Tables to 40 CFR 98, Subpart I, Effective on January 1, 2014

Table I–1 to Subpart I—Default Emission Factors for Threshold Applicability Determination

Product type	Emission factors EF_i					
	CF_4	C_2F_6	CHF_3	C_3F_8	NF_3	SF_6
Semiconductors (kg/m^2)	0.90	1.00	0.04	0.05	0.04	0.20
LCD (g/m^2)	0.50	NA	NA	NA	0.90	4.00
MEMS (kg/m^2)	NA	NA	NA	NA	NA	1.02

Notes: NA denotes not applicable based on currently available information.

[75 FR 74829, December 1, 2010, as amended at 78 FR 68221, November 13, 2013]

Table I–2 to Subpart I—Examples of Fluorinated GHGs Used by the Electronics Industry

Product type	Fluorinated GHGs used during manufacture
Electronics	CF_4, C_2F_6, C_3F_8, c-C_4F_8, c-C_4F_8O, C_4F_6, C_5F_8, CHF_3, CH_2F_2, NF_3, SF_6, and fluorinated HTFs (CF_3-(O–CF(CF_3)-CF_2)$_n$-(O–CF_2)$_m$-O–CF_3, C_nF_{2n+2}, $C_nF_{2n+1}(O)C_mF_{2m+1}$, $C_nF_{2n}O$, $(C_nF_{2n+1})_{3N}$).

[77 FR 10301, February 22, 2012]

Table I–3 to Subpart I of Part 98—Default Emission Factors ($1–U_{ij}$) for Gas Utilization Rates (U_{ij}) and By-Product Formation Rates (B_{ijk}) for Semiconductor Manufacturing for 150mm and 200 mm Wafer Sizes

Process type/Sub-type	Process gas i												
	CF_4	C_2F_6	CHF_3	CH_2F_2	C_2HF_5	CH_3F	C_3F_8	C_4F_8	NF_3	SF_6	C_4F_6	C_5F_8	C_4F_8O
ETCHING/WAFER CLEANING													
$1–U_i$	0.81	0.72	0.50	0.13	0.064	0.51	NA	0.14	0.19	0.55	0.17	0.072	NA
BCF_4	NA	0.10	0.085	0.079	0.077	NA	NA	0.11	0.0040	0.13	0.13	NA	NA
BC_2F_6	0.046	NA	0.030	0.025	0.024	NA	NA	0.037	0.025	0.11	0.11	0.014	NA
BC_4F_6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC_4F_8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC_3F_8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC_5F_8	0.0012	NA	0.0012	NA	NA	NA	NA	0.0086	NA	NA	NA	NA	NA
$BCHF_3$	0.10	0.047	NA	0.049	NA	0.0034	NA	0.040	NA	0.0012	0.066	0.0039	NA
CHAMBER CLEANING													
In situ plasma cleaning:													
$1–U_i$	0.92	0.55	NA	NA	NA	NA	0.40	0.10	0.18	NA	NA	NA	0.14
BCF_4	NA	0.21	NA	NA	NA	NA	0.20	0.11	0.050	NA	NA	NA	0.13
BC_2F_6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.045
BC_3F_8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Remote plasma cleaning:													
$1–U_i$	NA	NA	NA	NA	NA	NA	NA	NA	0.018	NA	NA	NA	NA
BCF_4	NA	NA	NA	NA	NA	NA	NA	NA	0.015	NA	NA	NA	NA
BC_2F_6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC_3F_8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
In situ thermal cleaning:													
$1–U_i$	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BCF_4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC_2F_6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC_3F_8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes: NA = Not applicable; i.e., there are no applicable default emission factor measurements for this gas. This does not necessarily imply that a particular gas is not used in or emitted from a particular process sub-type or process type.

