

## Subpart OO - Only for Facilities that Produce F-GHGs and/or N<sub>2</sub>O

### Worksheet Instructions:

Please identify the processes that produce or transform f-GHGs or Nitrous Oxide at the identification picklists presented on the Products and Onsite Transformation pages. Ple

### Version:

R.05

### External Links:

Subpart OO Resources Page: <http://www2.epa.gov/ghgreporting/subpart-oo-su>

Reporting Form Help Content: <http://www.ccdsupport.com/confluence/display/h>

Optional Calculation Spreadsheet: <http://www.ccdsupport.com/confluence/display/h>

### Workbook Navigation:

[Part 1- Facility Information](#)

[Part 2 - Production & Transformation Process Information](#)

[Part 2a - Production Process Information](#)

[Part 2b - Transformation Process Information](#)

## Part 1 - Facility Information

Instructions: Complete the following facility information.

Facility Name:	
GHGRP ID:	
Reporting Period:	

## Part 2 - Production/Transformation Process Information

Instructions: Identify and describe each production/transformation process at the again on the Products tab when you enter product information.

---

<b>Unique Identifier</b> <b>[98.416(a)]</b>	<b>Is the unique identifier associated with an F-GHG and/or N2O production process, an F-GHG and/or N2O transformation process or both?</b>
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	

29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	

)

Updated:

1/30/2018



facility in Part 2 of this page. Process Identifiers entered in Column B will be used to identify the facility. Do not skip rows.



[Suppliers-industrial-greenhouse-gases](#)

[elp/Reporting+Form+Instructions](#)

[elp/Optional+Calculation+Spreadsheet+Instructions](#)



[Part 3 - On-Site Destruction Information](#)

[Part 4 - Off-Site Transformation Information](#)

[Part 5 - Off-Site Destruction Information](#)



production facility. Each identifier entered in Column B must be unique.





used as the basis for the process

ue. These identifiers will be referenced







## Subpart OO - Only for Facilities that Produce F-GHG and/or

<b>Worksheet Instructions:</b>	
Please identify the f-GHG and N2O produced by processes at the facility. For each is presented in Col C. If the product in question is not present in Column C then sel f-GHG page.	
<b>Version:</b>	
R.05	
<b>External Links:</b>	
Subpart OO Resources Page:	<a href="http://www2.epa.gov/ghgreporting/subpart-oo-">http://www2.epa.gov/ghgreporting/subpart-oo-</a>
Reporting Form Help Content:	<a href="http://www.ccdsupport.com/confluence/display">http://www.ccdsupport.com/confluence/display</a>
Optional Calculation Spreadsheet:	<a href="http://www.ccdsupport.com/confluence/display">http://www.ccdsupport.com/confluence/display</a>
<b>Workbook Navigation:</b>	
<a href="#">Part 1- Facility Information</a>	
<a href="#">Part 2 - Production &amp; Transformation Process Information</a>	
<a href="#">Part 2a - Production Process Information</a>	
<a href="#">Part 2b - Transformation Process Information</a>	

### Part 2a - Production Process Information

Instructions: Identify each F-GHG and N2O produced by the process. Report t

	F-G
<b>Unique Production Process Identifier [98.416(a)]</b>	If not listed, select "Search Extended List" F-GHG not listed" and enter the information more F-GHG simultaneously, and their c the individual F-GHG constituents of the
1	
2	
3	
4	
5	
6	

7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		

52	
53	
54	
55	
56	
57	
58	
59	
60	
61	
62	
63	
64	
65	
66	
67	
68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	
81	
82	
83	
84	
85	
86	
87	
88	
89	
90	
91	
92	
93	
94	
95	
96	

97		
98		
99		
100		
101		
102		
103		
104		
105		
106		
107		
108		
109		
110		
111		
112		
113		
114		
115		
116		
117		
118		
119		
120		
121		
122		
123		
124		
125		
126		
127		
128		
129		
130		
131		
132		
133		
134		
135		
136		
137		
138		
139		
140		
141		

142		
143		
144		
145		
146		
147		
148		
149		
150		

N<sub>2</sub>O

43130

1 product identify process in Column B and the name of the product in  
lect "Search Extended List" and find the product in Column D. A comp

[suppliers-industrial-greenhouse-gases](#)  
[/help/Reporting+Form+Instructions](#)  
[/help/Optional+Calculation+Spreadsheet+Instructions](#)

[Part 3 - On-Site Destruction Information](#)  
[Part 4 - Off-Site Transformation Information](#)  
[Part 5 - Off-Site Destruction Information](#)

he production of blend components, but not the production of bl

HG	CASRN:
<p>Produced F-GHG</p> <p>' to activate column 'D' for a comprehensive list or select "Other n required in columns 'G' and 'H'. If the process produces two or concentrations in the product exceed 0.1 percent by weight, list e product in order of declining concentrations in the product [98.416(a)(1)]</p>	
[REDACTED]	
[REDACTED]	
[REDACTED]	
[REDACTED]	
[REDACTED]	
[REDACTED]	







