



If you own or operate a facility that manufactures wood products and has the potential to emit 10 tons of a single hazardous air pollutant (HAP) or 25 tons of a combination of HAPs annually, then you may have to comply with the National Emissions Standard for Hazardous Air Pollutants (NESHAP) for the manufacture of wood products.

Manufacturers of wood products in Standard Industrial Classification codes 2434, 2511, 2512, 2517, 2519, 2521, 2531, 2541, 2599 and 5712 are affected by this NESHAP.



Wood Furniture Manufacturing

WHAT YOU NEED TO KNOW TO COMPLY

Ecology Fact Sheet

Publication #97-213e

The 1990 Clean Air Act (CAA) 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 December 7, 1995, the EPA finalized a rule covering air emissions of Hazardous Air Pollutants (HAPs) from wood furniture finishing operations. This regulation targets wood furniture manufacturers because HAPs are emitted during the application or use of paints, lacquers, stains, solvents and glues in the manufacturing process.

If your company emits 10 tons of any one HAP or 25 tons of any combination of HAPs then you have responsibility under this NESHAP. Reducing your emissions below these levels can eliminate the need to comply with this standard (see *emission reduction opportunities on Page 2 of this fact sheet*). However, if compliance with this NESHAP is unavoidable, then there are two basic components with which your facility must comply:

1) HAP Content Limit - You will only be allowed to use finishing materials that have HAP content levels at or below the established limits (see *the attached sheet for a summary of emission limits*).

2) Work Practices - In addition to the HAP content limits, you will have to start using the work practices set forth in the rule.

If you are unsure of how to calculate your emission levels then call the contact person on the back of this fact sheet for free, non-regulatory assistance. In the meantime, begin incorporating the Work Practices requirement (in *the table on the back of the attached sheet*), and implement the emissions reduction opportunities detailed on Page 2, as these are practices that will benefit your company, workers and the environment.

Compliance Dates

Type of Source	Actual Emissions	Compliance Date
Existing Source (installed and operating before December 6, 1994)	Fewer than 50 tons of HAPs per year	December 7, 1998
	More than 50 tons of HAPs per year	November 21, 1997
	Area sources that become major HAP sources	One year after becoming a major source
New Source (installed and operational after December 6, 1994)	Major source	Upon startup or December 7, 1995, whichever is later
	New non-major sources that become major sources	Immediately, once the operation becomes a major source

ACHIEVING COMPLIANCE THROUGH POLLUTION PREVENTION

EMISSIONS REDUCTION OPPORTUNITIES

A small business can take advantage of pollution prevention opportunities to minimize their potential air quality liability as a manufacturer of wood products. Pollution prevention is minimizing or eliminating waste generation at the source, through careful choice and management of materials, production inputs, work practices and processes.

Equipment Cleaning

By carefully managing your cleaning practices, you can minimize your use of chemicals.

- Determine whether cleaning is necessary - you may find that it is not.
- Minimize the number of times you clean your equipment. Apply light-colored finishing materials first, then progressively use darker coatings whenever possible.
- Flush equipment first with dirty solvent before final cleaning with virgin solvent, or preclean with rags before cleaning with solvents.
- Use enclosed gun cleaners
- Use solvents until they lose their effectiveness, as opposed to when they look dirty.

Substitute Materials

The wood furniture Maximum Achievable Control Technology (MACT) standard allows for the use of low-volatility HAP coatings and cleaning solutions. Work closely with suppliers to identify substitutes for raw materials containing solvents.

- High Solids Coatings - High solids coatings are solvent-borne coatings with at least 50 percent solids content.
- Water-borne Coatings - Water-borne coatings contain water as well as some solvent. They are used in the industry on open-pore and lighter-colored woods.
- UV-Curable Coatings - UV-curable coatings can be 100 percent reactive liquids, and require UV light for curing.

Manage Inventory

Too much inventory or lack of inventory control can lead to wasted materials, either by using more than needed or purchasing materials that deteriorate before use.

- Work closely with suppliers to provide just-in-time material delivery. Order accurate amounts needed.
- Use a multi-purpose solvent.

This can reduce your costs of managing waste and facilitate recycling.

- Return unused materials to your supplier (make arrangements up front, before purchase). Explore the possibility of returning materials with expired shelf life to your supplier.

Modify Production Process

A more technical pollution prevention activity is modifying your production process. This includes worker training, substituting or modifying equipment, increasing automation, or redesigning or reformulating your end product. Begin making modifications in the equipment used to apply coatings to your wood surfaces.

- Training - Skillful use of spray guns can significantly and consistently increase transfer efficiency of

coating materials. In wood finishing tests carried out under realistic conditions, expert sprayers achieved higher transfer efficiencies than novices 90 percent of the time.

