necessary to balance the equation correctly are —
   1. 2, 1, 1, 2
   2. 1, 2, 1, 2
   3. 1, 2, 1, 1
   4. 2, 2, 1, 1

**C.8.D**

1. How many oxygen atoms are in 2.10 grams of CaSO4?
2. 3.71 x 1022 atoms of Oxygen
3. 8.61 x 1022 atoms of Oxygen
4. 1.26 x 1022atoms of Oxygen
5. 2.10 x 1022atoms of Oxygen

**C.8.B**

1. In an experiment, 2.62 g of iron react completely with 1.50 g of sulfur. What is the empirical formula for the compound produced?
   1. FeS
   2. FeS2
   3. Fe2S
   4. Fe2S3

**C.8.C**

**CH4 + 2O2 → CO2 + 2H2O**

1. The number of grams of oxygen required for the complete combustion of 4.00 grams of methane (CH4) is —
2. 4.00 g
3. 8.00 g
4. 16.0 g
5. 32.0 g

**C.8.E**

Unit 6 Balancing Equations, Conservation of Mass, Formulas Math, and Stoichiometry Common Assessment Answer Key

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item Number** | **Correct Answer** | **Readiness or Supporting** | **Content Student Expectation** | **Process Student Expectation** |
| 1 | C | R | C.8.B |  |
| 2 | G | S | C.8.E |  |
| 3 | A | R | C.8.B |  |
| 4 | G | S | C.8.E |  |
| 5 | D | R | C.8.D |  |
| 6 | J | R | C.8.B |  |
| 7 | C | S | C.8.A | C.2(G) |
| 8 | G | R | C.8.D |  |
| 9 | D | R | C.8.B |  |
| 10 | H | R | C.8.D |  |
| 11 | B | S | C.8.E |  |
| 12 | J | S | C.8.A |  |
| 13 | B | R | C.8.B |  |
| 14 | H | R | C.8.D |  |
| 15 | D | S | C.8.A |  |
| 16 | G | S | C.8.C |  |
| 17 | B | R | C.8.D |  |
| 18 | F | R | C.8.B |  |
| 19 | A | S | C.8.C |  |
| 20 | H | S | C.8.E |  |