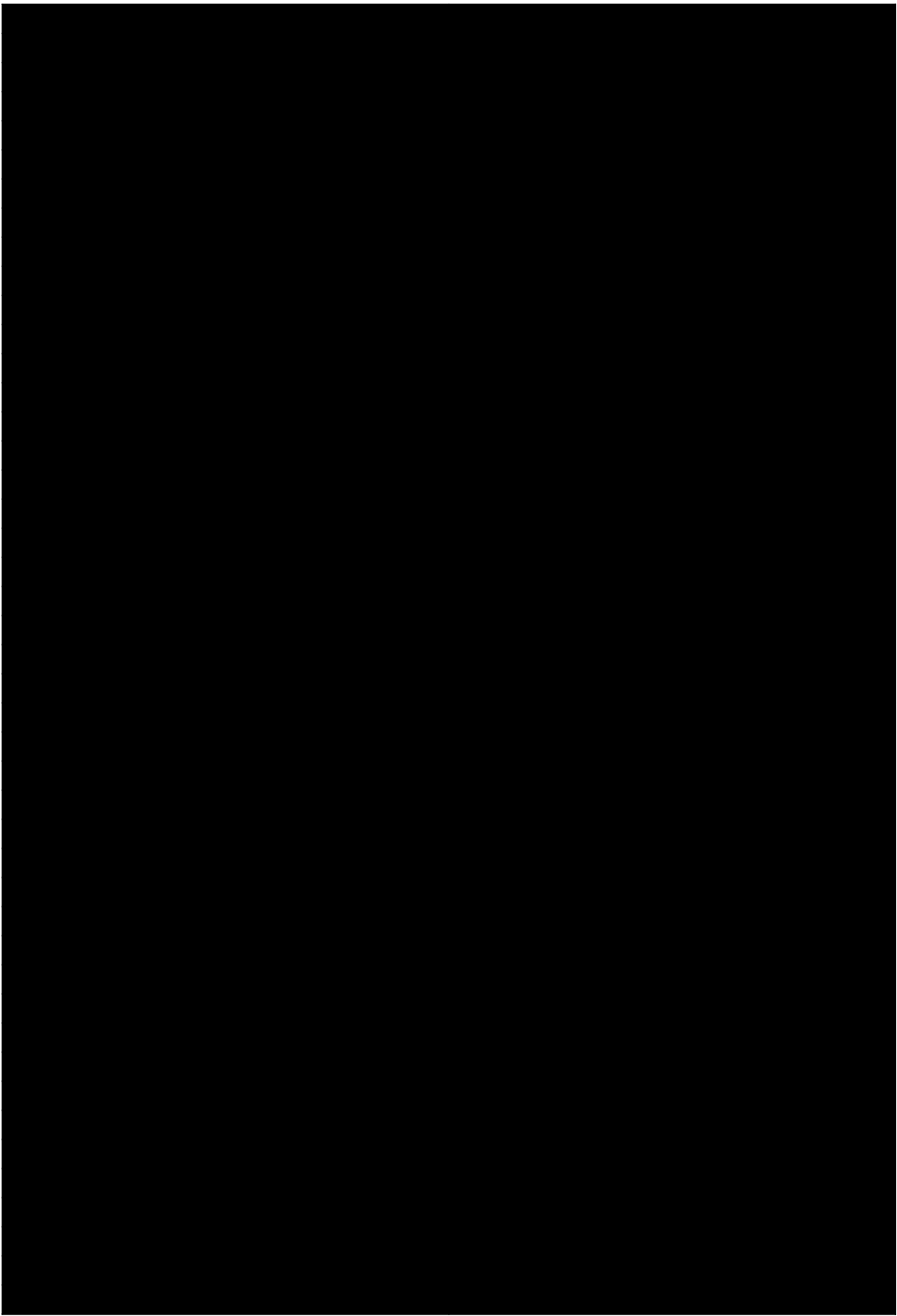


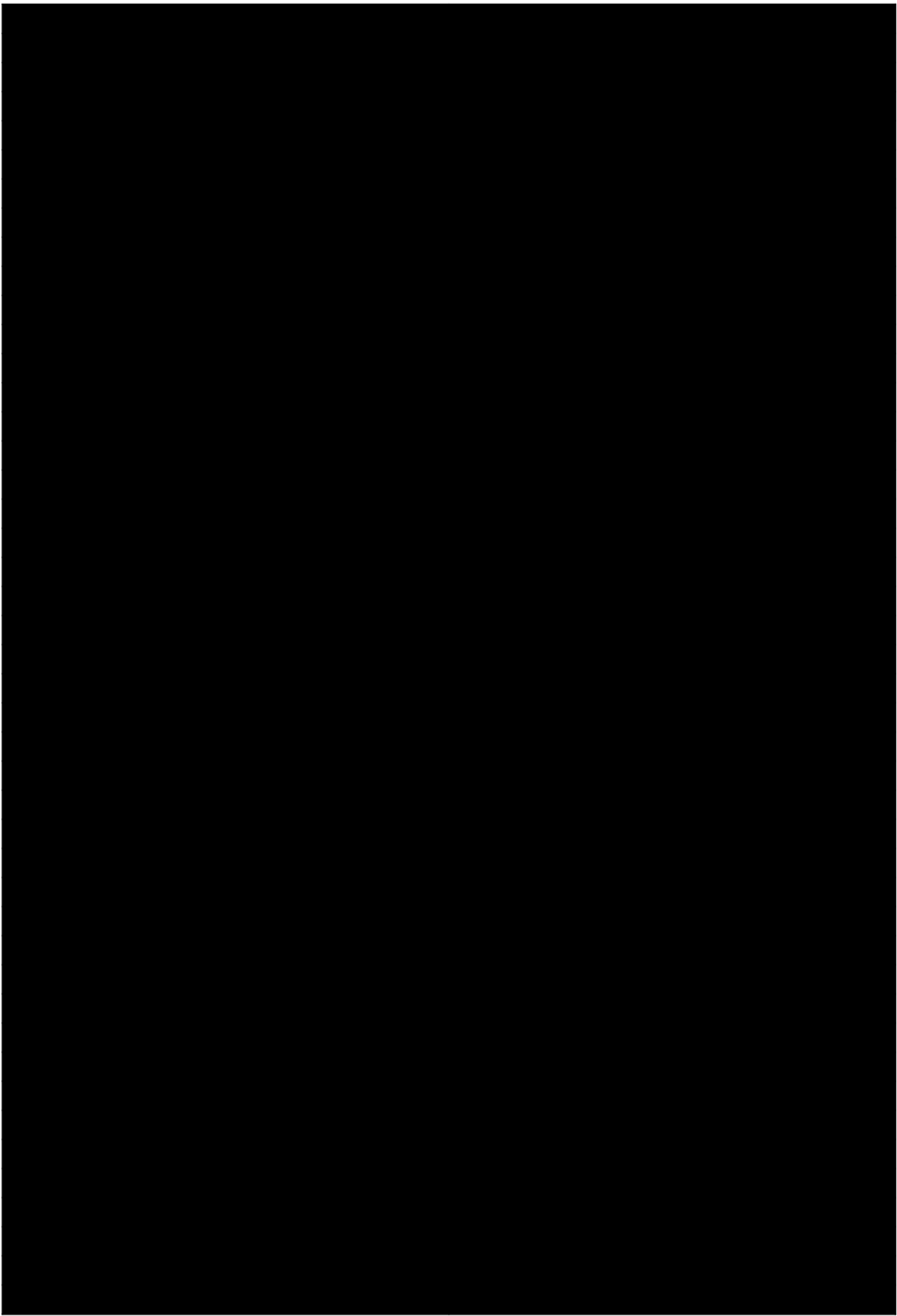


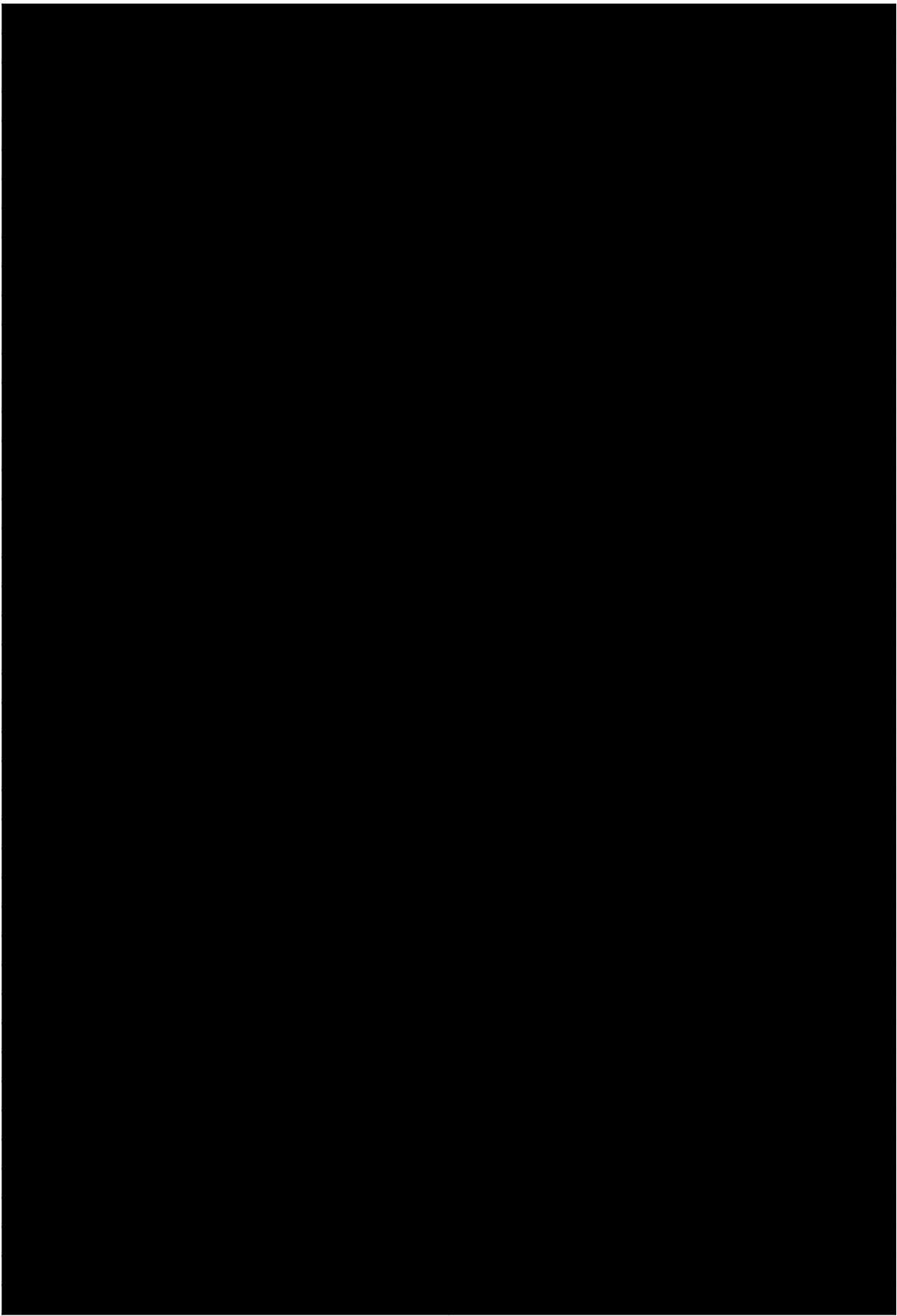
Columns C and D. A list of common f-GHG complete list of products can be found on the Listed

ends (unless the “blend” consists of F-GHG components that are simultaneously produ

Other F-GHG:	CASRN:
<p><b>If a F-GHG chemical is not listed, search EPA's Substance Registry Services (SRS) by registry number (CASRN) and enter chemical here. If a F-GHG constituent cannot be entering its name and, if available, CASRN [98.416(a)(1)]</b></p>	





