

# HCFC-22 Production and HFC-23 Destruction Monitoring Checklist



## Final Rule: Mandatory Reporting of Greenhouse Gases

### *What Must Be Monitored for HCFC-22 Production and HFC-23 Destruction Facilities?*

**To determine the annual mass of HFC-23 from each HCFC production process, measure these parameters...**

#### **Where the mass flow of the combined stream of HFC-23 and another reaction product (e.g., hydrochloric acid [HCl]) is measured:**

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|--|--|
| <input type="checkbox"/> Weekly or more frequent fraction of HFC-23 by weight in HFC-23/other product stream (decimal) | <input type="checkbox"/> Number of concentration and flow measurement periods for the year |
| <input type="checkbox"/> Mass flow of HFC-23/other product stream (kg)   |  |

#### **Where the mass of only a reaction product other than HFC-23 (either HCFC-22 or HCl) is measured:**

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|---|---|
| <input type="checkbox"/> Weekly or more frequent fraction of HFC-23 by weight in HCFC-22/HFC-23 stream (decimal)  | <input type="checkbox"/> Weekly or more frequent mass of HCFC-22 that is measured coming out of the production process (kg)                           |
| <input type="checkbox"/> Weekly or more frequent fraction of HCFC-22 by weight in HCFC-22/HFC-23 stream (decimal) | <input type="checkbox"/> Weekly or more frequent mass of used HCFC-22 that is added to the production process upstream of the output measurement (kg) |
| <input type="checkbox"/> Weekly or more frequent mass of HCFC-22 produced   | <input type="checkbox"/> Number of concentration and mass measurement periods over the year   |

*Note: If the other product is HCl, substitute HCl for HCFC-22 in the above measurements.*

**Measure these parameters if the HCFC-22 production process is not connected to an HFC-23 destruction device...**

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| <input type="checkbox"/> Annual mass of HFC-23 generated (metric tons)   | <input type="checkbox"/> Annual mass of HFC-23 destroyed on site, measured at least weekly (metric tons) |
| <input type="checkbox"/> Annual mass of HFC-23 sent off site for sale, measured at least weekly (metric tons)  | <input type="checkbox"/> HFC-23 in storage at end of year (metric tons)                                  |
| <input type="checkbox"/> Annual mass of HFC-23 sent off site for destruction, measured at least weekly (metric tons)   | <input type="checkbox"/> HFC-23 in storage at beginning of year (metric tons)                            |
| <input type="checkbox"/> If the material sent off site for destruction contains more than trace concentrations of materials other than HFC-23, measure the concentration of HFC-23 at least weekly using a method with an accuracy and precision of 5 percent or better at the concentrations of the process samples |  |

**Measure these parameters if the HCFC-22 production process is connected to an HFC-23 destruction device...**

**Estimate the annual mass of HFC-23 emitted from equipment leaks by measuring:**

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| <input type="checkbox"/> Fraction of HFC-23 by weight in the stream(s) in the equipment (decimal)   | <input type="checkbox"/> Number of sources of each equipment type and service type with screening values less than 10,000 ppmv |
| <input type="checkbox"/> Number of sources of each equipment type and service type with screening values greater than or equal to 10,000 ppmv | <input type="checkbox"/> Number of hours during the year during which equipment contained HFC-23 (hours)                       |

**Estimate the annual mass of HFC-23 emitted from process vents by measuring:**

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| <input type="checkbox"/> HFC-23 emission rate from the process vents during the period of the most recent test (test at least once every five years, or after significant changes to the process)(kg/hr) | <input type="checkbox"/> HCFC-22 production rate during the most recent test period (at least monthly) (kg/hr) |
| <input type="checkbox"/> HCFC-22 production rate during the period (at least monthly) (kg/hr)  | <input type="checkbox"/> Length of period (hours)  |

**Estimate the annual mass of HFC-23 emitted from destruction device by measuring:**

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|--|---|
| <input type="checkbox"/> Annual mass of HFC-23 fed into the destruction device, measured at least weekly (metric tons) | <input type="checkbox"/> Destruction efficiency of the destruction device |
| <input type="checkbox"/> Annual mass of HFC-23 destroyed (metric tons)   |   |

**Other calculations include measuring...**

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|--|---|
| <input type="checkbox"/> Mass of each reactant fed into the process (metric tons)  | <input type="checkbox"/> HFC-23 concentration at the outlet of the destruction device (mass fraction) |
| <input type="checkbox"/> Mass of materials other than HCFC-22 and HFC-23 (i.e., unreacted reactants, HCl, and other byproducts) that occur in more than trace concentrations and that are permanently removed from the process (metric tons) |   |

*See also the information sheet for HCFC Production and HFC-23 Destruction (EPA-430-F-09-039R) at:*

[www.epa.gov/ghgreporting/documents/pdf/checklists/HCFC-22-HFC-23.pdf](http://www.epa.gov/ghgreporting/documents/pdf/checklists/HCFC-22-HFC-23.pdf).

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