[78 FR 68222, November 13, 2013]

Table I–4 to Subpart I of Part 98–Default Emission Factors ($1-U_{ij}$) for Gas Utilization Rates (U_{ij}) and By-Product Formation Rates (B_{ijk}) for Semiconductor Manufacturing for 300 mm and 450 mm Wafer Size

Process type/sub-type	Process gas i											
	CF_4	C_2F_6	CHF_3	CH_2F_2	CH_3F	C_3F_8	C_4F_8	NF_3	SF_6	C_4F_6	C_5F_8	C_4F_8O
ETCHING/WAFER CLEANING												
$1-U_i$	0.65	0.80	0.42	0.21	0.33	0.30	0.18	0.15	0.32	0.15	0.10	NA
BCF_4	NA	0.21	0.095	0.049	0.045	0.21	0.045	0.046	0.040	0.059	0.11	NA
BC_2F_6	0.079	NA	0.064	0.052	0.00087	0.18	0.031	0.045	0.044	0.074	0.083	NA
BC_4F_6	NA	NA	0.00010	NA	NA	NA	0.018	NA	NA	NA	NA	NA
BC_4F_8	0.00063	NA	0.00080	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC_3F_8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00012	NA
$BCHF_3$	0.011	NA	NA	0.050	0.0057	0.012	0.027	0.025	0.0037	0.019	0.0069	NA
BCH_2F_2	NA	NA	0.0036	NA	0.0023	NA	0.0015	0.00086	0.000029	0.000030	NA	NA
BCH_3F	0.0080	NA	0.0080	0.0080	NA	0.00073	NA	0.0080	NA	NA	NA	NA
Chamber Cleaning												
In situ plasma cleaning:												
$1-U_i$	NA	NA	NA	NA	NA	NA	NA	0.23	NA	NA	NA	NA
BCF_4	NA	NA	NA	NA	NA	NA	NA	0.037	NA	NA	NA	NA
BC_2F_6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC_3F_8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Remote Plasma Cleaning:												
$1-U_i$	NA	NA	NA	NA	NA	0.063	NA	0.018	NA	NA	NA	NA
BCF_4	NA	NA	NA	NA	NA	NA	NA	0.075	NA	NA	NA	NA
BC_2F_6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC_3F_8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
In Situ Thermal Cleaning:												
$1-U_i$	NA	NA	NA	NA	NA	NA	NA	0.28	NA	NA	NA	NA
BCF_4	NA	NA	NA	NA	NA	NA	NA	0.010	NA	NA	NA	NA
BC_2F_6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC_3F_8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes: NA = Not applicable; i.e., there are no applicable default emission factor measurements for this gas. This does not necessarily imply that a particular gas is not used in or emitted from a particular process sub-type or process type.

[78 FR 68223, November 13, 2013]

Table I–5 to Subpart I of Part 98—Default Emission Factors ($1–U_{ij}$) for Gas Utilization Rates (U_{ij}) and By-Product Formation Rates (B_{ijk}) for MEMS Manufacturing

Process type factors	Process gas i											
	CF_4	C_2F_6	CHF_3	CH_2F_2	C_3F_8	$c\text{-}C_4F_8$	NF_3 Remote	NF_3	SF_6	C_4F_{6a}	C_5F_{8a}	$C_4F_8O_a$
Etch $1–U_i$	0.7	[1]0.4	[1]0.4	[1]0.06	NA	[1]0.2	NA	0.2	0.2	0.1	0.2	NA
Etch BCF_4	NA	[1]0.4	[1]0.07	[1]0.08	NA	0.2	NA	NA	NA	[1]0.3	0.2	NA
Etch BC_2F_6	NA	NA	NA	NA	NA	0.2	NA	NA	NA	[1]0.2	0.2	NA
CVD Chamber Cleaning $1–U_i$	0.9	0.6	NA	NA	0.4	0.1	0.02	0.2	NA	NA	0.1	0.1
CVD Chamber Cleaning BCF_4	NA	0.1	NA	NA	0.1	0.1	[2]0.02	[2]0.1	NA	NA	0.1	0.1
CVD Chamber Cleaning BC_3F_8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.4

Notes: NA = Not applicable; i.e., there are no applicable default emission factor measurements for this gas. This does not necessarily imply that a particular gas is not used in or emitted from a particular process sub-type or process type.
[1]Estimate includes multi-gas etch processes.
[2]Estimate reflects presence of low-k, carbide and multi-gas etch processes that may contain a C-containing fluorinated GHG additive.