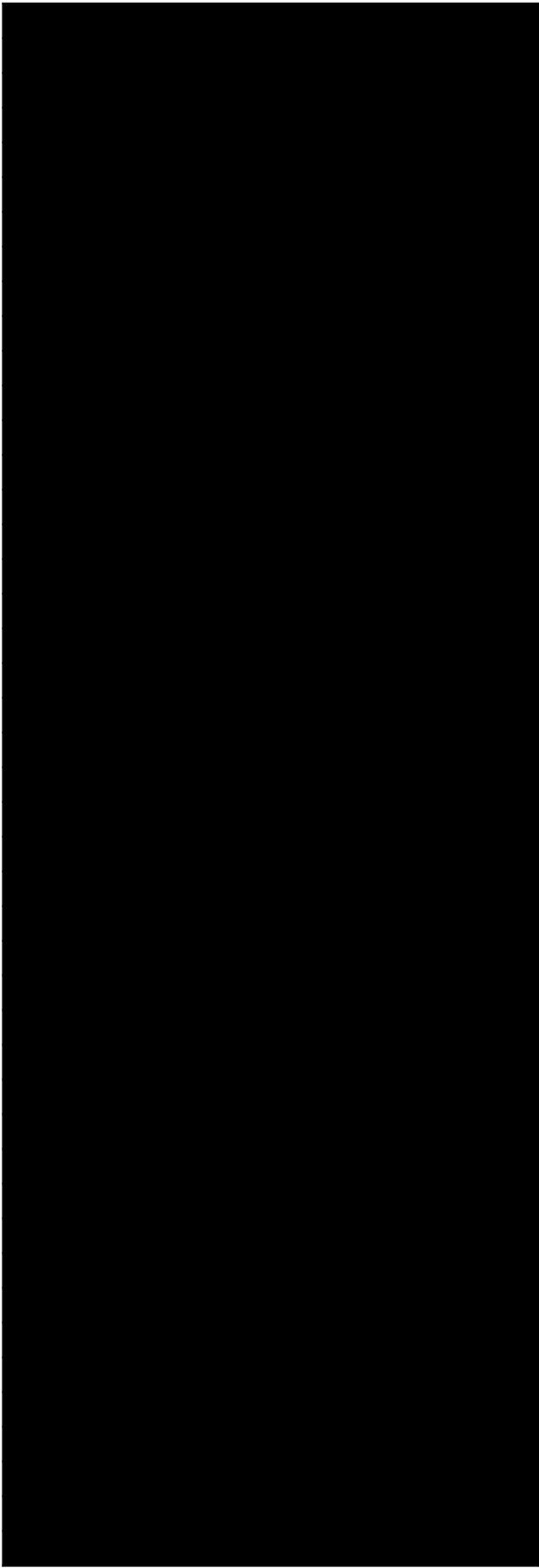


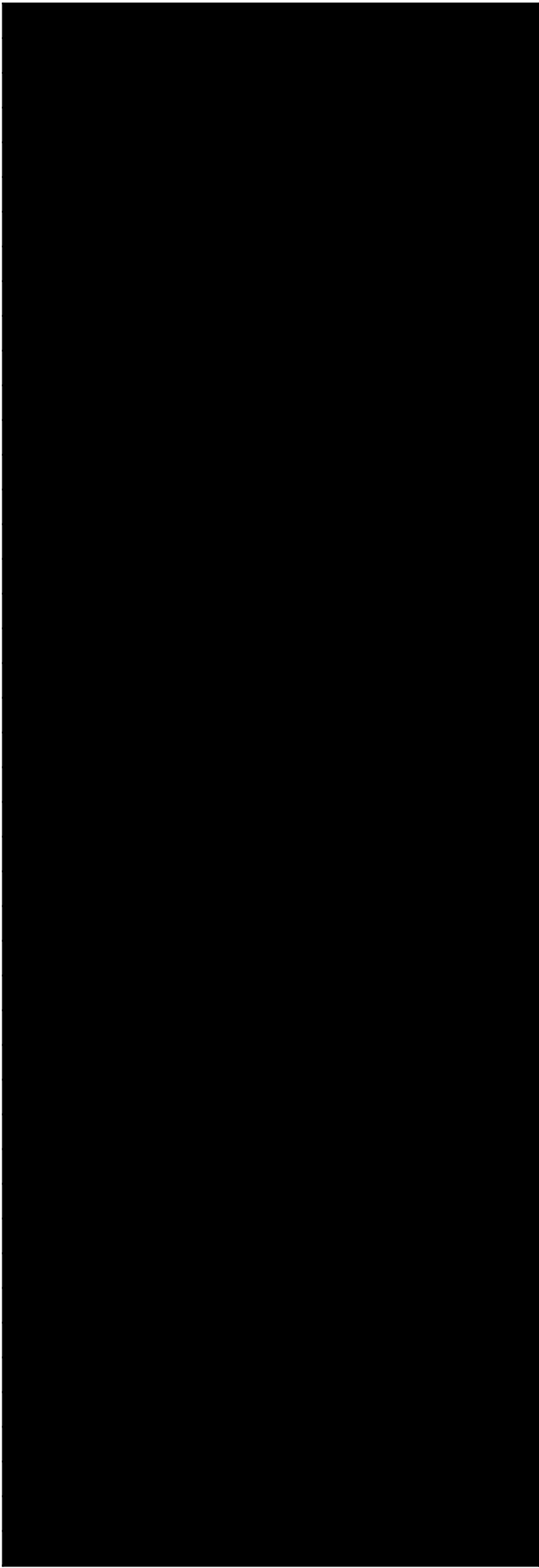


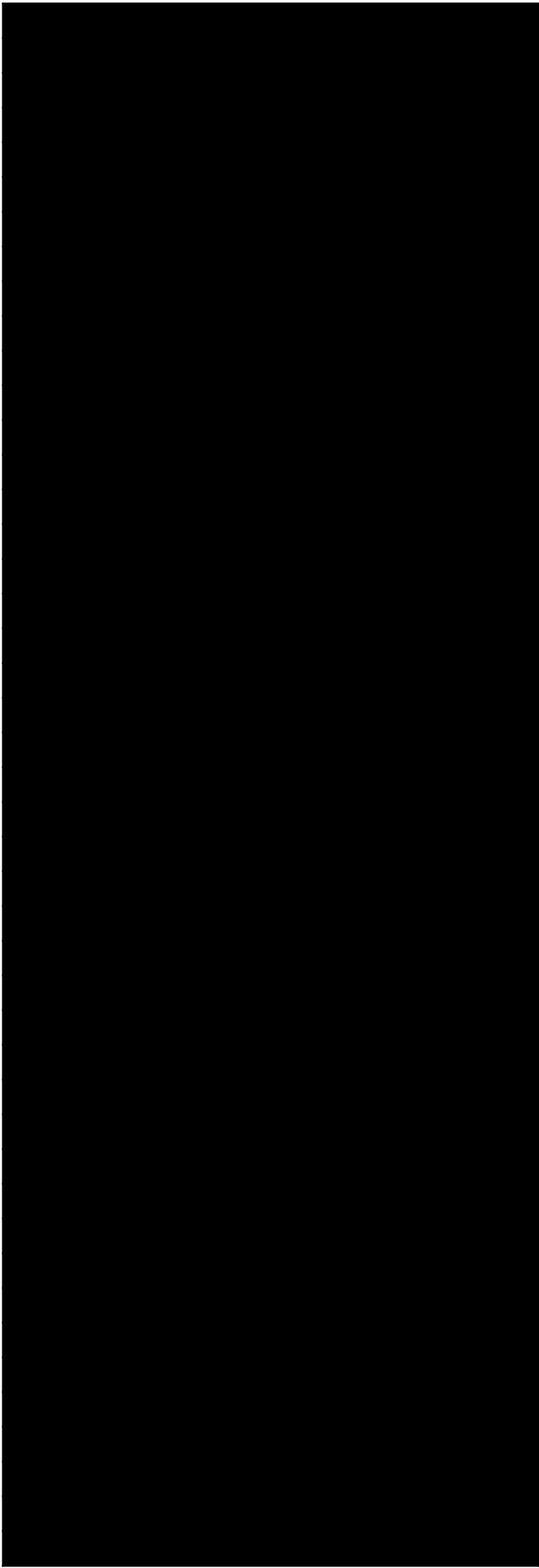


ced by the same process). Do not include is

Chemical Formula:
<p>For name and/or Chemical Abstracts Service found via SRS search, add the F-GHG by</p>









olated intermediates that are produced and transformed at the same facility. Report all signifi

<b>Specify f-GHG Category for Purposes of Estimating GWP (if necessary)</b> [98.3(c)(5)(ii)]	<b>Mass measured coming out of the production process (metric tons)</b> [98.416(a)(12)]	<b>Was the mass determined using a missing data procedure?</b> [98.416(a)(16)]



