

Source Category:	Residential Combustion – Woodstoves and Fireplaces with Inserts
SCC Code:	Fireplaces with Inserts: 2104008002 With Inserts; Non-EPA Certified 2104008003 With Inserts; Non-Catalytic, EPA Certified 2104008004 With Inserts; Catalytic, EPA Certified Woodstoves: 2104008010 Non-EPA Certified 2104008030 Catalytic, EPA Certified 2104008050 Non-Catalytic, EPA Certified
Pollutants of Concern:	PM-10, PM-2.5
How is the PM National Emission Inventory developed for this category?	
Current Methodology (see also the link to the NEI Methodology Description):	
<ul style="list-style-type: none"> • EPA determines the number of woodstoves and inserts in the US (<i>U.S. Department of Census [DOC] data</i>). EPA uses data from the DOC and adjusts for the fact that some homes have more than one stove. Consider units used for main heating different from those used for other heating. • EPA determines the total wood consumed by woodstoves and inserts by taking the total cords of wood consumed by the residential section for 1997 (from the DOE/EIA) and subtracting the wood used for aesthetics (determined separately for fireplaces). EPA assumes that wood burned for aesthetics is burned in fireplaces. • EPA allocates wood consumption to the five climate zones. • Within each climate zone, EPA allocates wood consumption to the individual county using the relative percent of detached single family homes in the county to the total number of detached single family homes in the entire climate zone. • EPA sums the wood consumption in each zone and compares the urban and rural split. EPA adjusts the total until you get the desired split. For woodstoves, the split is 69 percent rural and 31 percent urban. For inserts, the split is 50/50. For example, if the total wood consumption for woodstoves in climate zone 1 was 60 percent for rural 40 percent for urban, then each urban and rural county with that zone would receive a percent increase or decrease in cordwood consumption to obtain the correct percent split to reach the 69 percent rural and 31 percent urban split. • EPA also apportion woodstove type. Ninety-two percent of the woodstoves are non-EPA certified, 5.7 percent are EPA certified non-catalytic, and 2.3 percent are EPA-certified catalytic • Once the amount of wood consumed per RWC type is obtained, EPA uses AP-42 factors to obtain emission estimates. 	

Current Variables/Assumptions Used:

- Consumption estimates not based on specific device types.
- National statistics used to determine the consumption rates (heating vs. aesthetic usage, number of fireplaces/home, fuel type (wood vs. gas), number of fireplaces not used, and fireplaces with and without inserts).

Uncertainties / Shortcomings of Current Methods:

As mentioned in “Current Methodology”, consumption rates for heating and aesthetic burning are assumed constant throughout the country. Allocation to county level of wood consumption is different for fireplaces with inserts than for fireplaces without inserts. Both allocation methods depend on population.

How can State, Local, and Tribal agencies improve upon this methodology?

- Consumption estimates based on specific device types (fireplaces with specific types of inserts), by county for those counties with where wood stove use is substantial is preferred. [*Survey*]
- Estimate the number of devices in existence, number of devices in use, and the number of devices being used to burn wood at State or county level (national values currently used). Allocation to county level for fireplaces with inserts depends solely on number of detached single family residences in county. [*Housing survey, Consumer Product Safety Commission*]
- Characterization of devices being used as primary heating devices, secondary heating devices, or use for aesthetic purposes (national values currently used). [*Housing survey, Consumer Product Safety Commission*]

Where can I find Additional Information and Guidance?

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AP-42, Section 1.9	http://www.epa.gov/ttn/chief/ap42/ch01/final/c01s09.pdf
Area Source Emissions Model	http://www.epa.gov/ttn/chief/software/asem/index.html
EIIP Document on Res. Wood Combustion	http://www.epa.gov/ttn/chief/eiip/techreport/volume03/ii02_apr2001.pdf
NEI Methodology Description	ftp://ftp.epa.gov/EmisInventory/finalnei99ver2/criteria/ or http://www.epa.gov/ttn/chief/eidocs/sec5part1_reswood.pdf