

# GHGRP Reporting Requirements for Facilities that Destroy Fluorinated Greenhouse Gases and Heat Transfer Fluids

**Training Webinar:  
March 7, 2023**

# Subpart OO Requirements for Facilities that Destroy Fluorinated GHGs and Fluorinated HTFs

Under subpart OO of part 98 (GHGRP), facilities that produce fluorinated greenhouse gases (F-GHGs) and/or fluorinated heat transfer fluids (F-HTFs)—and certain F-GHG or F-HTF importers and **free-standing F-GHG or F-HTF destruction facilities**—are required to submit one-time and annual reports regarding their destruction processes and the quantities of F-GHGs and F-HTFs that they destroy.

# Who Must Report

- All F-GHG and F-HTF production facilities must report.
- Importers of F-GHGs, F-HTFs, or N<sub>2</sub>O must report if either their total imports or their total exports of F-GHGs, F-HTFs, N<sub>2</sub>O, and carbon dioxide (CO<sub>2</sub>) are greater than or equal to 25,000 metric tons of carbon dioxide equivalent (CO<sub>2</sub>e) per year.
- Other facilities that destroy F-GHGs or F-HTFs must report if the total quantities of F-GHGs and F-HTFs that they destroy are greater than or equal to 25,000 metric tons CO<sub>2</sub>e per year.

# “One-Time” Report on Destruction Processes (Resubmitted If Destruction Process Changes)

- Facilities (including production facilities and destruction-only facilities) and importers that destroy F-GHGs or F-HTFs must also submit a one-time report that contains the following information:
- Destruction efficiency (DE) of each destruction process.
- Methods used to determine DE.
- Methods used to record the mass of F-GHGs or F-HTFs destroyed.
- Chemical identity of the F-GHGs used in the performance test conducted to determine DE.
- Name of all federal or state regulations applicable to the destruction process.
- If any process changes are made affecting unit DE or the methods used to record the mass destroyed, a revised report must be submitted within 60 days of the change.

# Annual Reports on Destruction

- For **each** destroyed F-GHG and F-HTF, facilities must report:
  - Chemical name
  - CAS registry number assigned by the Chemical Abstracts Registry Service
  - Linear chemical formula
  - Mass destroyed

# What Compounds Are Required to Be Reported: Definitions

- *Fluorinated greenhouse gas* means sulfur hexafluoride (SF<sub>6</sub>), nitrogen trifluoride (NF<sub>3</sub>), and **any fluorocarbon** except for controlled substances as defined at 40 CFR part 82, subpart A and substances with vapor pressures of less than 1 mm of Hg absolute at 25 degrees C. With these exceptions, “fluorinated GHG” includes but is not limited to any hydrofluorocarbon, any perfluorocarbon, any fully fluorinated linear, branched or cyclic alkane, ether, tertiary amine or aminoether, any perfluoropolyether, and any hydrofluoropolyether.
- Definition of *fluorinated heat transfer fluid* suspends the exception for compounds with low vapor pressures if the compound is used in certain applications in electronics manufacturing.

# What Compounds Are Required to Be Reported: Examples

- Hydrofluorocarbons (HFCs, e.g., HFC-32, HFC-134a, HFC-143a, etc. Note: HFC-23 destruction is reported under subpart O, not subpart OO)
- Perfluorocarbons (PFCs, e.g.,  $\text{CF}_4$ ,  $\text{C}_2\text{F}_6$ ,  $\text{C}_3\text{F}_8$ ,  $\text{C}_6\text{F}_{14}$ , etc.)
- Sulfur hexafluoride ( $\text{SF}_6$ )
- Nitrogen trifluoride ( $\text{NF}_3$ )
- Hydrofluoroethers (HFEs, e.g., sevoflurane, HFE-569sf2/3M Novec™ 7200, HFE-449s1/3M Novec™ 7100, etc.)
- Perfluoropolyethers such as PFPMIE (e.g., Solvay Galden™ HT-200, HT-170, DO2-TS, etc.)
- Perfluoroalkylamines (e.g., perfluorotripropylamine/3M Fluorinert™ FC-3283/FC-8270)
- Perfluoroalkylmorpholines (e.g., perfluoroisopropylmorpholine/3M Fluorinert™ FC-770)
- Other fully fluorinated compounds such as  $\text{C}_4\text{F}_8\text{O}$
- And more.