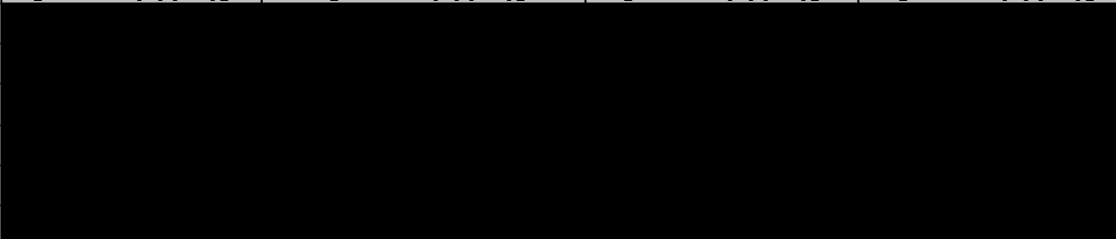


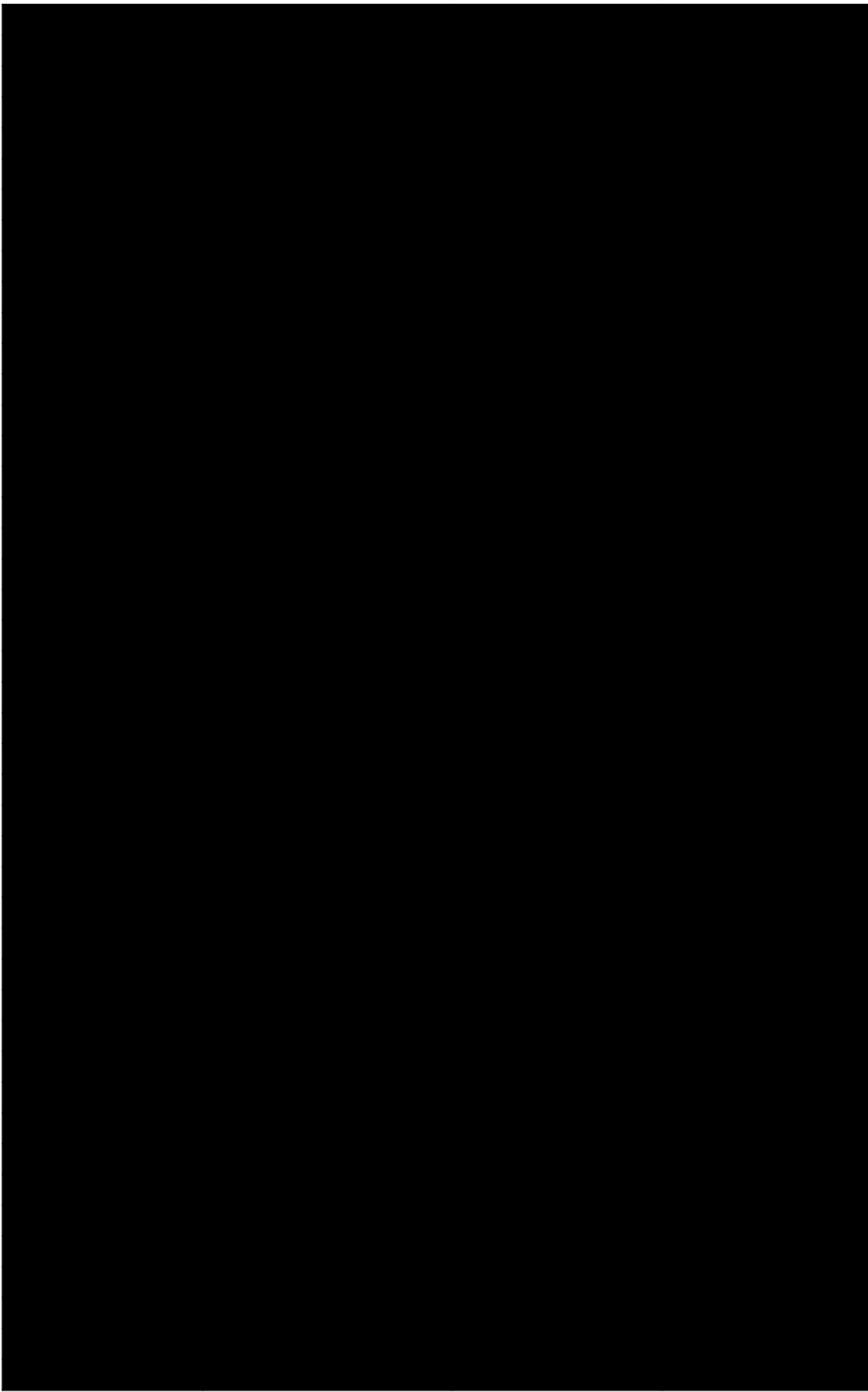


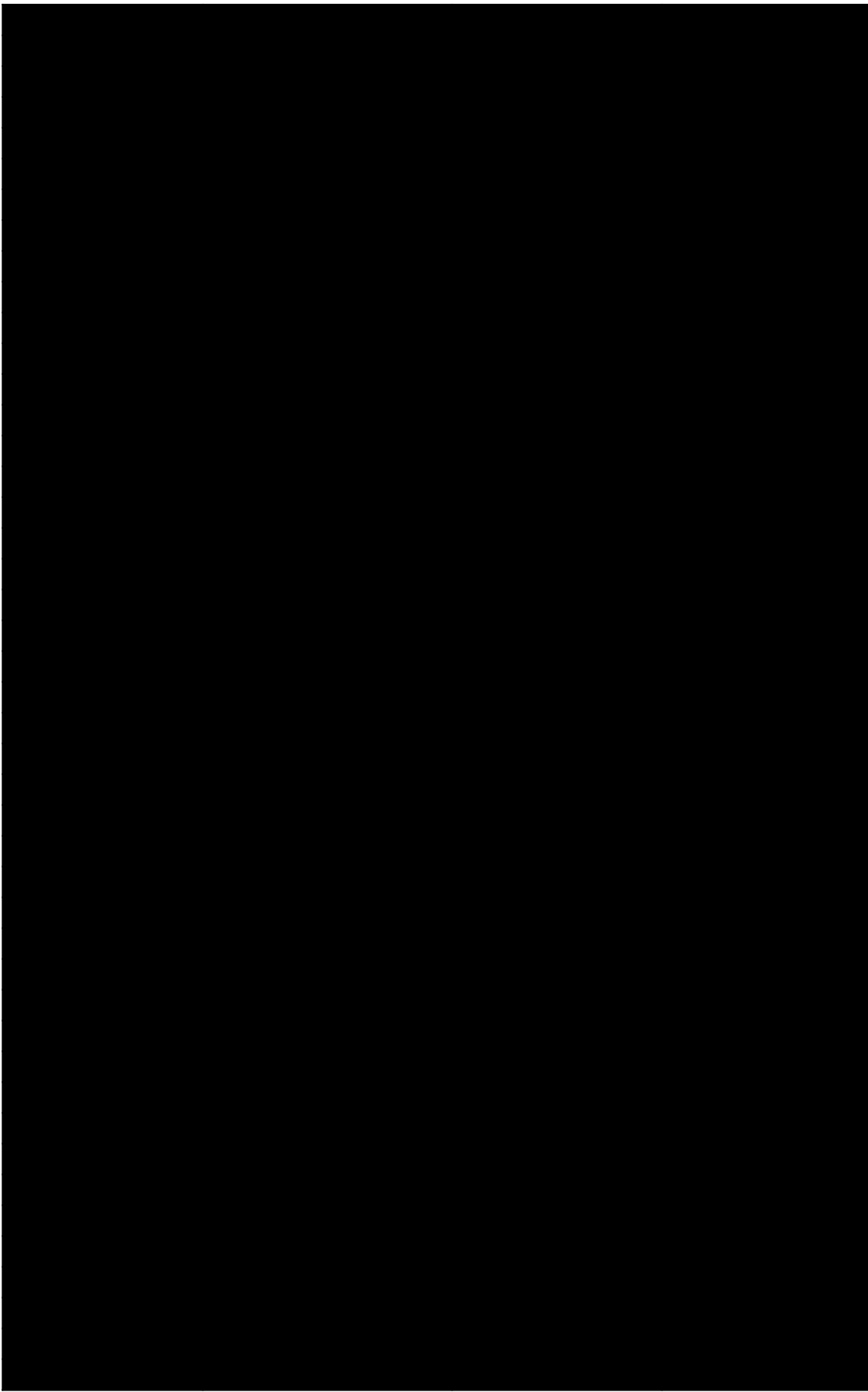


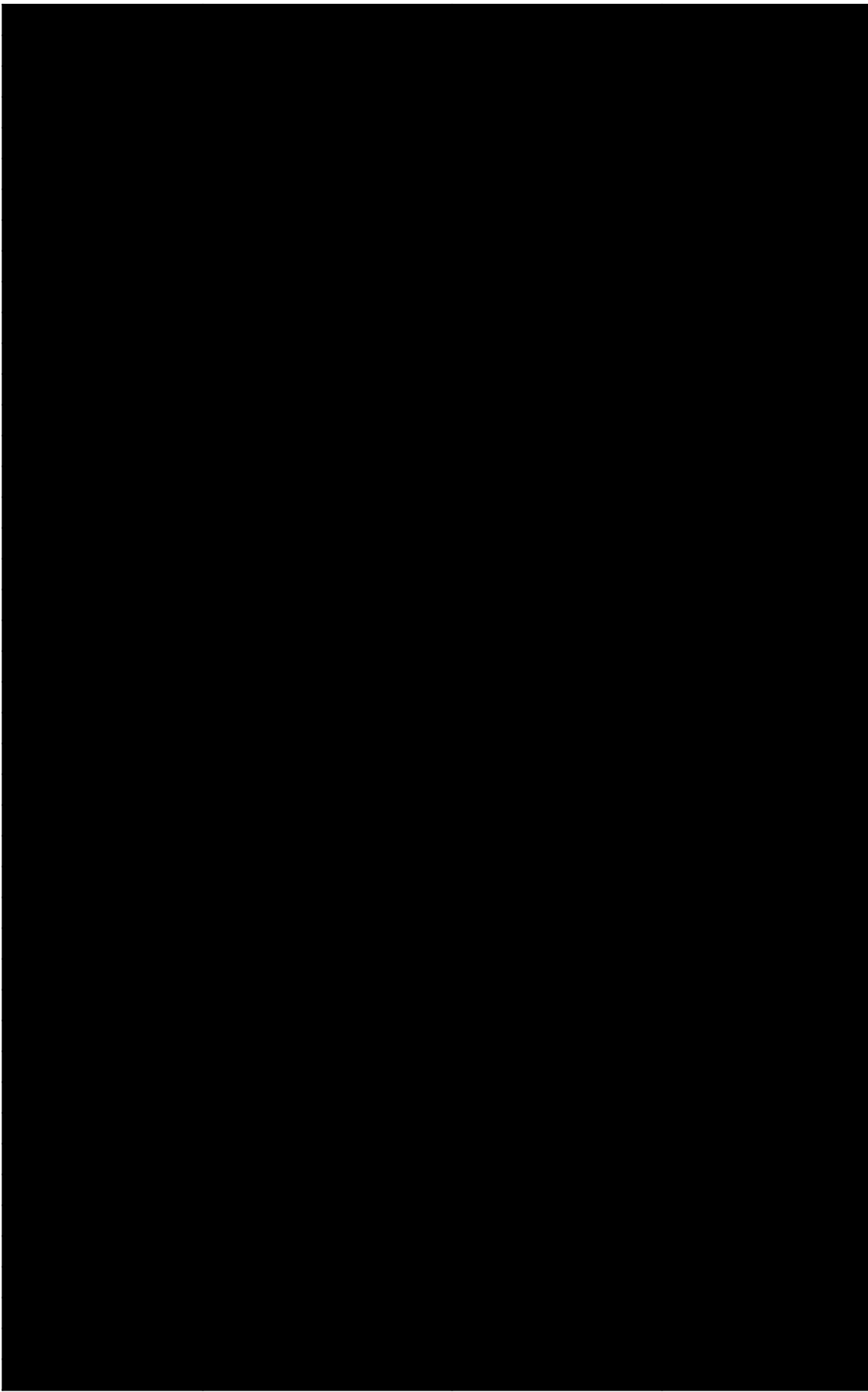


ificant figures (including fractions of a metric ton, if applicable).

<b>Mass determined using the missing data procedure (metric tons)</b> [98.416(a)(16)]	<b>Number of hours that a missing data procedure was used to measure the mass coming out of the production process</b> [98.416(a)(16)]	<b>Reason a missing data procedure was used</b> [98.416(a)(16)]	<b>Method used to estimate the missing data</b> [98.416(a)(16)]
			









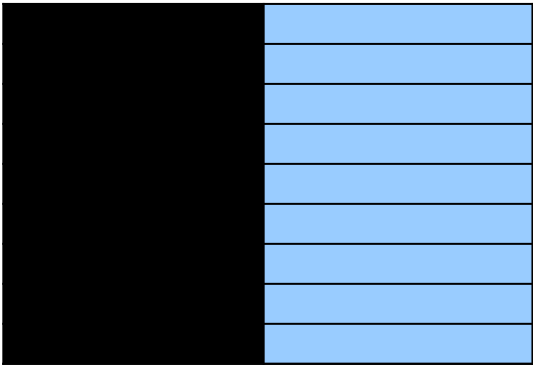
<p><b>Specify the "Other" measurement method used to determine mass (if applicable)</b></p> <p><b>[98.416(a)(16)]</b></p>	<p><b>Mass added back into the production process (metric tons)</b></p> <p><b>[98.416(a)(13)]</b></p>















## Subpart OO - Only for Facilities that Produce F-GHGs and/or N<sub>2</sub>O

<b>Worksheet Instructions:</b>	
Please identify the f-GHGs and N <sub>2</sub> O transformed at the facility. For each f-GHG or N <sub>2</sub> O transformed, the GHG is presented in Col C. If the product in question is not present in Column C then see the f-GHGs page.	
<b>Version:</b>	
R.05	
<b>External Links:</b>	
GHG_EZForm	<a href="http://www2.epa.gov/ghgreporting/subpart-oo-9">http://www2.epa.gov/ghgreporting/subpart-oo-9</a>
Reporting Form Help Content:	<a href="http://www.ccdsupport.com/confluence/display">http://www.ccdsupport.com/confluence/display</a>
