

TOOLBOX TALK

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What's in Welding Fume?

Welding fumes are a mixture of metallic oxides, silicates, and fluorides. Fumes are formed when a metal is heated above its boiling point and its vapors condense into very fine particles (solid particulates). These very fine particles are so small that they go deep into the lungs and travel through the bloodstream to other organs. Welding fumes generally contain particles from the electrode and the material being welded, including paint or any other coating on the metal.



Fume extractor

Prolonged exposure to welding fume may cause:

- ◆ Lung damage
- ◆ Various types of cancer, including lung, larynx, liver, and urinary tract

Health effects from fumes may include:

- ◆ Metal fume fever
- ◆ Stomach ulcers
- ◆ Kidney damage
- ◆ Nervous system damage

Prolonged exposure to manganese fume can cause Parkinson's-like symptoms. Exposure to fluorides may result in bone and joint problems. Chronic effects also include excess fluid in the lungs.

Welding outdoors or in open work spaces does not guarantee adequate ventilation. **OSHA recommends that local exhaust ventilation systems should 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 should be positioned so that fumes and gases are drawn away from the welder. Keep exhaust ports away from other workers.