

Aluminum Production Monitoring Checklist



Final Rule: Mandatory Reporting of Greenhouse Gases

What Must Be Monitored?

**Measure these parameters annually
(unless otherwise noted)...**

Perfluoromethane (CF₄) Emissions from Each Prebake and Søderberg Cell

If estimating CF₄ emissions from anode effect duration:

- | | |
|---|--|
| <input type="checkbox"/> Anode effect minutes per cell-day (monthly) (AE-Mins/cell-day) | <input type="checkbox"/> Aluminum production (monthly) (metric tons) |
|---|--|

If estimating CF₄ Emissions from overvoltage:

- | | |
|--|--|
| <input type="checkbox"/> Aluminum production (monthly) (metric tons) | <input type="checkbox"/> Anode effect overvoltage factor (kg CF ₄ /metric ton Al)/(mV/cell day) |
| <input type="checkbox"/> Potline overvoltage (mV/cell day) | <input type="checkbox"/> Current efficiency (%) |

Process CO₂ Emissions from Anode Consumption During Electrolysis for Prebake Cells, If Not Using a CEMS

- | | |
|---|---|
| <input type="checkbox"/> Net annual prebaked anode consumption per metric ton Al (metric tons C/metric tons Al) | <input type="checkbox"/> Sulfur content in baked anode (percent weight) |
| <input type="checkbox"/> Annual Al production (metric tons) | <input type="checkbox"/> Ash content in baked anode (percent weight) |

Process CO₂ Emissions from Anode Consumption During Electrolysis for Söderberg Cells, If Not Using a CEMS

- | | |
|---|---|
| <input type="checkbox"/> Paste consumption (metric ton/metric ton Al) | <input type="checkbox"/> Ash content of pitch (percent weight) |
| <input type="checkbox"/> Annual Al production (metric tons) | <input type="checkbox"/> Hydrogen content of pitch (percent weight) |
| <input type="checkbox"/> Emissions of cyclohexane soluble matter (kg/metric ton Al) | <input type="checkbox"/> Sulfur content in calcined coke (percent weight) |
| <input type="checkbox"/> Binder content of paste (percent weight) | <input type="checkbox"/> Ash content in calcined coke (percent weight) |
| <input type="checkbox"/> Sulfur content of pitch (percent weight) | <input type="checkbox"/> Carbon in skimmed dust from Söderberg cells (metric ton C/metric ton Al) |

CO₂ Emissions from Anode Baking of Prebake Cells – Pitch Volatiles Consumption

- | | |
|--|--|
| <input type="checkbox"/> Initial weight of green anodes (metric tons) | <input type="checkbox"/> Annual baked anode production (metric tons) |
| <input type="checkbox"/> Annual hydrogen content in green anodes (metric tons) | <input type="checkbox"/> Annual waste tar collected (metric tons) |

CO₂ Emissions from Anode Baking of Prebake Cells – Bake Furnace Packing Material

- | | |
|---|--|
| <input type="checkbox"/> Annual packing coke consumption (metric tons/metric ton baked anode) | <input type="checkbox"/> Sulfur content in packing coke (percent weight) |
| <input type="checkbox"/> Annual baked anode production (metric tons) | <input type="checkbox"/> Ash content in packing coke (percent weight) |

Other

- Smelter specific slope coefficients (or overvoltage emission factors), if applicable

Note: Sources may use either smelter-specific values from annual measurements of parameters needed to complete the equations in §98.63 (e.g., sulfur, ash, and hydrogen contents, and carbon in skimmed dust from Söderberg cells) or the default values shown in Table F-2 of subpart F.

See also the information sheet for Aluminum Production (EPA-430-F-09-029R) at: www.epa.gov/ghgreporting/documents/pdf/infosheets/aluminumproduction.pdf.

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