

# Hydrochlorofluorocarbon –22 Production and Hydrofluorocarbon –23 Destruction

## Subpart O, Greenhouse Gas Reporting Program

### OVERVIEW

Subpart O of the Greenhouse Gas Reporting Program (GHGRP) (40 CFR §§ 150 – 98.158) applies to any facility that contains hydrochlorofluorocarbon-22 (HCFC–22) production or hydrofluorocarbon-23 (HFC–23) destruction processes and meets the Subpart O 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 § 98.151 and the GHGRP [Applicability Tool](#).

This Information Sheet is intended to help facilities reporting under Subpart O 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?

This source category consists of:

- Processes that produce hydrochlorofluorocarbon-22 (HCFC-22, chlorodifluoromethane, or  $\text{CHClF}_2$ ) using chloroform and hydrogen fluoride (HF).
- Hydrofluorocarbon-23 (HFC-23) destruction processes located at HCFC-22 production facilities.
- HFC-23 destruction processes that destroy more than 2.14 metric tons (tonnes) of HFC-23 per year and that are not located at HCFC-22 production facilities.



## What GHGs Must Be Reported?

Facilities that produce HCFC-22 or destroy HFC-23 must report the following emissions:

- HFC-23 emissions from HCFC-22 production processes at the facility.
- HFC-23 emissions from HFC-23 destruction processes.

If multiple Greenhouse Gas Reporting Program (GHGRP) source categories are co-located at a facility, the facility may need to report GHG emissions under a different subpart. For example, facilities must report carbon dioxide ( $\text{CO}_2$ ), nitrous oxide ( $\text{N}_2\text{O}$ ), and methane ( $\text{CH}_4$ ) emissions from each stationary combustion unit on site by following the requirements of Subpart C (General Stationary Fuel Combustion Sources) found at 40 CFR Part 98.30 – 98.38. Please refer to the relevant information sheet for a summary of the rule requirements and emissions calculation and reporting requirements for any other applicable source categories located at the facility.



## How Must GHG Emissions Be Calculated?

Reporters must calculate HFC-23 emissions as follows:

- For HCFC-22 production processes that do not use a destruction device or that have a destruction device that is not connected to the production equipment, calculate annual HFC-23 emissions at the process level using Equation O-4 and the following annual information:
  - Mass of HFC-23 generated (using either Equation O-1 or Equation O-2 specified in the rule).
  - Mass of HFC-23 sent off site for sale.
  - Mass of HFC-23 sent off site for destruction.
  - Mass of HFC-23 destroyed on site (calculated by multiplying the mass of HFC-23 fed into the destruction device by the destruction efficiency).
  - Increase in the HFC-23 inventory.
- For HCFC-22 production processes with a destruction device that is connected to the production equipment, calculate annual HFC-23 emissions at the process level using Equation O-5 and the following annual information:
  - Mass of HFC-23 emissions from equipment leaks (calculated using default emission factors and measured number of leaks in valves, pump seals, compressor seals, pressure relief valves, connectors, and open-ended lines).
  - Mass of HFC-23 emissions from process vents (calculated for each vent using the HFC-23 emission rate from the most recent emission test and the ratio of the actual production rate and the production rate during the performance test). Emission tests must be conducted every five years, or after significant changes to the process.
  - Mass of HFC-23 from the destruction device (calculated by subtracting the amount of HFC-23 destroyed by the destruction device from the measured mass of HFC-23 fed into the destruction device).
- For HFC-23 destruction processes, calculate HFC-23 emissions based on the mass of HFC-23 fed into the destruction device and the destruction efficiency.

For the destruction efficiency, the owner or operator must conduct a performance test or use the destruction efficiency determined during a previous performance test. To confirm the destruction efficiency, the owner or operator must measure the fluorinated GHG concentration at the outlet of the destruction device annually.

A checklist for data that must be monitored is available here: [Subpart O 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:

- For each HCFC-22 production process, owners or operators must report:
  - Mass of HCFC-22 produced (tonnes).
  - Mass of reactants fed into the HCFC-22 production process.
  - Mass of materials other than HCFC-22 and HFC-23 (e.g., unreacted reactants, hydrogen chloride (HCl), other byproducts) that occur in more than trace concentrations and that are permanently removed from the process.
  - Method for tracking startups, shutdowns, and malfunctions and the HFC-23

- generation/emissions during these events.
  - Names and addresses of facilities to which HFC-23 was sent for destruction and the quantity of HFC-23 sent to each facility.
  - Mass of HFC-23 emitted from equipment leaks and process vents (tonnes).
- For each HFC-23 destruction process, owners or operators must report the following on an annual basis:
  - Mass of HFC-23 emissions from the destruction device.
  - The results of the annual emission measurements (and performance test, if applicable), of the HFC-23 concentration in the gas at the outlet, and as applicable, the flow rate of the gas at the outlet of the destruction device, and the calculated HFC-23 emission rate.
- Facilities with HFC-23 destruction processes are also required to submit a one-time report that must include the following:
  - Methods used to determine the destruction efficiency.
  - Methods used to record the amount of HFC-23 destroyed.
  - Name of other relevant federal or state regulations that may apply to the destruction process.
  - A revised report must be submitted if any changes are made that affect destruction efficiency or the HFC-23 measurement methods used.



## 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 O are listed at 40 CFR § 98.157.



## 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. For facilities required to use the *e-GGRT Inputs Verifier Tool (IVT)*, reporters must enter required data into the e-GGRT IVT, which includes inputs to emission equations for which reporting is not required. IVT uses these data to calculate the equation results.

Each report may be prepared by either a designated representative, an alternate designated representative or agent(s) of the owner or operator. The report must be signed by a designated representative of the owner or operator, certifying under penalty of law that the report has been prepared in accordance with the requirements of the rule. 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 O, please visit the [Subpart O 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.*