

Safety Readings are located in the back of your lab manual, or at this web address:
<http://avogadro.chem.iastate.edu/Safety/AppendixSafetyReadings.pdf>

**General Chemistry Lab
Safety Assignment #1
5 points**

Write your answers on a separate page in your lab notebook, and at the beginning of the lab period show it to your TA .

(1) (1 point each) Under the first definition of a hazardous chemical on the first page of the reading, other descriptive terms are used. Select three of these terms and write a short definition of each one (if you use a reference such as a dictionary, be certain to cite it). Use complete sentences and try to provide an example of each term you select.

(2) (1 point each) Select two chemicals you have used or are using in the laboratory course. For each substance, indicate how it could be accidentally taken up into your body and give your impression of the possible severity of exposure to a dose of the chemical.

**General Chemistry Lab
Safety Assignment #2
5 points**

Write your answers on a separate page in your lab notebook. At the beginning of the lab period, show it to your TA.

(1) (2 points) Give one specific example for an acute poisoning and one for a chronic poisoning that can happen in our everyday lives. In a sentence or two, describe how the substance can enter our bodies and its source(s).

(2) (3 points) Copper (II) oxide is a fine powder that can be easily inhaled if suspended as a dust in the air. The ACGIH exposure limit for workers is 0.2 mg/m^3 . Using the dimensions of your laboratory (7m x 11m x 3.5m), how many grams of copper (II) oxide would need to be dispersed to have this concentration of copper (II) oxide in the air throughout the laboratory?

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**General Chemistry Lab
Safety Assignment #3
5 points**

*Write your answers on a separate page
in your lab notebook.*

(1) (1 point each) Examine the reagent bottles for three chemicals you find on the reagent bench. Identify the chemical, reproduce the safety code, and describe in a sentence or two the safety concerns for this chemical.

(2) (2 points) Your section is assigned a room in Gilman Hall that has an NFPA sign. Go to this room and copy the NFPA sign on the door. Identify the types of hazards in this room from the sign. (Do not enter the laboratory.)

lab section	Gilman room	lab section	Gilman room
1	0213	21	2161
2	1311	22	2205
3	2272	23	2204
4	2651	24	3656
5	2801	25	3651
6	2156	26	3605
7	2161	27	3331
8	2205	28	3272
9	2204	29	0213
10	3656	30	1311
11	3651	31	2272
12	3605	32	2651
13	3331	33	2801
14	3272	34	2156
15	0213	35	2161
16	1311	36	2205
17	2272	37	2204
18	2651	38	3656
19	2801	39	3651
20	2156	40	3605

**General Chemistry Lab
Safety Assignment #4
5 points**

*Write your answers on a separate page
in your lab notebook.*

(1) (5 points) Summarize the information provided in the MSDSs for sodium chloride and nitric acid. Identify the specific information about each chemical, which is most useful to you in preparing for a safe laboratory experiment in which these chemicals would be used. You may find the MSDSs in your lab room or on the web at:

<http://avogadro.chem.iastate.edu/MSDS>

Select the sheets you are looking for from the larger list.

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**General Chemistry Lab
Safety Assignment #5
5 points**

*Write your answers on a separate page
in your lab notebook.*

(1) (5 points) Summarize the information in sections 1 through 5 of the MSDSs for ethyl alcohol (denatured) and caffeine. Focusing on the toxicological information, what are specific concerns regarding the use of each chemical? Examine section 3 to see if there are other hazards in addition to the toxicological information. Using the data given in section 11 for caffeine, approximately how many 12 oz cans of coca-cola would you need to ingest to reach the LD₅₀ value for caffeine (one 12 oz can of coke contains about 32 mg of caffeine)? You may find the MSDSs in your lab room or on the web at:
<http://avogadro.chem.iastate.edu/MSDS>

Select the sheets you are looking for from the larger list.

**General Chemistry Lab
Safety Assignment #6
5 points**

*Write your answers on a separate page
in your lab notebook.*

(1) (5 points) Summarize the information in sections 6 through 10 of the MSDSs for sodium hypochlorite solution (bleach) and sodium hydroxide solution. What conditions do you need to consider for storing these chemicals? What kind of personal protective equipment is recommended? You may find the MSDSs in your lab room or on the web at:
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**General Chemistry Lab
Safety Assignment #7
5 points**

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(1) (5 points) Summarize the information in sections 11 through 15 of the MSDSs for acetylsalicylic acid (aspirin) and sulfuric acid. Examine the hazards identification section for each chemical and identify the most significant hazard (i.e., corrosive, flammable, toxic, etc.), and the nature of the injury it could cause. Compare the first aid measures for these two chemicals noting similarities and differences. You may find the MSDSs in your lab room or on the web at:
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Select the sheets you are looking for from the larger list.

**General Chemistry Lab
Safety Assignment #8
5 points**

*Write your answers on a separate page
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(5 points) Look up and write a short paragraph about one of the following items: HAZWOPER (Hazardous Waste Operators and Emergency Response standard), the Clean Air Act, the Clean Water Act, Resource Conservation and Recovery Act, Superfund. You can find some descriptions in the references listed in Safety Reading 8. To obtain full credit, either find a second source in the library that expands on the details, or provide a news article in which this item is cited and discuss what effects the act had on the news item.