Emission Inventory: Activity × Emission Factor × Control

Annual emission of a pollutant from an activity rate and an emission factor, reduced by a control efficiency, as used for plant emission inventories.

Method: E = A × EF × (1 − η_c) (emission inventory method, e.g. US EPA AP-42 introduction)

Input parameters

Unit system: SI

Parameter	Value	Unit
Activity per year (fuel burnt, product made…) In the unit your emission factor uses, e.g. tonnes of coal.	250,000	
Emission factor (kg per unit of activity) In kg per unit of activity. AP-42 factors are mostly in lb per ton or lb per MMBtu: 1 lb/ton (short) = 0.5 kg/t; 1 lb/MMBtu = 0.430 kg/GJ.	9.5000	
Control efficiency	90.000	%

Calculated results

Parameter	Value	Unit
Uncontrolled emission	2,375.0	t
Controlled emission	237.50	t

Formula and method

$$E = A \cdot EF \cdot (1 - \eta_c)$$

Variables

A	Activity per year (fuel burnt, product made…)	-
EF	Emission factor (kg per unit of activity)	-
η_c	Control efficiency	-
E_0	Uncontrolled emission	kg
E	Controlled emission	kg

Method and standards

Inventory method.

Assumptions and limits

- Average annual conditions.
- EF in kg per unit of activity: convert AP-42 factors first (1 lb per short ton = 0.5 kg/t; 1 lb/MMBtu = 0.430 kg/GJ), or the result is off by a factor of 2 or more.

References

- E = A × EF × (1 − η_c) (emission inventory method, e.g. US EPA AP-42 introduction)

Report details

Report reference	FCC-0HEG-GTEM (the same inputs always give the same reference)
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Calculator	Emission Inventory: Activity × Emission Factor × Control
Method last reviewed	12 November 2026
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Release checks	2 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/environmental/air-pollution/emission-inventory

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.