[75 FR 74831, December 1, 2010, as amended at 78 FR 68225, November 13, 2013]

Table I–6 to Subpart I of Part 98—Default Emission Factors ($1–U_{ij}$) for Gas Utilization Rates (U_{ij}) and By-Product Formation Rates (B_{ijk}) for LCD Manufacturing

Process type factors	Process Gas i								
	CF_4	C_2F_6	CHF_3	CH_2F_2	C_3F_8	$c\text{-}C_4F_8$	NF_3 Remote	NF_3	SF_6
Etch $1–U_i$	0.6	NA	0.2	NA	NA	0.1	NA	NA	0.3
Etch BCF_4	NA	NA	0.07	NA	NA	0.009	NA	NA	NA
Etch $BCHF_3$	NA	NA	NA	NA	NA	0.02	NA	NA	NA
Etch BC_2F_6	NA	NA	0.05	NA	NA	NA	NA	NA	NA
CVD Chamber Cleaning $1–U_i$	NA	NA	NA	NA	NA	NA	0.03	0.3	0.9

Notes: NA = Not applicable; i.e., there are no applicable default emission factor measurements for this gas. This does not necessarily imply that a particular gas is not used in or emitted from a particular process sub-type or process type.

[75 FR 74831, December 1, 2010, as amended at 78 FR 68225, November 13, 2013]

Table I–7 to Subpart I of Part 98—Default Emission Factors ($1–U_{ij}$) for Gas Utilization Rates (U_{ij}) and By-Product Formation Rates (B_{ijk}) for PV Manufacturing

	Process Gas i								
Process type factors	**CF_4**	**C_2F_6**	**CHF_3**	**CH_2F_2**	**C_3F_8**	**c-C_4F_8**	**NF_3 Remote**	**NF_3**	**SF_6**
Etch $1–U_i$	0.7	0.4	0.4	NA	NA	0.2	NA	NA	0.4
Etch BCF_4	NA	0.2	NA	NA	NA	0.1	NA	NA	NA
Etch BC_2F_6	NA	NA	NA	NA	NA	0.1	NA	NA	NA
CVD Chamber Cleaning $1–U_i$	NA	0.6	NA	NA	0.1	0.1	NA	0.3	0.4
CVD Chamber Cleaning BCF_4	NA	0.2	NA	NA	0.2	0.1	NA	NA	NA

Notes: NA = Not applicable; i.e., there are no applicable default emission factor measurements for this gas. This does not necessarily imply that a particular gas is not used in or emitted from a particular process sub-type or process type.

[75 FR 74831, December 1, 2010, as amended at 78 FR 68226, November 13, 2013]

Table I–8 to Subpart I of Part 98—Default Emission Factors ($1–U_{N2O\ j}$) for N_2O Utilization ($U_{N2O\ j}$)

Process type factors	N_2O
CVD $1–U_i$	0.8
Other Manufacturing Process $1–U_i$	1.0

[75 FR 74831, December 1, 2010]

Table I-9 to Subpart I of Part 98—Methods and Procedures for Conducting Emissions Tests for Stack Systems

For each stack system for which you use the "stack test method" to calculate annual emissions...	You must...	Using...
For each fluorinated GHG	Measure the concentration in the stack system.	Method 320 at 40 CFR part 63, appendix A or ASTM D6348-03[a] (incorporated by reference, see § 98.7). Conduct the test run for a minimum of 8 hours for each stack system.
	Select sampling port locations and the number of traverse points.	Method 1 or 1A at 40 CFR part 60, appendix A-1.
	Determine gas velocity and volumetric flow rate.	Method 2, 2A, 2C, 2D, 2F, or 2G at 40 CFR part 60, appendix A-1 and A-2.
	Determine gas molecular weight.	Method 3, 3A, or 3B at 40 CFR part 60, appendix A-2 using the same sampling site and time as fluorinated GHG sampling.
	Measure gas moisture content.	Method 4 at 40 CFR part 60, appendix A-3, or using FTIR[b].