# What Compounds Are Not Required to Be Reported to GHGRP

- Controlled substances as defined at 40 CFR part 82, subpart A
  - Most chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs)
  - You should report destruction of CFCs and HCFCs under EPA's ozone protection regulations at 40 CFR part 82, not under the GHGRP.

These compounds may be sent to destruction facilities by



FLUOROCEMICAL  
MANUFACTURERS



HFC/SF<sub>6</sub>  
RECLAMATION  
FACILITIES



ELECTRONICS  
MANUFACTURERS  
(E.G.,  
SEMICONDUCTOR  
MANUFACTURERS)



ELECTRIC POWER  
SYSTEMS (E.G.,  
UTILITIES WITH SF<sub>6</sub>  
THAT CANNOT BE  
RECLAIMED)



AIR-CONDITIONING  
AND REFRIGERATION  
USERS



MILITARY USERS



ANY OTHER  
USERS/PROCESSORS  
OF FLUORINATED  
GHGS AND HTFS

# How Quantities Are Measured

- The mass of each F-GHG or F-HTF destroyed must be determined by measuring the mass of F-GHG or F-HTF fed into the destruction device and applying the destruction efficiency of the destruction device.
- If the measured mass includes more than trace concentrations of materials other than the F-GHG or F-HTF being destroyed, facilities must estimate the concentrations of the F-GHG or F-HTF being destroyed considering current or previous representative concentration measurements and other relevant process information.

# Reporting Destruction of Fluorinated GHGs and Fluorinated HTFs using e-GGRT

- One-time reporting is done on the Subpart OO Reporting Form for Facilities and Companies that Destroy f-GHG (One Time Form).
- Annual reporting is done on the Subpart OO Reporting Form for Producers, Transformers, and Destroyers. Download the forms at: <https://ccdsupport.com/confluence/display/Help/Reporting+Form+Instructions>
- Also see help content detailing use of e-GGRT's Subpart OO reporting features: <https://ccdsupport.com/confluence/display/help/Subpart+OO+-+Suppliers+of+Industrial+Greenhouse+Gases>

## Part 3 - On-Site Destruction Information

Instructions: Identify each F-GHG or F-HTF that was previously produced (as defined at 98.410(b), at any facility) and that was destroyed at your facility. For example, this may include quantities that are shipped to your facility by another facility for destruction and quantities that are returned to your facility for reclamation but are found to be irretrievably contaminated. Report all significant figures (including fractions of a metric ton, if applicable).

Does your facility destroy F-GHGs or F-HTFs? [98.416(a)(3)]	
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Gases		CASRN	Other F-GHG:	CASRN:	Chemical Formula:	Specify Est
(if not listed, select "Search Extended List" to activate column 'C' for a comprehensive list or select "Other F-GHG or F-HTF not listed" and enter the information required in columns 'E', 'F', 'G', and 'H')			If an F-GHG chemical is not listed, search EPA's Substance Registry Services (SRS) by name and/or Chemical Abstracts Service registry number (CASRN) and enter chemical here. If an F-GHG constituent cannot be found via SRS search, add the F-GHG by entering its name and, if available, CASRN [98.416(a)(1)]			
[98.416(a)(3)]						
1						
2						
3						
4						
5						

# For Further Information

- Subpart OO Information Sheet:  
<https://www.epa.gov/sites/default/files/2015-07/documents/ooinformationsheet.pdf>
- CO<sub>2</sub>e Calculators for Importers, Exporters, and Destroyers of Fluorinated GHGs:  
<https://www.epa.gov/ghgreporting/applicability-tool>
- GHGRP Website: <https://www.epa.gov/ghgreporting/ghg-reporters>
- GHGRP Regulations (40 CFR Part 98):  
<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-98?toc=1>
- e-GGRT: <https://ghgreporting.epa.gov/ghg/login.do>
- GHGRP Help Desk: [GHGReporting@epa.gov](mailto:GHGReporting@epa.gov) or  
<https://ccdsupport.com/confluence/display/help/Contact+Us>