- High Volume/Low Pressure (HVLP) Spray Equipment - HVLP spray guns operate at low pressure, such as 10 psi, compared to 30-90 psi with conventional spray guns. HVLP spray guns are effective for both solvent- and water-borne materials and increase transfer efficiency up to 40-70 percent.

- Airless Spray Equipment - Airless spray systems atomize the coating by increasing the coating's fluid pressure (ranges from 500-6,500 psi) without introducing a pressurized air flow. Transfer efficiency ranges from 36-65 percent.

- Air-Assisted Airless Spray Equipment - these systems combine compressed air atomization with airless atomization. About 85 percent of the coating is atomized by fluid pressure (150-800 psi), and 15 percent is atomized by air pressure (5-30 psi) supplied at the nozzle. Transfer efficiency ranges from 40-70 percent. ■

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 the air quality regulations and recommend ways to comply;
- provide free, on-site technical assistance visits;
- help businesses estimate their air pollution emissions;
- refer businesses to needed resources; and
- provide information on potential sources of financing for compliance requirements.

For more information, contact:

Compliance Assistance Office

Bernard Brady, 360-407-6803
e-mail: bbra461@ecy.wa.gov

Small Business Advocate

Leighton Pratt, 360-407-7018
e-mail: lptra461@ecy.wa.gov

<http://www.wa.gov/ecology>



Summary of Emissions Limits

For emissions during:	Existing Sources in - kg/kg solids or - lb/lb solids	New Sources in - kg/kg solids or - lb/lb solids
<i>Finishing Operations</i>		
(a) Achieve a weighted average HAP content across all coatings (maximum) kg VHAP/kg solids [lb VHAP/solids] as applied;	1.0	0.8
(b) Use compliant finishing materials (maximum kg VHAP/kg solids [lb VHAP/lb solids]) as applied;		
---stains	1.0	1.0
---washcoats	1.0	0.8
---sealers	1.0	0.8
---topcoats	1.0	0.8
---basecoats	1.0	0.8
---enamels	1.0	0.8
---thinners (maximum % allowable)	10.0	10.0
(c) Use a control device;	1.0	0.8
(d) Use a combination of (b) and (c)	1.0	0.8
<i>Cleaning Operations</i>		
Strippable spray booth material (maximum VOC content, kg VOC/kg solids [lb VOC/lb solids])	0.8	0.8
<i>Gluing Operations --- Contact adhesives</i>		
(a) Use compliant contact adhesives (maximum kg VHAP /kg solids [lb VHAP/lb solids] as applied) based on the following criteria:		
1 --- For foam adhesives used in products that meet flammability requirements	1.8	0.2
2 --- For all other contact adhesives, including foam adhesives used in products that do not meet flammability requirements	1.0	0.2
(b) Use a control device	1.0	0.2

Work Practices

Finishing Operations

Task	Pollution Prevention Practice
Transfer equipment leaks	Develop written inspection and maintenance plan to address and prevent leaks. Inspect equipment at least once per month.
Storage containers and mixing equipment	Cover containers used for HAP-containing materials.
Application equipment	Use conventional air-spray guns only: 1) when compliant coatings are used, 2) for touch-up work, 3) when control equipment is in place or 4) when alternative application technologies are not feasible.
Finishing materials	Demonstrate that usage of certain HAPs defined in the rule have not increased except as allowed by proposed standard.

Cleaning Operations

Task	Pollution Prevention Practice
Gun and line cleaning	Collect and store all cleaning solvent in covered containers.
Spray booth cleaning	Follow solvent content requirements for cleaning spray booth components (e.g. less than 8% by weight VOC content).
Washoff and general cleaning	<p>*Do not use cleaning solvents containing known or probable carcinogens in concentrations subject to MSDS reporting as required by OSHA.</p> <p>*Keep washoff tank covered when not in use.</p> <p>*Minimize dripping by tilting or rotating parts to drain as much solvent as possible. Allow sufficient time for drying.</p> <p>*Keep a monthly log of the quantity and type of washoff solvent used; the quantity of waste solvent shipped off site; and whether the waste was disposed or recycled.</p>

Other

Task	Pollution Prevention Practice
Operator training	Develop and provide operator training covering application techniques, cleaning and washoff procedures, equipment setup and waste management.
Leak inspection and maintenance plan	Prepare and implement an inspection schedule and repair procedures.
Work practice implementation plan	Prepare a written plan that describes the work practices your facility will follow.
Establish baseline usage level and tracking	Identify HAPs present at your facility and establish a baseline usage level. Track the annual usage and, if the baseline level is exceeded, provide written notification.