

GLOSSARY**A**

atom the smallest unit of an element that maintains the properties of that element (70)

atomic mass unit a unit of mass that is exactly 1/12 the mass of a carbon-12 atom, or $1.660\ 540 \times 10^{-27}$ kg (78)

atomic number the number of protons in the nucleus of each atom of an element (75)

average atomic mass the weighted average of the atomic masses of the naturally occurring isotopes of an element (79)

Avogadro's number $6.022\ 1367 \times 10^{23}$; the number of particles in exactly one mole of a pure substance (81)

I

isotopes atoms of the same element that have different masses (76)

L

law of conservation of mass mass is neither created nor destroyed during ordinary chemical or physical reactions (66)

law of definite proportions a chemical compound contains the same elements in exactly the same proportions by mass regardless of the size of the sample or the source of the compound (66)

law of multiple proportions if two or more different compounds are composed of the same two elements, then the ratio of the masses of the second element combined with a certain mass of the first element is always a ratio of small whole numbers (66)

M

mass number the total number of protons and neutrons in the nucleus of an isotope (76)

molar mass the mass of one mole of a pure substance (76)

mole the amount of a substance that contains as many particles as there are atoms in exactly 12 g of carbon-12 (81)

GLOSSARY

● N

nuclear force a short-range proton-neutron, proton-proton, or neutron-neutron force that holds the nuclear particles together (74)

nuclide the general term for any isotope of any element (77)