[a] Reporters may use ASTM D6348-03 (incorporated by reference, see § 98.7) as an alternative to Method 320 at 40 CFR part 63, appendix A, with the following additional requirements: (1) The test plan preparation and implementation in the Annexes to ASTM D6348-03, Sections A1 through A8 are mandatory; and (2) In ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent recovery (%R) must be determined for each target analyte (Equation A5.5). The reporter must also follow Section 4.1 of ASTM D6348-03 to ensure F-GHG remain in the gas phase. In order for the test data to be acceptable for a compound, the percent recovery must be between 70 and 130 percent. If the percent recovery does not meet this criterion for a target compound, the test data are not acceptable for that compound and the test must be repeated for that analyte (i.e., the sampling and/or analytical procedure should be adjusted before a retest). The percent recovery value for each compound must be reported in the test report, required under 40 CFR 98.94(j)(4), and all field measurements must be corrected with the calculated percent recovery value for that compound by using the following equation: Reported Result = Measured Concentration in the stack x (100/% R).

[b] Extractive FTIR is an acceptable method, in lieu of Method 4 at 40 CFR part 60 appendix A, of determining the volumetric concentrations of moisture in semiconductor stack gas streams. The spectral calibrations employed should bracket the anticipated range of optical depths (H_2O concentration in parts per million multiplied by FTIR sample cell path length) measured in the field for moisture saturated (relative humidity approximately 100 percent) air streams at temperatures characterized via Method 2 at 40 CFR part 60 appendix A, within the stack. The HITRAN molecular spectroscopic database is an

example of a widely used international standard of IR absorption parameters that provide accurate H_2O FTIR calibrations at atmospheric conditions. Field measurements should be verified to be in line with moisture saturated wet scrubber exhaust concentrations at measured temperatures. Field measurements at saturated conditions should be verified to be consistent with published water vapor pressure curves at the current stack temperatures (Perry, R.H. and D.W. Green. Perry's Chemical Engineer's Handbook (8th Edition). McGraw-Hill Publishing Company, Inc. New York, New York. 2008). For unsaturated conditions, field measurements should be verified using a single point verification of the FTIR moisture reading using Method 4 at 40 CFR part 60 appendix A, or a NIST traceable hygrometer accurate to +/- 2 percent relative humidity. The FTIR moisture reading shall agree within 10 percent of the moisture measurement obtained using Method 4 at 40 CFR part 60 appendix A or a NIST traceable hygrometer.

[78 FR 68227, November 13, 2013]

Table I–10 to Subpart I of Part 98–Maximum Field Detection Limits Applicable to Fluorinated GHG Concentration Measurements for Stack Systems

Fluorinated GHG Analyte	Maximum Field Detection Limit (ppbv)
CF_4	20
C_2F_6	20
C_3F_8	20
C_4F_6	20
C_5F_8	20
$c\text{-}C_4F_8$	20
CH_2F_2	40
CH_3F	40
CHF_3	20
NF_3	20
SF_6	4
Other fully fluorinated GHGs	20
Other fluorinated GHGs	40

ppbv – Parts per billion by volume

[78 FR 68228, November 13, 2013]

Table I–11 to Subpart I of Part 98–Default Emission Factors (1–U_{ij}) for Gas Utilization Rates (U_{ij}) and By-Product Formation Rates (B_{ijk}) for Semiconductor Manufacturing for use with the Stack Test Method (150 mm and 200 mm wafers)

All Processes	Process Gas i													
	CF_4	C_2F_6	CHF_3	CH_2F_2	C_2HF_5	CH_3F	C_3F_8	C_4F_8	NF_3	NF_3 Remote	SF_6	C_4F_6	C_5F_8	C_4F_8O
1-U_i	0.85	0.56	0.50	0.13	0.064	0.51	0.40	0.13	0.16	0.018	0.55	0.17	0.072	0.14
BCF_4	NA	0.19	0.085	0.079	0.077	NA	0.20	0.11	0.045	0.015	0.13	0.13	NA	0.13
BC_2F_6	0.046	NA	0.030	0.025	0.024	0.0034	NA	0.037	0.025	NA	0.11	0.11	0.014	0.045
BC_4F_6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC_4F_8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC_3F_8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC_5F_8	0.0012	NA	0.0012	NA	NA	NA	NA	0.0086	NA	NA	NA	NA	NA	NA
$BCHF_3$	0.10	0.047	NA	0.049	NA	NA	NA	0.040	NA	NA	0.0012	0.066	0.0039	NA