Optional Calculation Spreadsheet:	<a href="http://www.ccdsupport.com/confluence/display">http://www.ccdsupport.com/confluence/display</a>
<b>Workbook Navigation:</b>	
<a href="#">Part 1- Facility Information</a>	
<a href="#">Part 2 - Production &amp; Transformation Process Information</a>	
<a href="#">Part 2a - Production Process Information</a>	
<a href="#">Part 2b - Transformation Process Information</a>	

### Part 2b - Transformation Process Information

Instructions: Identify each F-GHG and N<sub>2</sub>O transformed by the process. Do not include

	F-GHG
Unique Transformation Process Identifier [98.416(a)]	(if not listed, select "Search Extended List of F-GHG not listed" and enter the F-GHG)
1	
2	
3	
4	
5	
6	
7	
8	

9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		



transformed identify process in Column B and the name of the f-GHG or N<sub>2</sub>O  
 elect "Search Extended List" and find the product in Column D. A complete li

[suppliers-industrial-greenhouse-gases](#)  
[/help/Reporting+Form+Instructions](#)  
[/help/Optional+Calculation+Spreadsheet+Instructions](#)

[Part 3 - On-Site Destruction Information](#)  
[Part 4 - Off-Site Transformation Information](#)  
[Part 5 - Off-Site Destruction Information](#)

include isolated intermediates that are produced and transformed at the sa

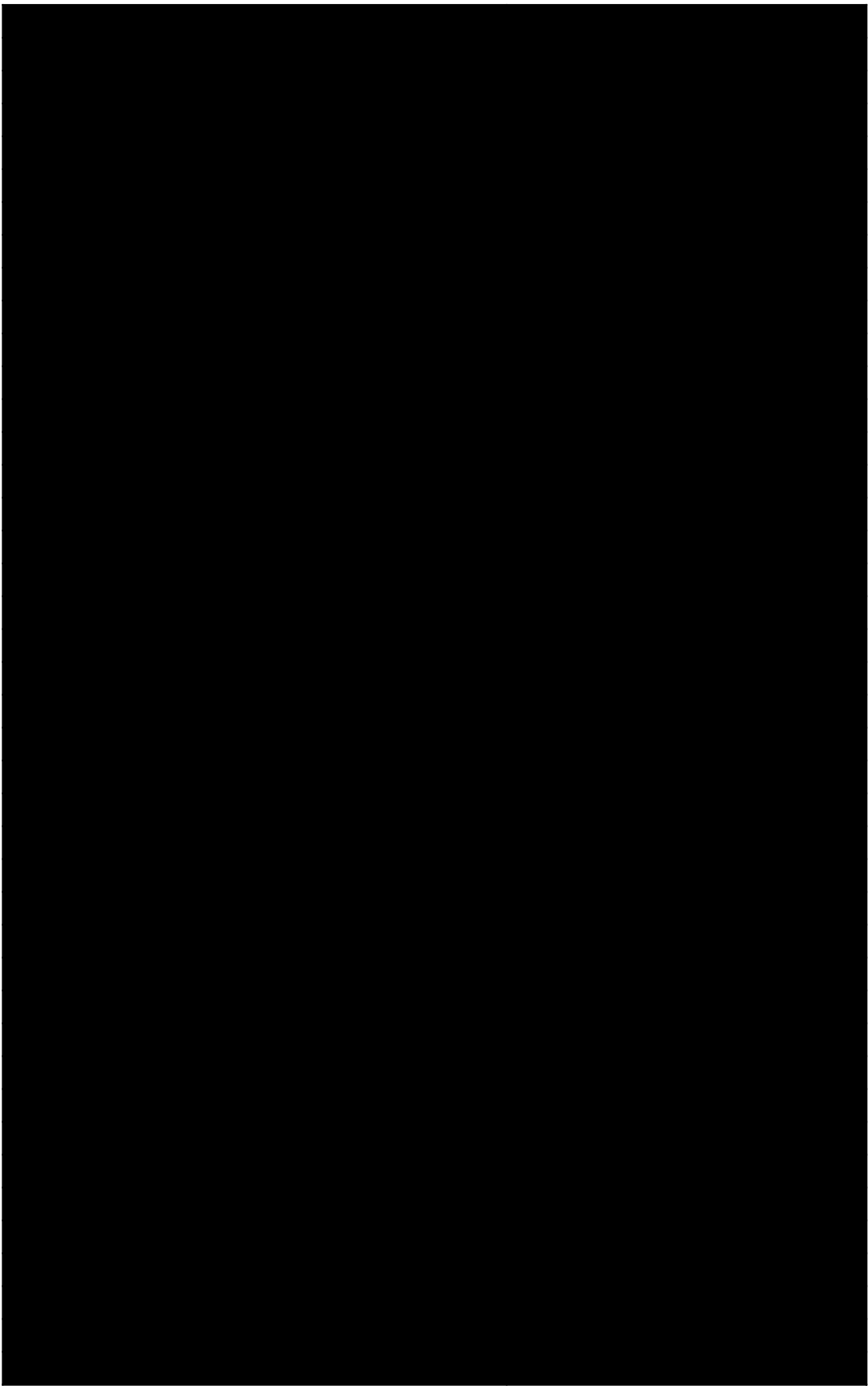
GHG	CASRN:
<p>Included F-GHG or N<sub>2</sub>O</p> <p>st" to activate column 'D' for a comprehensive list or select "Other F-            ter the information required in columns 'G' and 'H')</p> <p>[98.416(a)(2)]</p>	



