

Page 19

The tape on our beaker burned. Took about 1 minute 50 seconds to dissolve. Letting off steam. Seems to heat up more when adding the iron. Solution turned from blue to grey. Iron seemed to rust. Combined to form Fe_3O_3 . Has an iron sort of smell. Precipitate settled to the bottom. Was a darker blue fluid with a red bubbling deposit on the bottom. Some filings stuck to the stirring rod and side of the beaker. Some of the tape burned off. After decanting, deposit was a wet, red powder. Decanted liquid was more of a teal color. There was a little bit of deposit that was decanted. Second decant was a more red color liquid. Definitely lost some of the precipitate. Third decant was more cloudy. Decanted liquid was a very clear, very light blue liquid with some precipitate. Final product was wet, red, some black, and powdery. After drying, it is a solid mass with a reddish-brown color. Very dry. Some iron left over. Some of the product was black.

Analysis:

Limiting Reactant	Theoretical Yield	Percent Yield
Iron	2.28g	95.2%

1. Iron is the limiting reactant. No more iron was left over, only copper.
 $(2.00\text{g Fe} / 55.85) * 63.55 = 2.28\text{g Cu}$
 $(7.00\text{g CuSO}_4 / [63.55 + 32.06 + 4 * 16.00]) * 63.55 = 2.56\text{g Cu}$
2. Iron was the limiting reactant so that there would be no iron left over with the copper. If copper(II) sulfate was the limiting reactant, there would be iron left in the copper, affecting the weight and calculation.

Revision #1

Created 2025-11-26 07:58:17 UTC by Admin

Updated 2025-11-26 07:58:17 UTC by Admin