Notes: NA = Not applicable; i.e., there are no applicable emission factor measurements for this gas. This does not necessarily imply that a particular gas is not used in or emitted from a particular process sub-type or process type.

[78 FR 68229, November 11, 2013]

Table I–12 to Subpart I of Part 98–Default Emission Factors (1–U_{ij}) for Gas Utilization Rates (U_{ij}) and By-Product Formation Rates (B_{ijk}) for Semiconductor Manufacturing for use with the Stack Test Method (300 mm and 450 mm Wafer Sizes)

All Processes	Process Gas i												
	CF_4	C_2F_6	CHF_3	CH_2F_2	CH_3F	C_3F_8	C_4F_8	NF_3	NF_3 Remote	SF_6	C_4F_6	C_5F_8	C_4F_8O
1-U_i	0.65	0.80	0.42	0.21	0.33	0.20	0.18	0.20	0.018	0.32	0.15	0.10	NA
BCF_4	NA	0.21	0.095	0.049	0.045	0.21	0.045	0.040	0.075	0.040	0.059	0.11	NA
BC_2F_6	0.079	NA	0.064	0.052	0.00087	0.18	0.031	0.045	NA	0.044	0.074	0.083	NA
BC_4F_6	NA	NA	0.00010	NA	NA	NA	0.018	NA	NA	NA	NA	NA	NA
BC_4F_8	0.00063	NA	0.00080	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC_3F_8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00012	NA
BCH_2F_2	NA	NA	0.0036	NA	0.0023	NA	0.0015	0.00086	NA	0.000029	0.000030	NA	NA
BCH_3F	0.0080	NA	0.0080	0.0080	NA	0.00073	NA	0.0080	NA	NA	NA	NA	NA
$BCHF_3$	0.011	NA	NA	0.050	0.0057	0.012	0.027	0.025	NA	0.0037	0.019	0.0069	NA

Notes: NA = Not applicable; i.e., there are no applicable emission factor measurements for this gas. This does not necessarily imply that a particular gas is not used in or emitted from a particular process sub-type or process type.

[78 FR 68230, November 13, 2013]

Table I–13 to Subpart I of Part 98—Default Emission Factors ($1–U_{ij}$) for Gas Utilization Rates (U_{ij}) and By-Product Formation Rates (B_{ijk}) for LCD Manufacturing for use with the Stack Test Method

Process Gas (i)	Process Gas i								
	CF_4	C_2F_6	CHF_3	CH_2F_2	C_3F_8	$c\text{-}C_4F_8$	NF_3 Remote	NF_3	SF_6
$1–U_i$	0.6	NA	0.2	NA	NA	0.1	0.03	0.3	0.6
BCF_4	NA	NA	0.07	NA	NA	0.009	NA	NA	NA
$BCHF_3$	NA	NA	NA	NA	NA	0.02	NA	NA	NA
BC_2F_6	NA	NA	0.05	NA	NA	NA	NA	NA	NA
BC_3F_8	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes: NA = Not applicable; i.e., there are no applicable emission factor measurements for this gas. This does not necessarily imply that a particular gas is not used in or emitted from a particular process sub-type or process type.

