HAZARD COMMUNICATION (Chemical Safety)

GENERAL

Chemicals play a large part of everyday operations for OPF staff members. Whether you are the person applying the chemical or an employee in the area of a chemical being used it is important to remember that these chemicals can have adverse health effects on the human body. Chemicals can also have damaging physical effects as well.

HEALTH HAZARDS AND PHYSICAL HAZARDS

Chemicals pose various health hazards to workers who use them. Some of the health hazards associated with chemical use are cancer and other diseases, as well as irritation of the skin, eyes and/or respiratory system. Chemicals also pose various physical hazards. Some of the physical hazards associated with chemical use are fires, explosions, and dangerous chemical reactions. As a user of chemicals in the workplace it is your responsibility to be aware of these hazards. Do not put yourself or others in danger.

ROUTES OF ENTRY- How chemicals enter your body

- **Inhalation** - occurs when a worker breathes in or inhales dusts, mists, or vapors of a chemical
- **Ingestion** - occurs when a worker swallows a chemical directly by eating or drinking the chemical. It can also occur indirectly when a worker touches a chemical with the hands and then uses those same contaminated hands to eat, smoke or conduct any other hand to mouth activity.
- **Injection** - occurs when a contaminated sharp object penetrates the skin and causes exposure
- **Absorption** - occurs when dusts, mists and vapors settle on and enter through the eyes, nose, or skin.

EFFECTS OF CHEMICALS

- **Acute** effects - Short term. Some chemicals will cause damage to the human body as soon as contact occurs.
- **Chronic** effects - Long term exposure. Some chemicals take time to cause damage to the human body.

The acute effects of a chemical would be like a strong acid coming into contact with your skin. The corrosive aspects of the acid would immediately start to burn or eat away at your skin causing burns. The chronic effect of chemicals can be explained by the following smoking tobacco scenario. If you were to smoke one cigarette there would probably be little health risks involved versus smoking 40 cigarettes a day for the next
40 years in which you would increase your chances of developing lung cancer. Just because a chemical does not have any immediate or acute effect does not mean that it is not affecting your body in a negative way. Some chemicals take time to cause harm.

PROTECT YOURSELF

Conduct a Chemical Inventory
It is important that each shop or department conduct a chemical inventory to obtain an accurate inventory of chemicals used on site or in the field.

Read the Safety Data Sheet (SDS)-
Always ask for and review the SDS of a chemical before use. The SDS will contain valuable information that will aid in the proper handling and storage of the chemical as well as first aid measures should an accidental exposure occur. SDS’s follow a strict 16 section format with which each user should be familiar. The following is a brief description of the SDS format:

1. Identification
2. Hazards
3. Ingredient info
4. First Aid measures
5. Fire Fighting measures
6. Accidental Release measures
7. Handling and Storage
8. Exposure Controls
9. Physical & chemical properties
10. Stability & Reactivity
11. Toxicological info
12. Ecological info
13. Disposal Considerations
14. Transport info
15. Regulatory info
16. Other info, date of preparation

Read the Label-
All chemicals should be labeled. If a container does not have a label on it and you are unsure of the contents do not use the chemical and bring it to your supervisor’s attention. At a minimum chemical will come with the following information:

1. Product Identifier—should match the product identifier on the SDS
2. Signal Word—Either “Danger”-Severe hazard or “Warning”-less severe hazard
3. Hazard Statement—A phrase that describes the hazard(s) of the chemical
4. Precautionary Statement—Describes measures used to minimize or prevent adverse effects resulting from exposure
5. Pictograms—Graphical images used to convey the hazards visually
6. Supplier Information- Name, address, and telephone number of the manufacturer or supplier

Chemical Label Example

Secondary chemical labels-
Sometimes it may be necessary for you to transfer a chemical from a large primary container to a smaller secondary container for use. Please label all secondary containers with at least the following information
- Chemical name (i.e. Bleach)
- The hazard of the chemical (i.e. Corrosive)

Get the required training-
Workers should be trained and educated in the hazards of chemical use. At a minimum, workers should be trained on reading chemical labels and SDS’s, the health and physical hazards of chemicals, first aid measures and protective measures that should be taken when working with chemicals.

Use Personal Protective Equipment (PPE)-
Workers should always take steps to limit the exposure to harmful chemicals. Management will take steps to eliminate hazards when possible. If hazards are not completely eliminated the worker shall take steps to protect themselves with PPE. The worker shall consult the SDS to get basic requirements for PPE. If any questions remain on the type of PPE required the worker must consult with their supervisor. Remember to always wash your hands after handling chemicals even though gloves were being used.
Important: Never mix chemicals together. For example never mix Bleach with toilet bowl cleaners, vinegar, or ammonia. Do not use two drain cleaners together or certain disinfectants with detergents

CHEMICAL STORAGE
Chemicals must be physically segregated according to hazard class to prevent adverse chemical reactions. The same segregation rules apply to all chemicals, regardless of their physical state (solid, liquid, or gas). Proper chemical segregation can be accomplished by designating storage cabinets, tubs, bins, or specific areas for a specific hazard class. Hazardous classes include:

- Flammable: fuel, welding gases, solvents, paint thinner, acetone, spray aerosols
- Combustible: flux, paint, wood dust, stain, cutting fluid, some adhesives, oil, diesel fuel
- Oxidizers: oxygen, hydrogen peroxide, bleach, certain cleaners
- Poisons: mercury, lead, alloys containing cadmium or beryllium, chlorinated solvents or degreasers, solders, pesticides
- Acids: etching solutions, battery acid, drain cleaner
- Bases: caustic or alkaline materials, ammonia based cleaners, drain cleaners, and some chemical strippers
- Reactive chemicals: polymer kits, epoxy resin

Chemicals must be stored in secondary containment, such as plastic tubs, and cannot be scattered around the shop. Ensure that these materials are properly restrained when they are stored in cabinets or on shelving. Avoid storing chemicals near sources of heat or combustion.

Chemical containers must be compatible with the chemicals they are holding. For example, corrosive chemicals, such as strong acids and bases, will corrode metal containers. (If space is limited, incompatible chemicals can be placed in separate secondary containments in the same cabinet.)

No more than 10 gallons of flammable chemicals may be stored outside of a flammable storage cabinet at any time. Keep oily rags in a separate, flash proof metal container.

When chemicals are not in use, they must be tightly sealed. If containers are damaged, leaking, or corroded, the contents must be transferred to a new properly labeled container or disposed of as hazardous waste.
For a full version of the Hazard Communication Program and Hazardous Waste Disposal Procedures please refer to the EHSO website or consult with EHSO by phone at 808-956-8660.