

# Phosphoric Acid Production

## Subpart Z, Greenhouse Gas Reporting Program

### OVERVIEW

Subpart Z of the Greenhouse Gas Reporting Program (GHGRP) (40 CFR 98.260 – 98.268) applies to any facility that contains a phosphoric acid ( $H_3PO_4$ ) production process and meets the Subpart Z source category definition. Some subparts have thresholds that determine applicability for reporting, and some do not. To decide whether your facility must report under this subpart, please refer to 40 CFR 98.261 and the GHGRP [Applicability Tool](#).

This Information Sheet is intended to help facilities reporting under Subpart Z understand how the source category is defined, what greenhouse gases (GHGs) must be reported, how GHG emissions must be calculated and shared with EPA, and where to find more information.



### How is This Source Category Defined?

The phosphoric acid ( $H_3PO_4$ ) production source category consists of facilities that produce  $H_3PO_4$  using a wet-process  $H_3PO_4$  process line where phosphate ( $PO_4^{3-}$ ) rock reacts with acid.



### What GHGs Must Be Reported?

$H_3PO_4$  production facilities must report carbon dioxide ( $CO_2$ ) emissions from each wet-process  $H_3PO_4$  process line.

If multiple Greenhouse Gas Reporting Program (GHGRP) source categories are co-located at a facility, the facility may need to report greenhouse gas (GHG) emissions under a different subpart. For example, facilities must report  $CO_2$ , nitrous oxide ( $N_2O$ ), and methane ( $CH_4$ ) emissions from each stationary combustion unit on site by following the requirements of Subpart C (General Stationary Fuel Combustion Sources), found at 40 CFR 98.38 – 98.38. Please refer to the relevant information sheet for a summary of the rule requirements for any other source categories located at the facility.



### How Must GHG Emissions Be Calculated?

Owners or operators can elect to calculate and report process  $CO_2$  emissions by using one of two methods:

- **Approach One:** Installing and operating a continuous emission monitoring system (CEMS) that complies with the Tier 4 Calculation Methodology specified in Subpart C (General Stationary Fuel Combustion Sources), found at 40 CFR 98.38 – 98.38; or
- **Approach Two:** Calculating the process  $CO_2$  emissions using the following measurements:
  - Monthly mass of  $PO_4^{3-}$  rock consumed by each process line.
  - Monthly inorganic carbon (C) content or  $CO_2$  content of each grab sample of  $PO_4^{3-}$  rock.

However, if process  $CO_2$  emissions from  $H_3PO_4$  production are emitted through the same stack as a combustion unit or process equipment that uses a CEMS and follows Tier 4 Calculation Methodology

to report CO<sub>2</sub> emissions, then the CEMS must be used to measure and report combined CO<sub>2</sub> emissions from that stack. In such cases, the reporter cannot use the CO<sub>2</sub> Calculation Methodology outlined in Approach Two above.

A checklist for data that must be monitored is available here: [Subpart Z Monitoring Checklist](#).



## What Information Must Be Reported?

In addition to the information required by the General Provisions in Subpart A, found at 40 CFR § 98.3(c), the following must be reported under the circumstances indicated:

- If a CEMS is used to measure CO<sub>2</sub> emissions, then under Subpart Z the relevant information required by Subpart C (Fuel Combustion Sources) found at 40 CFR 98.30 – 98.38 for the Tier 4 Calculation Methodology and the following information must be reported:
  - Identification number of each wet-process H<sub>3</sub>PO<sub>4</sub> process line.
  - The annual CO<sub>2</sub> emissions from each wet-process H<sub>3</sub>PO<sub>4</sub> process line (metric tons).
- If a CEMS is not used to measure emissions, then the following information must be reported:
  - Identification number of each wet-process H<sub>3</sub>PO<sub>4</sub> process line.
  - Annual CO<sub>2</sub> emissions from each wet-process H<sub>3</sub>PO<sub>4</sub> process line (metric tons).
  - Annual H<sub>3</sub>PO<sub>4</sub> production capacity (tons) for each wet-process H<sub>3</sub>PO<sub>4</sub> process line.
  - Method used to estimate any missing values of inorganic C content or CO<sub>2</sub> content of PO<sub>4</sub><sup>3-</sup> rock for each wet-process H<sub>3</sub>PO<sub>4</sub> process line.
  - Number of wet-process H<sub>3</sub>PO<sub>4</sub> process lines.
  - Number of times missing data procedures were used to estimate phosphorous rock consumption (months), inorganic C contents of the PO<sub>4</sub><sup>3-</sup> rock (months), and CO<sub>2</sub> contents of the PO<sub>4</sub><sup>3-</sup> rock (months).
  - Annual process CO<sub>2</sub> emissions from H<sub>3</sub>PO<sub>4</sub> production facility (metric tons).

In addition, all annual GHGRP reports must include the following information for each H<sub>3</sub>PO<sub>4</sub> production line:

- Annual H<sub>3</sub>PO<sub>4</sub> production, by origin of the PO<sub>4</sub><sup>3-</sup> rock (tons).
- Annual H<sub>3</sub>PO<sub>4</sub> production capacity (tons).
- Annual arithmetic average percent inorganic C or CO<sub>2</sub> in PO<sub>4</sub><sup>3-</sup> rock from monthly records (% by weight, expressed as a decimal fraction).
- Annual PO<sub>4</sub><sup>3-</sup> rock consumption from monthly measurement records by origin (tons).



## What Records Must Be Maintained?

Reporters are required to retain records that pertain to their annual GHGRP report for at least three years after the date the report is submitted. Please see the [Subpart A Information Sheet](#) and 40 CFR 98.3(g) for general recordkeeping requirements. Specific recordkeeping requirements for Subpart Z are listed at 40 CFR 98.267.



## When and How Must Reports Be Submitted?

Reporters must submit their annual GHGRP reports for the previous calendar year to the EPA by March 31<sup>st</sup>, unless the 31<sup>st</sup> falls on a Saturday, Sunday, or federal holiday, in which case reports are due on the next business day. Annual reports must be submitted electronically using the [electronic Greenhouse Gas Reporting Tool \(e-GGRT\)](#), the GHGRP's online reporting system.

Additional information on setting up user accounts, registering a facility, and submitting annual reports is available on the [GHGRP Help webpage](#).



## When Can a Facility Stop Reporting?

A facility may discontinue reporting under several scenarios, which are summarized in Subpart A (found at 40 CFR 98.2(i)) and the [Subpart A Information Sheet](#).



## For More Information

For additional information on Subpart Z, please visit the [Subpart Z webpage](#). For additional information on the GHGRP, please visit the [GHGRP website](#), which includes additional information sheets, [data](#) previously reported to the GHGRP, [training materials](#), and links to Frequently Asked Questions ([FAQs](#)). For questions that cannot be answered through the GHGRP website, please contact us at: [GHGreporting@epa.gov](mailto:GHGreporting@epa.gov).

*This Information Sheet is provided solely for informational purposes. It does not replace the need to read and comply with the regulatory text contained in the rule. Rather, it is intended to help reporting facilities and suppliers understand key provisions of the GHGRP. It does not provide legal advice; have a legally binding effect; or expressly or implicitly create, expand, or limit any legal rights, obligations, responsibilities, expectations, or benefits with regard to any person or entity.*