



Personal Protective Equipment: Hand Protection

Employees' hands in the workplace are vulnerable to cuts, burns, bruises, electrical shock, and chemical exposure. These hazards should be controlled through a simple hierarchy of health and safety controls. The most effective control is to remove the hazard altogether. If this is not possible, the hazard should be controlled through an engineering approach or through administrative means. If these controls do not eliminate the potential hazard, personal protective equipment such as gloves should be worn. The protective gloves should be suited for the operation and able to withstand the specific hazards of the task.

One type of glove will not provide full protection against all hand-safety hazards and may not be suitable for all workplace situations. For example, certain chemicals may require specialized gloves. Gloves used to protect a maintenance employee's hands from cleaning solutions may differ drastically from a glove used to protect a laboratory employee from an acid used in the lab. It is important to select the correct glove for each application.

Selection of gloves should be based on the tasks to be performed, conditions present, duration of use, and the hazards and potential hazards identified. The selected gloves must be able to endure all chemical exposures and physical stresses found in the task.

The following is a listing of types and applications of gloves in the workplace:

Rubber, plastic or synthetic rubber gloves should be used for tasks involving oils, greases, solvents and other chemicals. This type of glove can be applied to cleaning tasks.

Leather gloves resist sparks, moderate heat, and cuts and abrasions. This type of glove can be applied to welding activities.

Cotton and fabric gloves protect against dirt, chafing and abrasions. These gloves may not be strong enough to endure rough, sharp, or heavy materials.

Coated fabric gloves provide protection for moderate concentrated chemicals. This type of glove can be used in laboratory tasks provided they offer protection for the specific chemical hazard.

Aluminized gloves provide reflective and insulating protection. These gloves can be used in welding, furnace, and foundry work.

Kevlar gloves provide protection against heat and cold. They are cut- and abrasion-resistant. These gloves can be used in a wide variety of applications in industry.

Chemical/liquid-resistant gloves prevent chemicals from being absorbed into employees' skin. Warnings on chemical containers and information found on material safety data sheets help determine the type of glove that should be worn for the particular chemical. For example:

- **Butyl rubber gloves** protect from nitric acid, sulfuric acid, hydrofluoric acid, and peroxide.
- **Natural latex/rubber gloves** protect from water solutions or acids, alkalis, salts and ketones.
- **Neoprene gloves** protect from hydraulic fluids, gasoline, alcohols, and organic acids.
- **Nitrile rubber gloves** protect chlorinated solvents.



When purchasing gloves for employees:

- The work activity should be studied to determine the degree of dexterity, duration, frequency, and the degree of exposure to the hazard.
- Purchase a variety of glove sizes to ensure proper fit.
- Gloves should be replaced periodically, depending on the frequency of use and permeability to the substances handled.

- Robert Hart
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