

Sample Emission Calculations for Incinerators

The following emission calculation is an example for industrial/commercial multiple chamber incinerators and is based on Table 2.1-12 in the 5th Edition of AP-42 (EPA.)

<u>Pollutant</u>	<u>Emission Factor</u>
Nitrogen oxides (NO _x)	3 lb/ton
Carbon monoxide (CO)	1 lb/ton
Particulate (PM10)	7 lb/ton
Organic compounds (VOC)	3 lb/ton
Sulfur dioxide (SO ₂)	2.5 lb/ton

If the manufacturer of your unit has provided emission data please rely on that instead of the above factors.

Example:

The incinerator burns 100 pounds per hour of waste.

Calculation:

Usually, you can assume full year operation for emission calculation purposes (8760 hours per year.)

NO_x

First convert pounds of waste to tons of waste. $100 \text{ lb} / (2000 \text{ lbs per ton}) = 0.05 \text{ ton}$

So, the unit burns 0.05 tons of waste per hour. Multiply this by the emission factor of 3 lb NO_x per ton of waste.

$0.05 \text{ ton/hr} \times 3 \text{ lb/ton} = \mathbf{0.15 \text{ lb NO}_x/\text{hr}}$. Repeat this for the remaining pollutants.

To get annual emissions, multiply the hourly emissions by the hours of operation per year and convert the pounds to tons by dividing by 2000.

$0.15 \text{ lb/hr} \times 8760 \text{ hr/yr} / (2000 \text{ lbs per ton}) = \mathbf{0.66 \text{ ton NO}_x/\text{yr}}$