

WELDING FUMES

WHAT YOU NEED TO KNOW

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What are welding fumes?

Welding fumes are toxic metal fumes produced during welding operations. They usually have different compositions, depending on the metals that are used for welding, and for this reason they contain several contaminants.



Which fumes and gases are produced during welding?

Fumes:

Among others:

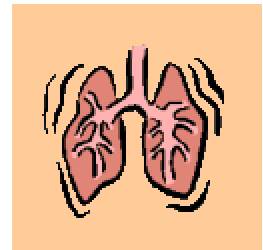
- Aluminum
- Beryllium
- Cadmium Oxides
- Chromium
- Copper
- Fluorides
- Iron Oxide
- Lead
- Manganese
- Molybdenum
- Nickel
- Vanadium
- Zinc Oxides

Gases:

- Carbon Monoxide
- Hydrogen Fluoride
- Nitrogen Oxide
- Ozone

How can welding fumes and gases enter my body?

Welding fumes enter our body through the lungs, that is, we inhale them together with the air we breathe.



How can welding fumes affect your health?

Exposure to different types of welding fumes produce different health effects. If over the years you breathe in gases, fumes, and vapors in large quantities, your health will suffer.

Some short-term health effects are:

- irritation of the eyes, nose, and chest
- coughing
- shortness of breath



- bronchitis
- fluid in the lungs (edema)
- inflammation of the lungs (pneumonitis)
- loss of appetite
- cramps
- nausea / vomiting

Some long-term health effects are:

- chronic lung problems (bronchitis, pneumonia, asthma, emphysema, silicosis, siderosis)
- lung cancer
- cancer of the larynx
- cancer of the urinary tract

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How can welding fumes affect your health? Continued...



Other health problems that may be related to welding fumes are:

- skin diseases
- hearing loss
- gastritis, ulcers of the stomach
- kidney damage
- heart disease

Smoking puts you at greater risk!



Individual toxic fumes can cause the following health problems:

- chromium can cause breathing difficulty, sinus problems, “holes” between the nostrils, and cancer;
- manganese can cause Parkinson’s disease, which attacks the nerves and muscles;
- cadmium can cause kidney problems and cancer.

How can the employer protect you?

By providing:



- engineering controls
- safe work practices
- air monitoring
- appropriate ventilation that includes both intake and exhaust fans, in order to remove toxic fumes and gases at their source
- less hazardous materials, when possible (for example, asbestos-free gloves and electrodes)
- warning labels for materials that contain cancer-causing agents
- signs that warn workers of exposure hazards
- training programs to all welders on the safe use of the equipment, safe work practices and emergency procedures
- personal protective equipment (PPE)
- respirators specific to the hazard. Respirators must meet the OSHA’s Respiratory Protection Standard. Workers must be trained on how to use them properly and must pass a medical exam to make sure that they are physically able to wear a respirator
- medical examinations to all workers exposed to welding processes, at least once a year

Is there an OSHA standard for welding fumes?

Federal OSHA Standard 29CFR1910.252 covers specific safety requirement for welding operations.

For more information contact:



www.osha.gov

Occupational Safety & Health Administration (OSHA)
200 Constitution Ave., NW
Washington, DC 20210
1-800-321 OSHA

<http://www.osha.gov/SLTC/healthguidelines/weldingfumes/recognition.html>