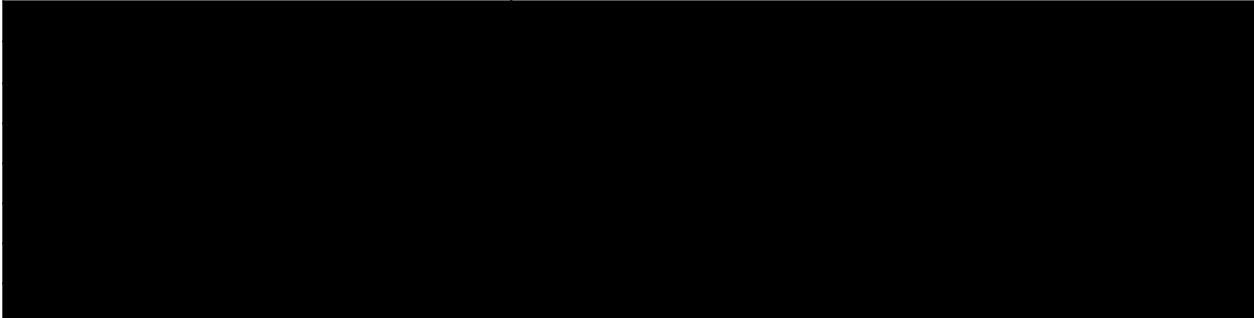
<p>in Columns C and D. A list of common f-          list of products can be found on the Listed f-</p>

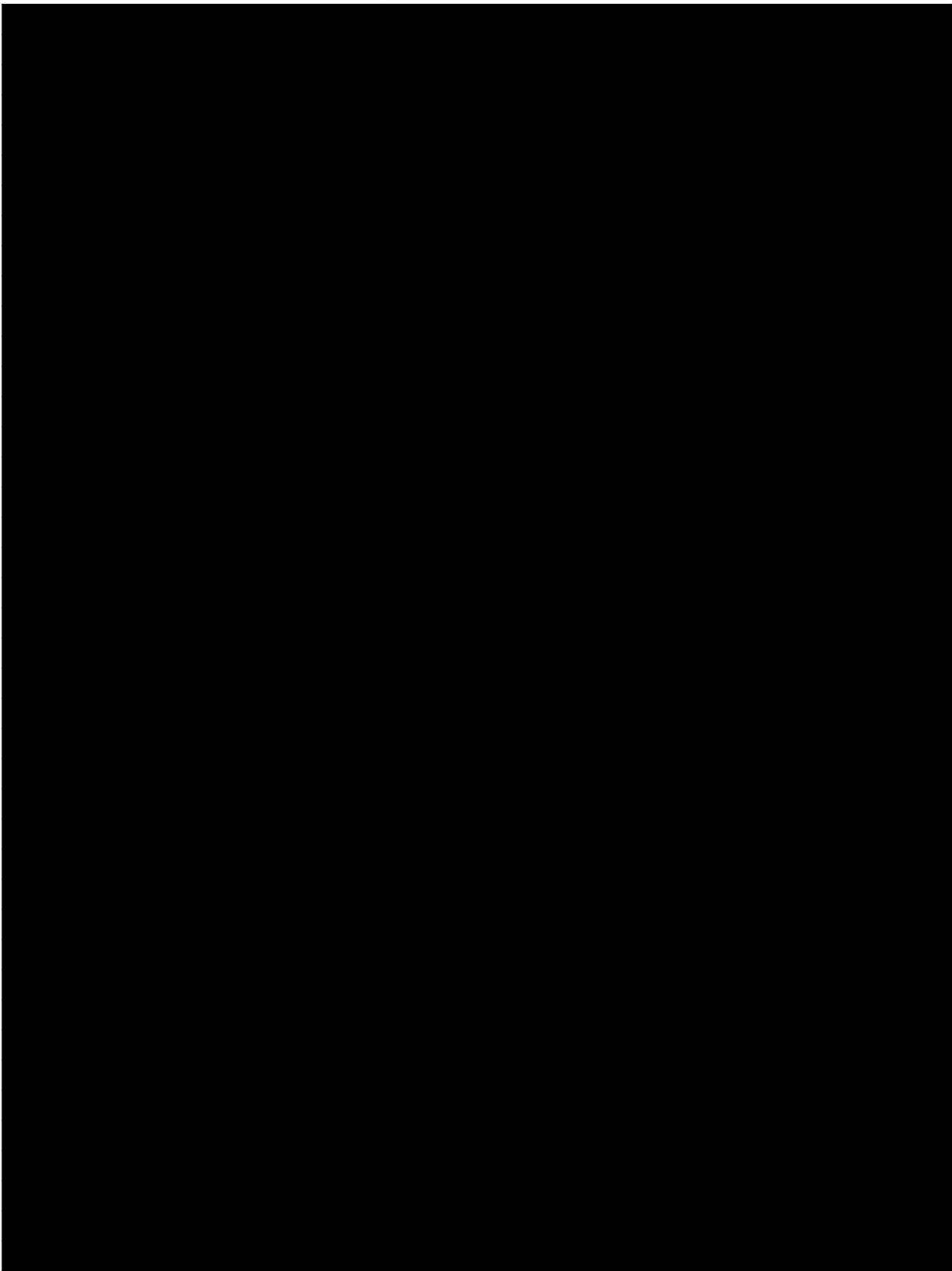
ame facility. Report all significant figures (including fractions of a metric ton

Other F-GHG:	CASRN:
<p style="color: red; text-align: center;">If a F-GHG chemical is not listed, search EPA's Substance Registry Service            Abstracts Service registry number (CASRN) and enter chemical here. If a F-            via SRS search, add the F-GHG by entering its name and, if            [98.416(a)(1)]</p>	



1, if applicable).

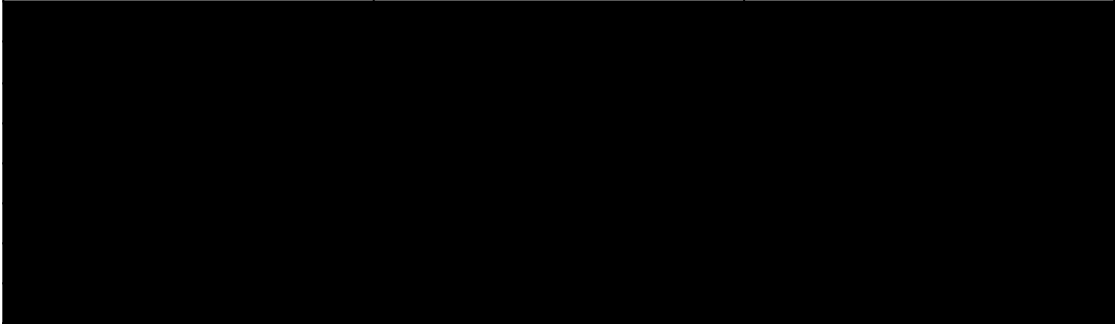
<b>Chemical Formula:</b>	
<b>es (SRS) by name and/or Chemical f-GHG constituent cannot be found f available, CASRN</b>	<b>Specify f-GHG Category for Purposes of Estimating GWP (if necessary)</b> <b>[98.3(c)(5)(ii)]</b>
	

