



TEAMSTERS

Safety & Health FACTS

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SOLVENTS

Solvents are chemicals that dissolve substances such as grease, oil, resins, and paints. They are the most common group of industrial chemicals used.

Who Works With Solvents?

Teamsters who work with solvents are diesel mechanics, printers, building service personnel, maintenance personnel, factory workers, and carpenters, to name a few. Solvents are often used to clean machines and their parts. They are also used in strippers, paint, and paint thinners.

Health Effects:

Solvents can enter the body in two ways. The typical route of entry is through inhalation of the solvent vapors, affecting the respiratory system and passing to other body parts. They can also splash onto the skin or into the eyes and then pass into the body.

Solvents may have the following health effects.

- ♦ **Cancer.** Some solvents, such as benzene and coal tar naphtha, are known to cause cancer. Several others, including trichloroethylene and methylene chloride, are suspected of causing cancer.
- ♦ **Damage to body organs.** Some solvents can damage the liver, heart or lungs if exposure continues over many years.
- ♦ **Skin diseases.** Solvents dissolve the skin's protective coatings and cause the skin to become red and itchy, thickened, hardened, or white and flaky.

- ♦ **Brain and nervous system effects.** Many solvents cause giddiness, loss of alertness and coordination, and lightheadedness. A worker suffering from overexposure to solvents may seem to be drunk or "high."

NOTE: if workers develop these symptoms, they should be immediately moved to an area with fresh air and a doctor should be called. Repeated overexposure to solvents may permanently damage the nervous system and/or the brain.

- ♦ **Eye, nose, throat, and lung irritation.** In extreme causes, such irritation may lead to chemical pneumonia. Over many years, solvents may permanently damage the breathing system.

How to Reduce Exposure to Solvents:

Because solvents are highly toxic, reducing exposure is important. Following are ways workers can be protected from solvents:

Substitutes. Sometimes a dangerous solvent, such as benzene, can be replaced with a less dangerous material. One of the most effective means of controlling solvents is to use the least hazardous solvent. By simply substituting for a less toxic solvent, one can reduce and sometimes eliminate a hazard. The fact that a certain solvent has been specified does not mean it is the only one or even the best one for a particular use. Usually the solvent specified is the most familiar. The best all around solvent is water. It is nontoxic, nonflammable and with the proper additives it has many uses.

Ventilation. Exhaust hoods that pull vapors out of the work place can be installed over operations involving solvents. A fan alone will not always properly remove these vapors. The first and most effective way to prevent inhalation of solvents is to keep them out of the breathing zone. This can be accomplished with closed systems and local exhaust ventilation. The second way to reduce inhalation is by using local ventilation systems that remove the vapors at their point of origin. Enclosing the process where the solvent is used generally the most satisfactory means of control. Even storage areas require adequate general ventilation to prevent accumulation and build up of flammable or toxic concentrations.

Protective equipment. When ventilation is not adequate, employers should provide respirators. Respiratory protection should be used only when appropriate and as part of a comprehensive respiratory program. *(Unless respirators are used correctly and properly cared for, a respirator may present a greater danger to an employee than not having any protection at all.)* Too often such equipment provides a false sense of security and the wearer becomes careless and may be exposed to high levels.

To protect the skin, employers should provide workers with gloves and arm protectors. Special gloves impervious to the particular solvent involved are

necessary. If the solvent is likely to splash, the employer should provide goggles, face shields, or other face and eye protection. Protective clothing, gloves, aprons, and face shields, made of the proper material should be selected based on the how permeable the material is to the solvent in use.

Housekeeping. Solvents should not be used for washing hands. Instead employers should give workers soap and water or other safe materials.