



*If you own or operate an aerospace manufacturing and/or repair facility, the Clean Air Act amendments of 1990 have targeted your business for special requirements.*

*Because aerospace manufacturing and repair operations can result in emission of Hazardous Air Pollutants (HAP) from process materials such as primers, topcoats, paint strippers, and cleaners, new requirements for the following operations are in effect:*

- *Cleaning operations*
- *Primer and topcoat operations*
- *Depainting operations*
- *Chemical milling maskant operations*



# Aerospace Manufacturing, Repair Operations

## WHAT YOU NEED TO KNOW TO COMPLY

*Ecology Fact Sheet*

*Publication #97-213h*

The 1990 Clean Air Act directs the U.S. Environmental Protection Agency (EPA) to regulate emissions into the air of 189 toxic chemicals. To control emissions of these chemicals, the EPA issues National Emission Standards for Hazardous Air Pollutants (NESHAPs).

On September 1, 1995, the EPA finalized a rule covering air emissions of Hazardous Air Pollutants (HAPs) from operations and processes used in aerospace manufacturing and repair. This regulation targets this industry because HAPs are emitted during use of many process materials such as cleaning agents, strippers and coatings.

If your facility has the potential to emit 10 tons of any one HAP or 25 tons of any combination of HAPs, then your company is considered a major source, and must comply with the NESHAP. Reducing your emissions below these levels can eliminate the need to comply with this standard. (*See emission reduction opportunities on Pages 2-3*). However, if compliance with this NESHAP is unavoidable, then all existing manufacturing and repair facilities are required to be in compliance by September 1, 1998. New operations must be in compliance at start-up.

The targeted operations under this rule are: cleaning operations; depainting operations; primer and topcoat operations; and chemical milling maskant operations. Each operation has different requirements, which are summarized in the table below. You should contact your state's Small Business Assistance Program representative (*see Page 3*) or the air quality authority in your local area to determine all of the specific requirements under this rule. **Summarized below are NESHAP requirements and ways to comply with them:**

OPERATION	REQUIREMENT	HOW TO ACHIEVE
CLEANING	Use solvents with vapor pressure less than 45mm HG	Use EPA-approved solvent
PRIMING	Maximum HAP content: 2.9 lbs. per gallon	<ul style="list-style-type: none"> <li>■ Use low-solvent coatings</li> <li>■ Install control equipment</li> <li>■ Calculate emissions average of different processes</li> </ul>
TOPCOATS	Maximum HAP content: 3.5 lbs. per gallon	
APPLYING COATING	<ul style="list-style-type: none"> <li>■ Flow, roll, brush or dip coating</li> <li>■ Electrostatic or HVLP spray guns</li> </ul>	
DEPAINTING	Zero HAP emissions (26-50 gallons of HAP-containing strippers allowed for spot removal)	<ul style="list-style-type: none"> <li>■ Media blasting</li> <li>■ High-intensity UV light blasting</li> <li>■ Other non-chemical strippers</li> <li>■ Other non-HAP chemical strippers</li> </ul>
CHEMICAL MILLING MASKANT	Maximum HAP content: 1.3 lbs. per gallon	<ul style="list-style-type: none"> <li>■ Install control equipment</li> <li>■ Use variety of maskants with weighted average that meets limit</li> </ul>

# ACHIEVING COMPLIANCE THROUGH POLLUTION PREVENTION

A small business can take advantage of pollution prevention opportunities in order to minimize its regulatory compliance requirements. There are many alternatives to traditional solvent-based coatings and cleaning solutions. Talk to your supplier or the contacts listed on Page 3 about these alternatives. Chemical stripper alternatives, however, are more difficult to find and implement. Below and on Page 3 are tables describing the available alternatives, their benefits and disadvantages.

## CO<sub>2</sub> SNOW BLASTING

**Description:** A low-impact process using small flakes of dry ice, which hit small particulate contaminants less than one micron in size, then vaporize, lifting the contamination from the surface. Often used as a final cleaning process for removing small particulates and light soils.

**Web Site:** [http://enviro.nfesc.navy.mil/p2library/5-02\\_896.html](http://enviro.nfesc.navy.mil/p2library/5-02_896.html)

<u>Benefits</u>	<u>Drawbacks</u>
<ul style="list-style-type: none"> <li>■ Reduced hazardous wastes and HAPs</li> <li>■ Cleaning time reduced 80% to 90%</li> <li>■ Residue-free</li> <li>■ Good for precision cleaning</li> </ul>	<ul style="list-style-type: none"> <li>■ Capital costs</li> <li>■ May require multiple passes to remove paint</li> <li>■ Added operator training necessary</li> </ul>

## PLASTIC MEDIA BLASTING

**Description:** A dry, abrasive blasting process using reusable, angular plastic particles. Well suited for stripping paints because the low pressure and relatively soft plastic particles have minimal effects on surfaces beneath paint.

**Web Site:** [http://enviro.nfesc.navy.mil/p2library/5-05\\_896.html](http://enviro.nfesc.navy.mil/p2library/5-05_896.html)

<u>Benefits</u>	<u>Drawbacks</u>
<ul style="list-style-type: none"> <li>■ Blasting media can be recycled 10 to 12 times</li> <li>■ Eliminates wastewater disposal costs</li> <li>■ Eliminates generation of waste solvents</li> </ul>	<ul style="list-style-type: none"> <li>■ Capital costs</li> <li>■ Generates hazardous wastes eventually</li> <li>■ May not be suitable for certain surfaces</li> <li>■ May not remove corrosion</li> </ul>



## SPONGE BLASTING SYSTEMS

**Description:** A type of abrasive blasting process using either grit-impregnated foam or foam without grit. Sponge blasting systems incorporate various grades of water-based urethane-foam cleaning media used to clean and prepare coatings for a variety of surfaces, from wallpaper to high-performance protective coatings for steel and concrete.

**Web Site:** [http://environfesc.navy.mil/p2library/5-06\\_796.html](http://environfesc.navy.mil/p2library/5-06_796.html)

### Benefits

- Safer operations
- Easily transportable
- Sponge media recyclable 10 to 15 times
- Reduces dust

### Drawbacks

- Sponges more expensive than blasting sand
- Capital costs

## WHEAT STARCH BLASTING

**Description:** A low-pressure and relatively soft blasting medium made from crystallized wheat starch. Non-toxic, biodegradable and similar in appearance to plastic media. Well suited for stripping paints from aluminum alloys and composites without risking damage to surface.

**Web Site:** [http://environfesc.navy.mil/p2library/5-07\\_896.html](http://environfesc.navy.mil/p2library/5-07_896.html)

### Benefits

- 95 percent waste volume reduction
- Usable on metallic, composite surfaces
- Highly controllable
- No fatigue to substrate surfaces
- Safe for soft-clad aluminum
- Eliminates water use
- No part size limitations

### Drawbacks

- Capital costs
- Requires material recovery and dust collection system
- Slow to moderate production rate
- Moisture sensitive material may need air dryer for humidity control

### WHO TO CALL FOR HELP

Through the Washington Department of Ecology's Compliance Assistance Office, non-enforcement assistance is available for small businesses with air quality questions. The purpose of the program is to:

- Explain air quality regulations and recommend ways to comply.
- Provide free, on-site technical assistance visits.
- Help businesses estimate air pollution emissions.

- Refer businesses to needed resources.
- Provide information on potential sources of financing.

**For more information, contact:**  
**Compliance Assistance Office**  
*Bernard Brady*, 360-407-6803  
[bbra461@ecy.wa.gov](mailto:bbra461@ecy.wa.gov)  
<http://www.wa.gov/ecology>