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## Workshop #2: Safety Data Sheet

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Chemicals and other hazardous materials are an integral component of the laboratory environment. A Safety Data Sheet (SDS) provides both workers and emergency personnel with the proper procedures for handling a particular substance. SDS's include information such as physical data, toxicity, health effects, first aid, reactivity, storage, disposal, protective equipment, and spill/leak procedures. SDS's vary in length from 1 to 10 pages, with most being 2 to 4 pages.

SDS's are not intended for use by the general consumer that occasionally works with a substance. Rather, SDS's are for employees who may be occupationally exposed to a hazard at work (40 hrs/week or confined spaces), employers who need to know proper storage and handling, and emergency responders.

In the U.S., the Occupational Safety and Health Administration (OSHA) requires that SDS's be available to employees for potentially harmful substances handled in the workplace under the Hazard Communication regulation. OSHA defines a hazardous chemical as any liquid, solid, or gas that could present a physical or health hazard to an employee.

OSHA requires each department such as chemistry, biology, photography, and ceramics to maintain Safety Data Sheets readily available for employee viewing. There are numerous websites that offer SDS's; some are free while most charge. When chemicals are shipped, they are accompanied by a SDS. Also note that the National Fire Protection Association (NFPA) ratings are the blue, red, yellow, and white diamond labels you see on many hazardous chemical containers.

**HEALTH HAZARD-BLUE:**

- 4 – Deadly
- 3 – Extreme Danger
- 2 – Hazardous
- 1 – Slightly Hazardous
- 0 – Normal Material

**REACTIVITY-YELLOW:**

- 4 – May Detonate
- 3 – Shock and Heat May Detonate
- 2 – Violent Chemical Change
- 1 – Unstable if Heated
- 0 – Stable

**FIRE HAZARD (flash points)-RED:**

- 4 – Below 73°F
- 3 – Below 100°F
- 2 – Above 100°F not Exceeding 200°F
- 1 – Above 200°F
- 0 – Will Not Burn

**SPECIFIC HAZARD-WHITE:**

- OX – Oxidizer
- ACID – Acid
- ALK – Alkali (Base)
- COR – Corrosive
- ~~W~~ – Use NO Water

Name: \_\_\_\_\_

Section: \_\_\_\_\_

Use the SDS provided in lab to answer the following questions:

1. List other names that are synonyms of sodium hydroxide and its formula.
2. What is its melting point?
3. What is done in case of contact with eyes?
4. How should a small spill be handled?
5. What procedure should be done if the substance is swallowed?
6. What are the NFPA Ratings for Health? Fire? Reactivity? Specific Hazard?
7. List three chemicals that should not be stored with NaOH.
8. How should solid NaOH be properly stored?

Name: \_\_\_\_\_

Section: \_\_\_\_\_

Your instructor will assign you a specific chemical compound along with SDS, and you should fill-in the table below with as much information as possible (note: several areas will remain blank) using the various resources listed below:

Name of Substance \_\_\_\_\_

Chemical Formula \_\_\_\_\_

	Reagent Bottle	SDS Sheet	Merck Index	CRC or Lange's
Other Names				
Formula Weight				
State of matter				
Melting point				
Boiling point				
Density				
Percent Composition				
Soluble solvents				
Manufacturer				
Chemical Properties				
Toxicity				

Contrast the differences between the four reference materials used above, and be specific.