Safety Talk – Chemical Safety & PPE

THE UNIVERSITY OF CHICAGO

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All chemicals used at work, even "household" chemicals, should be considered potentially hazardous.

Always understand the hazards of the chemical. Use the all chemicals such that you have zero exposure.

Chemicals can enter the body through various paths:

- **Lungs:** inhaling dusts, fumes, vapors, or gases;
- **Skin:** chemicals coming in contact with skin; and
- **Digestive system:** ingesting chemicals;

Effects of chemical exposure:

- **Acute:** immediate outcomes upon exposure; and
- **Chronic:** outcome from repeated exposure over longer duration.
- **Don't assume you aren't being exposed just because you don't experience immediate health outcomes:** it may take days, months, years, to see chronic effects.

How to use chemicals safely:

- **Material Safety Data Sheet (MSDS):** always read these first to learn about how to use the chemical safely and the hazards of the chemical;
- **Substitution:** use a less hazardous chemical to do the job;
- **Ventilation:** use ventilation or work in a well-vented area when using or generating inhalation hazards (welding, spray painting, etc.);
- **Storage:** segregate incompatible chemicals and protect flammable chemicals from ignition sources;
- **Hygiene:** wash your hands after use and prevent chemicals from getting on your clothes;
- **Labeling and signage:** always label containers with their content and hazards (e.g. NFPA Diamond);
- **Work practices:** always use chemicals in such a way that minimizes exposure.

Selecting the proper PPE when working with chemicals:

Gloves

- Rubber, chemical-resistant material;
- Nitrile offer the widest range of compatibilities, but…
- ALWAYS consult with the MSDS to determine which rubber glove to wear;

Eye Protection

- Safety glasses – when splashing and vapors are not a concern;
- Goggles – when splashing is not a concern, but vapors are;
- Face shields – when splashing is a concern;
- Use face shields with goggles when splashing and vapors are a concern.

Respirators

- Only required where airborne chemical concentrations exceed regulatory limits;
- Each type of respirator only protects against specific hazard: solvents, dusts, gases, etc.;
- There are additional training and medical examination requirements to respirators.

Body Protection

- Use to prevent contact to skin or clothes;
- Use rubber, chemical-resistant for liquid chemicals;
- Can use non-chemical resistant (or simple change of clothes) for dusts;
- Protect clothes to prevent "carrying home" chemicals from the job;
- Remove or change before leaving the work area.

Tips for using PPE:

- **Store PPE where they won't be exposed to chemicals.**
- **Never reuse single-use PPE (dust masks, disposable gloves, etc.).**
- **Discard reusable PPE when they show even the slightest sign of degradation.**
- **Grossly contaminated PPE should also be discarded.**
- **Inspect PPE before using to find holes, degradation, or wear.**
- **PPE is the last line of define: should only be used when other means of protection are not available.**

For further information:

Please review the Personal Protective Equipment and Hazard Communications Policies on the Environmental Health and Safety website.

Personal Protective Equipment and Hazard Communications training is required for all Facilities Services employees.