



## Fumes, Gasses, and Welding Operations

Welding operations produce fumes and gases that, if inhaled, can present serious health hazards. The hazards vary depending on the type of welding you're doing, the type of welding rod you're using, the metal you're welding, any paints and coatings on the metal, and the ventilation in the work area. In other words, welding fumes and gases can contain hazardous particles from 1) the materials being welded, 2) the finishes or coatings that have been applied to the metal, and 3) the gas or welding rod that is used in the process.

Some of the health problems that can be caused by toxic fumes and gases include sinus problems; irritation of the eyes, ears, nose, throat, and lungs; asthma; "fume fever" which causes flu-like symptoms along with a dry throat and hoarseness; lead poisoning; kidney and nervous system damage; fluid in the lungs; cancer; and Parkinson's disease.

As with any hazardous exposure, the best solution is to prevent it in the first place. Ventilation can significantly reduce your exposure to hazardous fumes and gases. Having proper ventilation can be as easy as using outdoor prevailing winds. If you cannot work outside, use fans, air movers, or a local exhaust system. Any combination of these solutions can help keep fumes and gases away from your breathing zone. If you're not sure if there is proper ventilation in your work area, air samples should be taken to determine if additional ventilation is necessary or if you will need to wear a respirator. If you have any questions talk to your supervisor.

You can protect yourself from the dangers of toxic fumes and gases by following safe work practices anytime you are involved in welding operations.

- Make it a habit to always review the safety data sheets (SDSs) to identify proper ventilation requirements; respiratory, eye, and face protection; and other personal protective equipment to conduct the welding process safely.
- Perform a hazard assessment or job safety analysis (JSA) before you begin the task.
- Remove all paint and solvents before welding or torch cutting. Be sure all residues are removed.
- Use welding methods and welding rods that produce minimal dangerous fumes.
- Do not consume food or beverages in areas where fumes or gases are present.
- Do not overheat fluxes during brazing operations.



No matter what type of welding you do, it can become deadly in confined spaces. If you're wearing a filter-type respirator but you don't have enough ventilation, toxic gases and fumes can build up, leaving you with little or no oxygen to breathe. Don't wear just any respirator, wear the right respirator.

#### **SAFETY REMINDER**

**Dust and particles that you bring home on your clothes can make your family sick. If at all possible, change your clothes before going home after welding.**