

Environmental Protection Agency

§ 98.63

(1) Electrolysis in prebake and Søderberg cells.

(2) Anode baking for prebake cells.

(b) This source category does not include experimental cells or research and development process units.

§ 98.61 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains an aluminum production process and the facility meets the requirements of either § 98.2(a)(1) or (a)(2).

§ 98.62 GHGs to report.

You must report:

(a) Perfluoromethane (CF₄), and perfluoroethane (C₂F₆) emissions from anode effects in all prebake and Søderberg electrolysis cells.

(b) CO₂ emissions from anode consumption during electrolysis in all prebake and Søderberg electrolysis cells.

(c) CO₂ emissions from on-site anode baking.

(d) You must report under subpart C of this part (General Stationary Fuel Combustion Sources) the emissions of CO₂, N₂O, and CH₄ emissions from each

stationary fuel combustion unit by following the requirements of subpart C.

[74 FR 56374, Oct. 30, 2009, as amended at 75 FR 79155, Dec. 17, 2010]

§ 98.63 Calculating GHG emissions.

(a) The annual value of each PFC compound (CF₄, C₂F₆) shall be estimated from the sum of monthly values using Equation F-1 of this section:

$$E_{PFC} = \sum_{m=1}^{m=12} E_m \quad (\text{Eq. F-1})$$

Where:

E_{PFC} = Annual emissions of each PFC compound from aluminum production (metric tons PFC).

E_m = Emissions of the individual PFC compound from aluminum production for the month "m" (metric tons PFC).

(b) Use Equation F-2 of this section to estimate CF₄ emissions from anode effect duration or Equation F-3 of this section to estimate CF₄ emissions from overvoltage, and use Equation F-4 of this section to estimate C₂F₆ emissions from anode effects from each prebake and Søderberg electrolysis cell.

$$E_{CF_4} = S_{CF_4} \times AEM \times MP \times 0.001 \quad (\text{Eq. F-2})$$

Where:

E_{CF₄} = Monthly CF₄ emissions from aluminum production (metric tons CF₄).

S_{CF₄} = The slope coefficient ((kg CF₄/metric ton Al)/(AE-Mins/cell-day)).

AEM = The anode effect minutes per cell-day (AE-Mins/cell-day).

MP = Metal production (metric tons Al), where AEM and MP are calculated monthly.

$$E_{CF_4} = EF_{CF_4} \times MP \times 0.001 \quad (\text{Eq. F-3})$$

Where:

E_{CF₄} = Monthly CF₄ emissions from aluminum production (metric tons CF₄).

EF_{CF₄} = The overvoltage emission factor (kg CF₄/metric ton Al).

MP = Metal production (metric tons Al), where MP is calculated monthly.

$$E_{C_2F_6} = E_{CF_4} \times F_{C_2F_6/CF_4} \times 0.001 \quad (\text{Eq. F-4})$$

Where:

E_{C₂F₆} = Monthly C₂F₆ emissions from aluminum production (metric tons C₂F₆).