



## KCA TOOL BOX TALK: Controlling Hazardous Fume and Gases during Welding

Health effects of breathing welding fume: (1) Acute exposure to welding fume and gases can result in eye, nose and throat irritation, dizziness and nausea. (2) Prolonged exposure to welding fume may cause lung damage and various types of cancer, including lung, larynx and urinary tract. (3) Health effects from certain fumes may include metal fume fever, stomach ulcers, kidney damage and nervous system damage. (4) Prolonged exposure to manganese fume can cause Parkinson's-like symptoms. (5) Gases such as helium, argon, and carbon dioxide displace oxygen in the air and can lead to suffocation, particularly when welding in confined or enclosed spaces. Carbon monoxide gas can form, posing a serious asphyxiation hazard.

Welders should understand the hazards of the materials they are working with. OSHA's Hazard Communication standard requires employers to provide information and training for workers on hazardous materials in the workplace. Below are suggestions for protecting welders and coworkers from exposures to hazardous substances in welding fume.

### Tips for Reducing Exposure:

- Welding surfaces should be cleaned of any coating that could potentially create toxic fumes, such as solvent residue and paint.
- Workers should position themselves to avoid breathing welding fume and gases. And workers should stay upwind when welding in open or outdoor environments. *Welding outdoors or in open work spaces does not guarantee adequate ventilation.* General or forced ventilation reduces fume and gas levels in indoor work areas. In work areas without ventilation and exhaust systems, welders should use natural drafts along with proper positioning to keep fume and gases away from themselves and other workers.
- Local exhaust ventilation systems can be used to remove fume and gases from the welder's breathing zone. Keep fume hoods, fume extractor guns and vacuum nozzles close to the plume source to remove the maximum amount of fume and gases. Portable or flexible exhaust systems can be positioned so that fume and gases are drawn away from the welder. Keep exhaust ports away from other workers!
- Consider substituting a lower fume-generating or less toxic welding type or consumable.
- Do not weld in confined spaces without ventilation. Refer to applicable OSHA regulations.
- Respiratory protection may be required if work practices and ventilation do not reduce exposures to safe levels.

### Signatures

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_
11. \_\_\_\_\_
12. \_\_\_\_\_
13. \_\_\_\_\_
14. \_\_\_\_\_
15. \_\_\_\_\_
16. \_\_\_\_\_
17. \_\_\_\_\_
18. \_\_\_\_\_

[www.KeystoneContractors.com](http://www.KeystoneContractors.com)

***Teamwork Improves Safety!***

Keystone Contractors Association [Jon@KeystoneContractors.com](mailto:Jon@KeystoneContractors.com) 717-731-6272