
What is MFHAP and the NESHAPS Rule? How Can I Meet the New Standards?

The Environmental Protection Agency (EPA) has issued new requirements to reduce air pollution of compounds of metals such as cadmium, chromium, lead, manganese or nickel from nine metal fabrication and finishing source categories.

Through a new EPA Metal Fabrication Hazardous Air Pollutants (MFHAP) and National Emissions Standard for Hazardous Air Pollutants (NESHAP) regulation, existing sources must be in compliance with the regulation before **July 25, 2011**. New sources must be in compliance when they begin to operate.

Below are a few vocabulary words and tips to help you understand what welders must do to comply with the new rule.

- Metal Fabrication Hazardous Air Pollutants (MFHAP) means any compound of the following metals: cadmium, chromium, lead, manganese, or nickel, or any of these metals in the elemental form, with the exception of lead. This regulation applies to companies in certain industries, including welding, that use materials containing MFHAP.
- The National Emissions Standard for Hazardous Air Pollutants (NESHAP) Rule is a standard set by the U.S. EPA for any air pollutant not regulated by existing rules that may cause an increase in deaths or serious illnesses. The standard for a particular category requires the maximum degree of emission reduction that the EPA determines to be achievable.

Nine affected source areas include:

- Electrical and Electronic Equipment Finishing Operations
- Fabricated Metal Products
- Fabricated Plate Work (Boiler Shops)
- Fabricated Structural Metal Manufacturing
- Heating Equipment (except electric)
- Industrial Equipment and Equipment Finishing Operations
- Iron and Steel Forging
- Primary Metal Products Manufacturing
- Valves and Pipe Fittings

But how does all of this apply to me and what do I have to do?

There are two scenarios

- If your facility uses less than 2,000 pounds per year of welding rod that contains MFHAP, you must document your purchasing and are only subject to providing additional company information.
- If your facility uses 2,000 pounds or more per year of welding rod that contains one or more MFHAP, you must demonstrate that management practices or fume control measures are being implemented by performing visual inspections (see items 3, 4, 5, 6 and 7 below).

1. Proper operation of equipment

You must operate all equipment, capture and control devices associated with welding operations according to manufacturer's instructions, including maintenance records. You must demonstrate compliance with this requirement by maintaining a record of the manufacturer's specifications for the capture and control devices.

2. Welding management plan

You must implement one or more of the management skills specified below to minimize MFHAP emissions while maintaining good weld quality.

- i. Use welding processes with reduced fume generation (GMAW or MIG);
- ii. Use process variations (such as pulsed current GMAW) to reduce fume generation rates;
- iii. Use welding filler metals or shielding gases capable of reducing fume generation;
- iv. Optimize welding process variables (e.g., voltage, amperage, welding angle, etc.) to reduce the amount of welding fume generated; and
- v. Use a welding fume capture and control system.

3. Tier 1 compliance requirements for welding

You must perform visual determinations, via EPA method 22, of welding fugitive emissions at the primary vent, stack, exit or opening from the building containing welding operations. Keep a record of all visual determinations along with any correction action plan taken.

4. Requirements upon initial detection of visible emissions from welding

If visual fugitive emissions are detected during any visual determination, you must comply with the following:

- i. Inspect the weld fume sources and evaluate the proper operation and effectiveness of management practices or fume control measures. Then perform follow-up inspections for visible fugitive emissions.
- ii. Report all instances where visible emissions are detected along with corrective action taken and the results of follow-up as a part of your annual certification and compliance report.

5. Tier 2 requirements upon subsequent detection of visible emissions

If visible fugitive emissions are detected more than once during any consecutive 12 month period you must comply with the following:

- i. Within 24 hours of detection conduct a visual determination of emissions opacity, via EPA Method 9 at the primary air vent or opening of the building containing the welding operations.
- ii. In lieu of the requirement to perform visual determinations of fugitive emissions with EPA Method 22, you must perform visual determinations of opacity using EPA Method 9 at the primary air vent or opening of the building containing the welding operations.
- iii. You must keep record of each visual determination of emissions opacity performed along with any subsequent corrective action taken.
- iv. Always report the results of all visual determinations of emissions opacity performed along with any subsequent corrective action taken, and submit with your annual certification compliance report.

6. Requirements for opacities less than or equal to 20 percent but greater than zero

For each visual determination of emissions opacity performed for which the average of the six minute average opacities recorded is 20 percent or less but greater than zero, you must perform corrective actions. This includes inspection of all welding fume sources and evaluation of all management practices or fume control measures.

7. Tier 3 requirements for opacities exceeding 20 percent

For each visual determination of emissions opacity performed for which the average of six minute average opacities recorded exceeds 20 percent, you must comply with the following requirements.

- i. Submit a report of exceedance of 20 percent opacity along with your annual certification compliance report.
- ii. Prepare and implement a Site-Specific Welding Emissions Plan within 30 days (if you have done so already submit a revised plan).
- v. During the plan preparation continue the visual determinations of emissions opacity, beginning on a daily schedule using EPA Method 9, at the primary air vent or opening of the building containing the welding operations.
- iii. Maintain records of daily visual determinations of emissions opacity during the preparation of your plan.
- iv. Include these records in your annual certification and compliance report.

8. Site-specific welding emissions management plan

The plan must comply with the following requirements:

- i. Site-Specific Welding Emissions Plan must contain the following:
 - a. Company name and address
 - b. List and description of all welding operations that currently comprise the welding affected source
 - c. Description of all management practices and/or fume control methods in place at the time of the opacity exceedance
 - d. List and description of all management practices and/or fume control methods currently employed for the welding affected source
 - e. Description of additional management practices and/or fume control implemented and the projected date of implementation
 - f. Any revisions to the plan must contain copies of all previous entries
- ii. The Site-Specific Welding Emissions Plan must be updated annually to contain current information, and submitted with your annual certification and compliance report.
- iii. You must maintain a copy of the current plan in your records in a readily accessible location for inspector review.

Additional Resources:

EPA

www.epa.gov

EPA Method 9

www.epa.gov/ttn/emc/methods/method9.html

EPA Method 22

www.epa.gov/ttn/emc/methods/method22.html

Lincoln Electric Web Site – Arc Welding Safety

www.lincolnelectric.com/community/safety

Lincoln Electric Web Site – Weld Fume Control Solutions

www.lincolnelectric.com/weld-fume-control

The above summary of governmental regulations is provided for informational purposes only. Consult with legal counsel in order to determine which regulations apply to your operations and what must be done to comply with those regulations.

The operation of welding fume control equipment is affected by various factors including proper use and positioning of the equipment, maintenance of the equipment and the specific welding procedure and application involved. Worker exposure level should be checked upon installation and periodically thereafter to be certain it is within applicable OSHA permissible exposure limit (PEL) and American Conference of Industrial Hygienists (ACGIH) threshold limit value (TLV) limits.

Click here [here](#) to view EPA MFAP - NESHAPS rule literature.

The Lincoln Electric Company, headquartered in Cleveland, Ohio, is the world leader in the design, development and manufacture of arc welding products, robotic arc welding systems, fume extraction equipment and plasma and oxyfuel cutting equipment. The company holds a leading global position in the brazing and soldering alloys market.