

Calculating PTE for Plating

Step 1

Use any available performance test data. Set up worksheet in spreadsheet to reflect this data, link to *Totals* worksheet. None was available for the plating operation for which this spreadsheet was developed.

Step 2

Use any suitable emission factor from AP42, Electroplating, 12.20.

Depending on emission factor(s) you use, you may have to change the data needed and the equations for computing the calculations. Build new links to *Totals* worksheet as needed.

The emission factor used in this spreadsheet came from the July, 1997 version, the most current version to date.

Step 3

Refer to pages 10-94 through 10-101 of *Industrial Ventilation* 21st Edition. 1992. American Conference of Governmental Industrial Hygienists, Inc. Cincinnati, Ohio.

Choose plating processes appropriate for operation.

Determine pollutant type that comes from each of these processes.

Determine gassing rate for each process. Assume higher gassing rate whenever a range of gassing rates is given. Determine % loss of make-up from the table below. Note: Gassing rates, as given in table below, are referenced in *Modern Pollution Control Technology*, Vol. 1, Air Pollution Control, Staff of Research and Education Association, Research and Education Association, 342 Madison Avenue, New York, N.Y. 10017. Book is available in Minnesota Pollution Control Agency (MPCA) library.

% loss of make-up	Gassing rate
5	High
3	Medium
2	Low
0	Nil

Step 4

Open the spreadsheet, *plating.xls*. Go to *Gassing Rate* worksheet.

Enter data for:

- Plating process
- Pollutant type
- Tank size
- # of tanks
- # of change overs
- Concentration of reagent
- Density or Specific Gravity of material
- % Loss of make up

In Total Actual Emissions column correct equations in computing cells to incorporate density or specific gravity as appropriate.

In Potential Emissions column replace 4160 hr/yr with number of actual operating hours both in descriptor cell (blue type) and in equations in computing cells.

Step 5

For processes for which there are no emission factors and which are not covered in *Industrial Ventilation*, as described above, assume everything purchased is lost.

Enter data for:

- Plating process
- Pollutant type
- Tank size
- # of tanks
- # of change overs
- Concentration of reagent as purchased
- Concentration in bath
- Density or Specific Gravity of material

In Total Actual Emissions column correct equations in computing cells to incorporate density or specific gravity as appropriate.

In Potential Emissions column replace 4160 hr/yr with number of actual operating hours both in descriptor cell (blue type) and in equations in computing cells.

Step 6

Check *Total* worksheet. Total potential emissions will have been calculated.