

1. Which of these would be *best* to measure 12.6 mL of liquid ethanol?

- A 25 mL beaker
- B 25 mL volumetric flask
- C 25 mL Erlenmeyer flask
- D 25 mL graduated cylinder

2. A compound has a mass of 2.6632×10^2 g/mol. The number of significant figures in this mass is –

- F 2
- G 4
- H 5
- J 7

3. The correct formula for dinitrogen pentoxide is –

- A N_2O_5
- B N_5O
- C NO_5
- D N_2O

4. If substance X is a liquid, substance Y is a gas, and substance Z is a solid, and all are at the same temperature and pressure, then the order of increasing strength of their intermolecular forces would be –

- A $X < Y < Z$
- B $Y < X < Z$
- C $Z < Y < X$
- D $Y < Z < X$

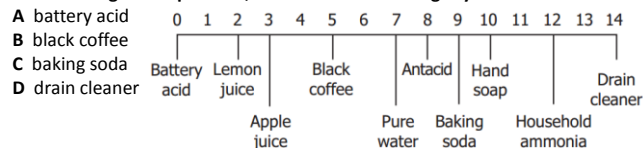
5. If a sample has a mass of 1.25×10^2 g and a volume of 51 mL, what is its density?

- F 0.00025 g/mL
- G 0.0125 g/mL
- H 2.5 g/mL
- J 250 g/mL

6. The product in a balanced reaction is $4 Al_2O_3$. Which of the following shows the number of aluminum and oxygen atoms in $4 Al_2O_3$?

- A 8 atoms of aluminum and 3 atoms of oxygen
- B 6 atoms of aluminum and 3 atoms of oxygen
- C 8 atoms of aluminum and 12 atoms of oxygen
- D 6 atoms of aluminum and 7 atoms of oxygen

7. According to the pH scale, which substance is slightly acidic?



8. Which substance will release the greatest amount of heat when 1.00 mol is frozen?

- A Argon
- B Benzene
- C Mercury
- D Water

Molar Heat of Fusion and Melting Point for Selected Substances

Substance	Melting Point ($^{\circ}C$)	ΔH_{fus} (kJ/mol)
Argon	-190	1.18
Benzene	5.5	9.87
Mercury	-39	2.29
Water	0	6.01

9. Which of the following equations is balanced?

- A $Na + 2 Cl \rightarrow 2 NaCl_2$
- B $2 Na + Cl_2 \rightarrow NaCl_2$
- C $Na + Cl_2 \rightarrow 2 NaCl$
- D $2 Na + Cl_2 \rightarrow 2 NaCl$

10. The picture shows a small section of elements from the periodic table.

Which element has one more proton than element X?

F 1
G 2 Small Periodic Table Section

- H 3
- J 4

	1	2
3	X	4

Material Safety Data Sheet

Product Identification

Chemical Q

Hazard Identification

Baker SAF-T DATA™ Ratings

Health: 2 – Moderate

Flammability: 3 – Severe

Reactivity: 1 – Slight

Contact: 1 – Slight

Hazard ratings are 0 to 4 (0 = no hazard, 4 = extreme hazard).

Lab Protective Equipment: Goggles and shield, lab coat and apron, vent hood, proper gloves, class B extinguisher

Accidental Spill Instructions: Ventilate area containing the spill. Absorb the chemical with inert material (vermiculite, sand) and place in proper chemical waste container. Do not place or pour down the drains.

11. A bottle of chemical Q spills on the floor. According to the MSDS, what is the proper response to this accident?

- F Letting the chemical evaporate by blowing fans on the spill.
- G Diluting the chemical with water, absorbing the liquid with inert material, and disposing of it in the trash.
- H Wiping up the chemical using paper towels and disposing of them in the trash.
- J Absorbing the chemical with inert material and disposing of it in a chemical waste container.