[78 FR 68231, November 13, 2013]

Table I–14 to Subpart I of Part 98—Default Emission Factors ($1–U_{ij}$) for Gas Utilization Rates (U_{ij}) and By-Product Formation Rates (B_{ijk}) for PV Manufacturing for use with the Stack Test Method

Process Gas (i)	Process Gas i								
	CF_4	C_2F_6	CHF_3	CH_2F_2	C_3F_8	$c\text{-}C_4F_8$	NF_3 Remote	NF_3	SF_6
$1–U_i$	0.7	0.6	0.4	NA	0.4	0.2	NA	0.2	0.4
BCF_4	NA	0.2	NA	NA	0.2	0.1	NA	0.05	NA
BC_2F_6	NA	NA	NA	NA	NA	0.1	NA	NA	NA
BC_3F_8	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes: NA = Not applicable; i.e., there are no applicable emission factor measurements for this gas. This does not necessarily imply that a particular gas is not used in or emitted from a particular process sub-type or process type.

[78 FR 68232, November 13, 2013]

Table I–15 to Subpart I of Part 98–Default Emission Factors ($1–U_{ij}$) for Gas Utilization Rates (U_{ij}) and By-Product Formation Rates (B_{ijk}) for MEMS Manufacturing for use with the Stack Test Method

All Processes	Process Gas i											
	CF_4	C_2F_6	CHF_3	CH_2F_2	C_3F_8	$c\text{-}C_4F_8$	NF_3 Remote	NF_3	SF_6	C_4F_6	C_5F_8	C_4F_8O
$1\text{-}U_i$	0.9	0.6	0.4	0.1	0.4	0.1	0.2	0.2	0.2	0.1	0.1	0.1
BCF_4	NA	0.2	0.07	0.08	0.1	0.1	[a]0.02	0.09	NA	0.3	0.1	0.1
BC_2F_6	NA	NA	NA	NA	NA	0.04	NA	NA	NA	0.2	0.04	NA
BC_3F_8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes: NA = Not applicable; i.e., there are no applicable emission factor measurements for this gas. This does not necessarily imply that a particular gas is not used in or emitted from a particular process sub-type or process type.

[a] Estimate reflects presence of low-k, carbide and multi-gas etch processes that may contain a C-containing fluorinated GHG additive.

[78 FR 68233, November 13, 2013]

Table I–16 to Subpart I of Part 98—Default Emission Destruction or Removal Efficiency (DRE) Factors For Electronics Manufacturing

Manufacturing Type/Process Type/Gas	Default DRE
MEMS, LCDs, and PV Manufacturing	60%
Semiconductor Manufacturing	
Plasma Etch/Wafer Clean Process Type	
CF_4	75%
CH_3F	97%
CHF_3	97%
CH_2F_2	97%
C_2F_6	97%
C_3F_8	97%
C_4F_6	97%
C_4F_8	97%
C_5F_8	97%
SF_6	97%
NF_3	96%
All other carbon-based plasma etch/wafer clean fluorinated GHG	60%
Chamber Clean Process Type	
NF_3	88%
All other chamber clean fluorinated GHG	60%
N_2O Processes	
CVD and all other N_2O-using processes	60%

[78 FR 68234, November 13, 2013]

Table I–17 to Subpart I of Part 98—Expected and Possible By-products For Electronics Manufacturing

For each stack system for which you use the "stack test method" to calculate annual emissions, you must measure the following:	If emissions are detected intermittently, use the following procedures:	If emissions are not detected, use the following procedures:
Expected By-products: CF_4 C_2F_6 CHF_3 CH_2F_2 CH_3F	Use the measured concentration for "X_{ksm}" in Equation I-18 when available and use one-half of the field detection limit you determined for the fluorinated GHG according to § 98.94(j)(2) for the value of "X_{ksm}" when the fluorinated GHG is not detected.	Use one-half of the field detection limit you determined for the fluorinated GHG according to § 98.94(j)(2) for the value of "X_{ksm}" in Equation I-18.
Possible By-products C_3F_8 C_4F_6 $c\text{-}C_4F_8$ C_5F_8	Use the measured concentration for "X_{ksm}" in Equation I-18 when available and use one-half of the field detection limit you determined for the fluorinated GHG according to § 98.94(j)(2) for the value of "X_{ksm}" when the fluorinated GHG is not detected.	Assume zero emissions for that fluorinated GHG for the tested stack system.

[78 FR 68234, November 13, 2013]