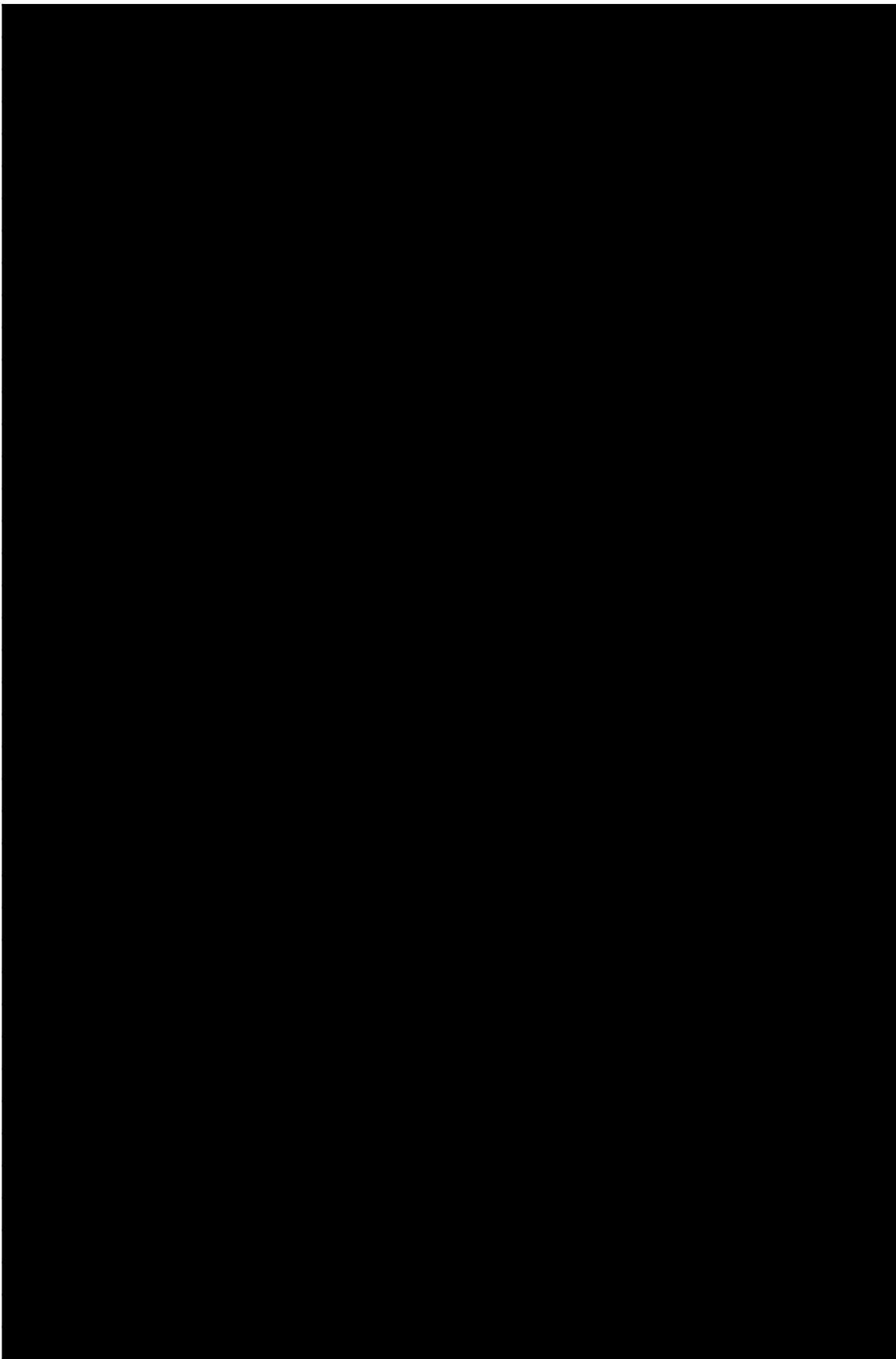


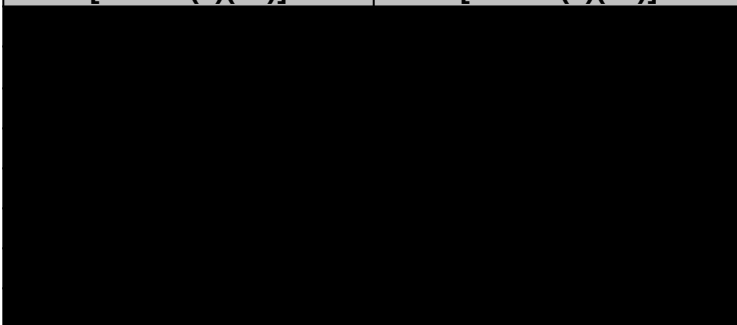


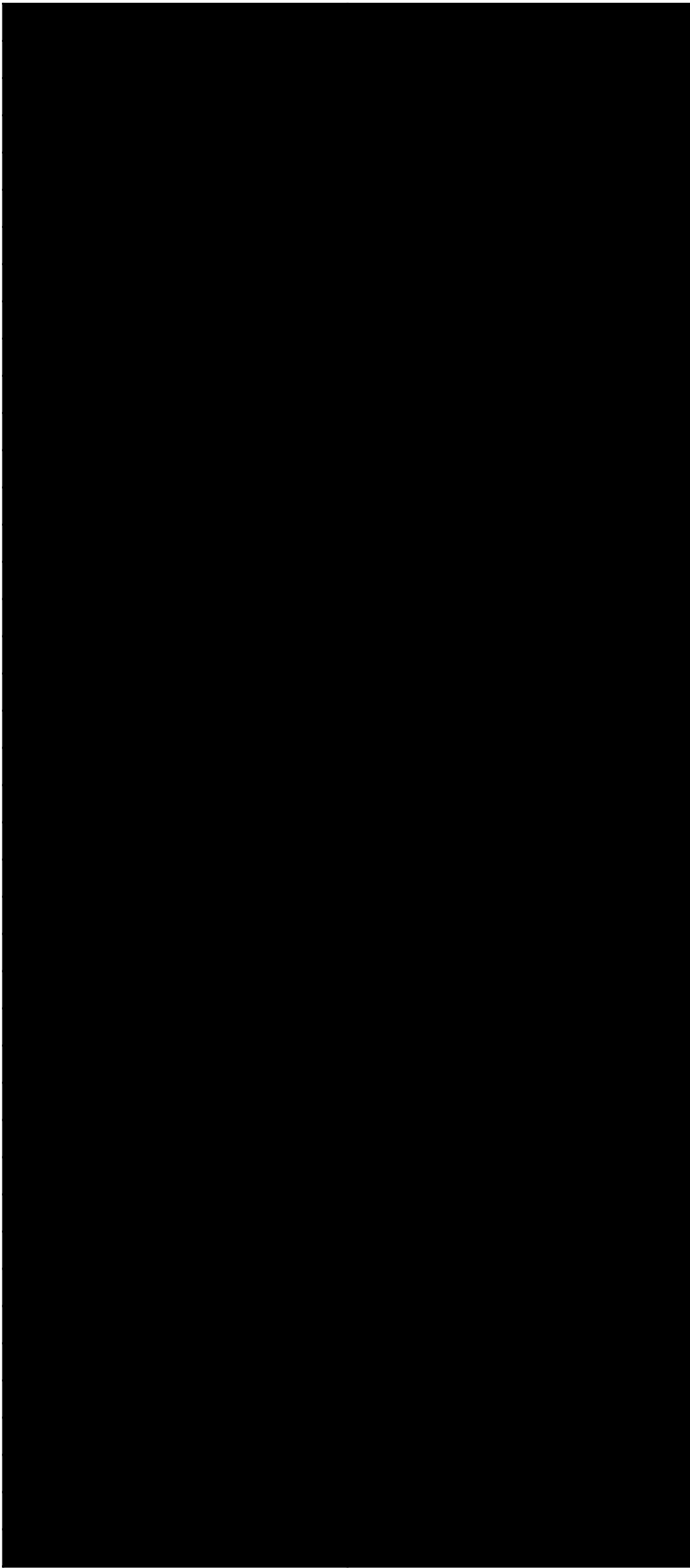




<b>Mass determined using the missing data procedure (metric tons)</b> [98.416(a)(16)]	<b>Number of hours that a missing data procedure was used to measure the mass fed into the transformation process</b> [98.416(a)(16)]	<b>Reason a missing data procedure was used</b> [98.416(a)(16)]
		



<b>Method used to estimate the missing data</b> [98.416(a)(16)]	<b>Specify the "Other" measurement method used to determine mass (if applicable)</b> [98.416(a)(16)]
	







## Subpart OO - Only for Facilities th

### Worksheet Instructions:

Please identify each F-GHG that was previous quantities that are returned to your facility for r

### Version:

R.05

### External Links:

Subpart OO Resources Page:

Reporting Form Help Content:

Optional Calculation Spreadsheet:

### Workbook Navigation:

[Part 1- Facility Information](#)

[Part 2 - Production & Transformation Process](#)

[Part 2a - Production Process Information](#)

[Part 2b - Transformation Process Information](#)

## Part 3 - On-Site Destruction Inform

**Instructions:** Identify each F-GHG that was facility by another facility for destruction ar metric ton, if applicable).

Does your facility destroy F-GHGs? [98.410

F-G

Previously prod

(if not listed, select "Search Extended List not listed" and ente

1  
2  
3  
4  
5

6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	



## at Produce F-GHG and/or N<sub>2</sub>O

ly produced at any facility and that was destroyed at your facility. For example, eclamation but are found to be irretrievably contaminated.

