Warning Welding May be Hazardous to your Health Meeting Kit



WHAT□S AT STAKE

Welding smoke is a complex mixture of very small, condensed solids (fumes) and gases. The base and filler metals, fluxes, coatings, and shielding gases all contribute. Even chemical changes to the surrounding atmosphere from the intense radiation and heat can add to the mix.

WHAT□S THE DANGER

HAZARDOUS HEALTH EFFECTS OF WELDING

The effects of welding smoke on a person will depend on the particular components of the smoke and how much of it the welder breathes. Some effects maybe, short term and acute. Long-term or chronic effects may not become apparent until after years of exposure.

Metal fume fever is the most common acute respiratory illness experienced by welders. It is a flu-like illness that lasts 24-to-48 hours. It is typically caused by exposure to zinc fumes, but copper, magnesium, and cadmium are also known to cause metal fume fever. Acute exposures to high concentrations of cadmium can be more serious though, producing severe lung irritation, pulmonary edema, or even death.

Long-term exposure to welding fumes may pose the risk of serious respiratory, nervous system, and reproductive effects, but more research is needed. Some metals we know are especially hazardous. These metals include lead, cadmium, beryllium, and mercury. But even welders who don□t work with these toxic materials may be at risk.

Carbon steel, which includes mild steel, is the most common material welded. The manganese in the steel and the filler metal sometimes results in overexposure to manganese. Chronic manganese poisoning can cause Parkinson□s-like disease and other neurological effects.

Stainless steel, high alloy steels, and nickel alloys expose workers to chromium and/or nickel fumes. Both nickel and hexavalent chromium are classified as human

carcinogens.

Hazardous gases can also be produced during welding. Depending on the specifics of your process, these could include ozone, nitrogen dioxide, carbon monoxide, and fluorine compounds. These gases may cause both short and long-term effects.

FIRE HAZARD THE GREATEST HAZARD FOR A WELDER

The greatest hazard that welders must deal with is fire. Hot work, which includes welding, requires that all combustible materials be removed from the welding environment prior to work beginning.

HOW TO PROTECT YOURSELF

BEST WELDING SAFETY PRACTICES

Conduct in a designated safe location. A welder should observe their surroundings or working environment prior to welding. It is best to observe whether any flammable equipment or materials are present within the vicinity of the welding area. The considered safe distance from the welding area is 35-feet (10 meters). If the object to be welded or cut cannot readily be moved, a work around OSHA recommended is to transfer movable fire hazards away from the welding area.

Protect yourself from fire hazards. If all the fire hazards cannot be removed, then appropriate safeguards should be in place to protect the immovable fire hazards and to confine heat, sparks, and hot slags that are produced by welding.

Consider the risks. There are various risks associated with welding, most of which pose health hazards (e.,g exposure to fumes and UV radiation). Welding risks may vary depending on the area where it will be done, so it is recommended that a risk assessment be carried out prior to work.

Maintain your equipment. A welder or helper working on platforms, scaffolds, or runways shall be protected against falling by the use of railings, safety belts, life lines, or some other equally effective safeguards. Welders shall place welding cable and other equipment so that it is clear of passageways, ladders, and stairways.

Protect yourself with the correct PPE. Welders should always wear the appropriate PPE.

- Long-sleeved shirts
- Long pants with no cuffs
- Welding helmet or goggles
- Respirators
- Ear muffs/plugs
- Boots & gloves

Check for ventilation. Proper ventilation prevents welding incidents and protect employees. Ventilation is mainly used for removing air contaminants from a worker's work area, preventing accumulation of flammable or combustible gases or vapors, and preventing oxygen rich or deficient atmospheres.

Protect yourself from fumes and gases. Local exhaust or general ventilating

systems shall be provided and arranged to keep the amount of toxic fumes, gases, or dusts below the maximum allowable concentration. If necessary, welders should wear a respirator to protect themselves from breathing in harmful substances.

Protect other workers. After welding operations are completed, the welder shall mark the hot metal or provide some other means of warning other workers.

Read warning labels, relevant documents and keep training. Ensure that each welder has access to labels on containers of such materials and safety data sheets and is trained when new equipment and techniques are adopted.

Enforce Safety Procedures. Hold yourself and those around you accountable when it comes to safety.

TRAINING, COMMUNICATION INFORMATION

Workers have a legal responsibility to work in a way ensure their health and safety.

- Work in line with the training and instruction provided them.
- Cooperate with employer in any matters relating to health and safety.
- Properly use any control measures enforced as a result of the workplace risk assessment.

SAFETY RECOMMENTATION FOR WELDERS

- Encourage welders to change their working position from time to time.
- Maintain a clean, well-organized working area to minimize injuries and work-related dangers.
- Facilitate welders to attending work safety training seminars.
- Provide medical checks-up for welders.
- Welders need shower and change into new clothes before they head home and interact with other people.

FINAL WORD

A safe welding area is designed to protect the surrounding environment and the worker from fire and dangerous heat and fumes. With this in mind, all flammable materials should be removed from the area, if possible.