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TYPES OF CHEMICAL REACTIONS

Text Reference
Section 11.2

PURPOSE

To identify and classify chemical reactions based on five general categories.

BACKGROUND

Although countless chemical reactions exist, nearly all of them can be classified into a few specific categories. In this experiment, you will learn to differentiate five general types of chemical reactions. Some of the reactions you will perform; others will be demonstrated by your teacher. From observations, you will identify the products of each reaction and determine the type of reaction that has taken place. You will consider the following reaction types: combination reactions, decomposition reactions, single-replacement reactions, double-replacement reactions, and combustion reactions. The majority of common chemical reactions can be classified as belonging to one of these categories.

MATERIALS (PER PAIR)**(Student Experiment)**

safety goggles and apron
2 small test tubes
centigram balance
dropper pipet
2 medium test tubes
test-tube rack
crucible tongs
gas burner
ring stand
utility clamp

0.1M copper(II) sulfate, CuSO_4 T
iron filings, Fe
0.1M lead(II) nitrate, $\text{Pb}(\text{NO}_3)_2$ T
0.1M potassium iodide, KI T
6M hydrochloric acid, HCl C T
magnesium turnings, Mg F
2 wood splints
book of matches
3% hydrogen peroxide, H_2O_2

(Teacher Demonstration)

electrolysis apparatus
rubber stopper, one-holed
large test tube
glass tube, 25-cm length, bent
at 90° angle in center
gas burner
ring stand

utility clamp
sodium hydrogen carbonate,
 NaHCO_3
wood splints
matches
limewater, saturated solution of
calcium oxide, CaO I C