

Chem 35: General Chemistry

Fall 2000
Professor Joel M. Goldberg

Syllabus

■ On the Web at:

www.uvm.edu/~jgoldber/courses/chem35/

■ Email Me: jgoldber@zoo.uvm.edu

- previous experience with Chemistry?
- what is your major?
- lab or exam scheduling conflicts?
- course schedule
- questions/comments

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Introductory Stuff

- Chemistry is an *experimental* science
- How is science done?

- *Observation*
- *Hypothesis*
- *EXPERIMENT*
 - Observation
 - Revise Hypothesis?
 - NEW Experiment

- Eventually: *hypothesis* -> Theory -> **LAW**

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Experiment:

- Fill three balloons with different gas mixtures:

- Balloon I: N₂ and O₂
- Balloon II: H₂ and O₂
- Balloon III: H₂ and N₂

Question: "What will happen if we touch a lit candle to the balloons? Will a **CHEMICAL REACTION** occur?"₄

Balloon I

- essentially, AIR (80% N_2 , 20% O_2)
 - O_2 : *quite reactive*
 - N_2 : *generally, pretty inert* (used as a preservative atmosphere for food, chemicals)

-**Prediction: NO REACTION**
(this is our CONTROL)

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Balloon II

- Mixture is:

ROCKET FUEL!

- *Significant* reaction:

- audible acoustic report
- flames
- screams from the dead and wounded

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Balloon III

- H_2 is highly reactive with O_2 , but not so much with N_2

Prediction: no significant reaction, unless there is some source of O_2

- **Result:**

SUBSTANTIAL explosion!

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