# SCHOOLMAROOCHYDORE STATE HIGH SCHOOL

YEAR 11 – CHEMISTRY SEMESTER ONE

### PERCENTAGE YIELD

1. The reaction of ethane gas (C2H6) with chlorine gas (Cl2) produces C2H5Cl as it’s main product, along with HCl. In addition, the reaction invariably produces a variety of other minor products. Naturally the production of these other chemicals reduces the yield of the main product. Calculate the percentage yield of C2H5Cl if the reaction of 300 g of Ethane with 650 g of Chlorine produces 490 g of C2H5Cl.
2. Commercial brass, an alloy of Zn and Cu, reacts with Hydrochloric acid as follows:

Zn(s) + 2 HCl(aq) → ZnCl2(aq) + H2(g)

Cu does not react with the Hydrochloric acid. When 0.5065 g of a certain Brass alloy is reacted with excess hydrochloric acid, 0.0985 g of ZnCl2 is eventually produced.

a) What is the composition (%Zn and %Cu) by mass?

b) how could this result be checked without changing the above procedure?

1. A 0.423 g sample of impure Sodium Nitrate was heated, converting all the Sodium Nitrate to 0.2864 g of Sodium Nitrite and Oxygen gas. Determine the percent of sodium Nitrate in the original sample.
2. Using the equation: 2 H2S + SO2 → 2 H2O + 3 S

What is the percent yield if 10.5 g of Sulfur is produced when 6.4 g of H2S reacts in an excess of SO2?