<http://www2.epa.gov/ghgreporting/subpart-oo-suppliers-industrial-greenhouse->  
<http://www.ccdsupport.com/confluence/display/help/Reporting+Form+Instructio>  
<http://www.ccdsupport.com/confluence/display/help/Optional+Calculation+Spr>

[Information](#) [Part 3 - On-Site Destruction Info](#)  
[Part 4 - Off-Site Transformation](#)  
[Part 5 - Off-Site Destruction Info](#)

## nation

previously produced (as defined at 98.410(b), at any facility) and that was id quantities that are returned to your facility for reclamation but are four

6(a)(3)]	
----------	--

HG	CASRN
duced F-GHG that was destroyed at the facility	
" to activate column 'C' for a comprehensive list or select "Other F-GHG or the information required in columns 'F' and 'G')	
[98.416(a)(3)]	



this may include quantities that are shipped to your facility by another facility for destruction and

[gases](#)

[ions](#)

[Worksheet+Instructions](#)

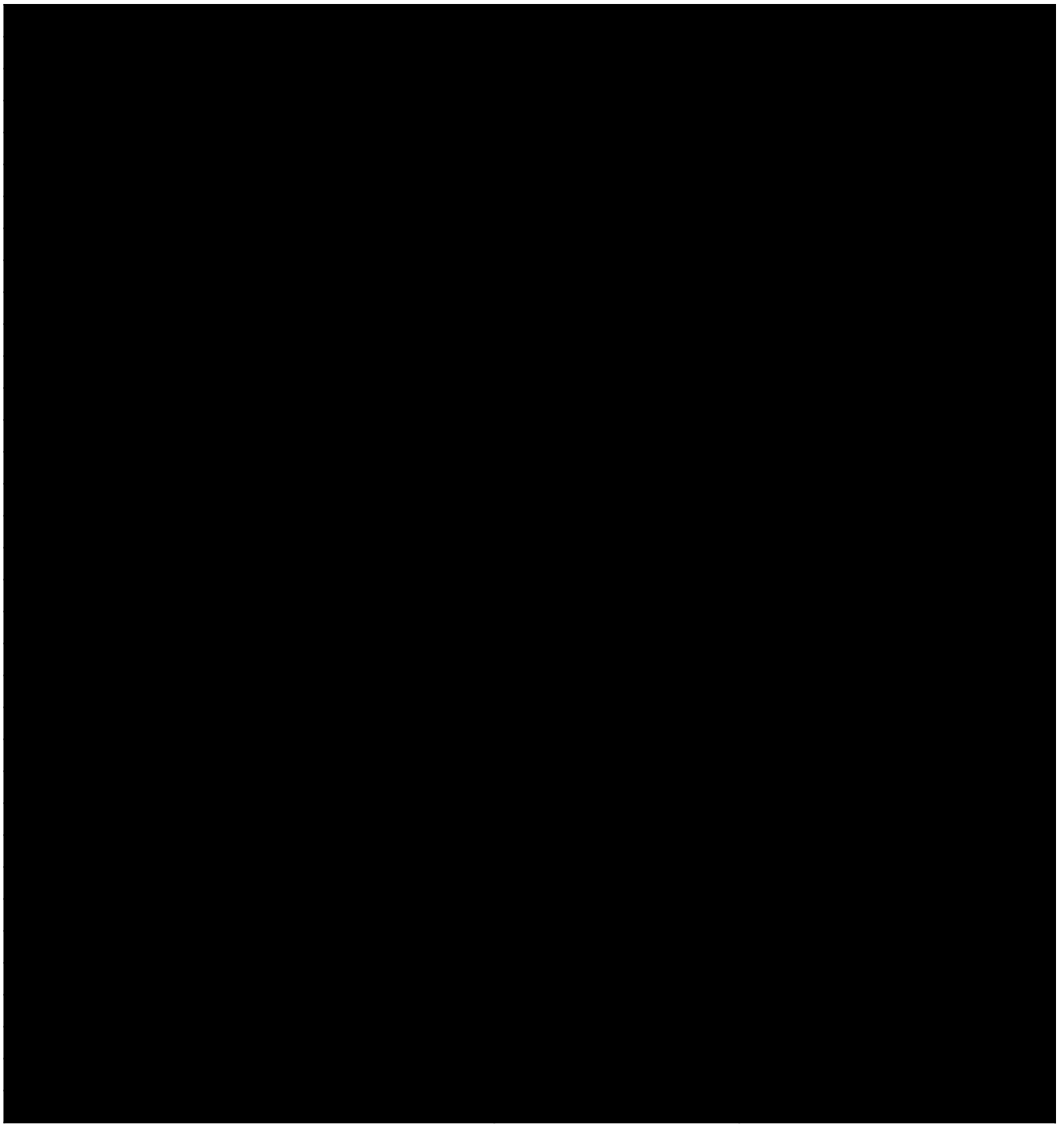
[Information](#)

[Information](#)

[Information](#)

destroyed at your facility. For example, this may include quantities that are shipped to your facility to be irretrievably contaminated. Report all significant figures (including fractions of a

Other F-GHG:	CASRN:	Chemical Formula:
<p style="color: red; text-align: center;">If a 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 a 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)]</p>		



<b>Specify f-GHG Category for Purposes of Estimating GWP (if necessary)</b> [98.3(c)(5)(ii)]	<b>Mass of the F-GHG destroyed at the facility (metric tons)</b> [98.416(a)(3)]

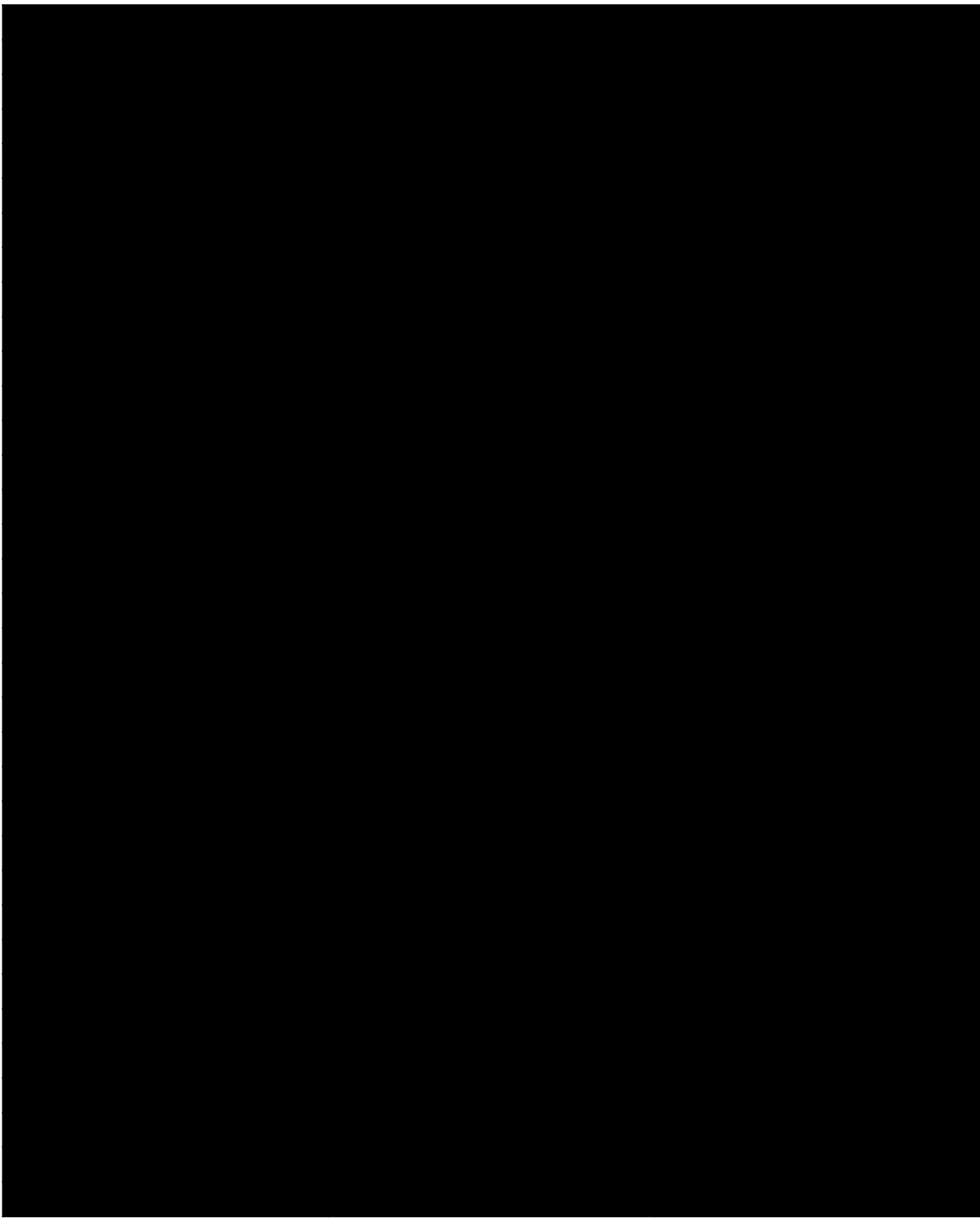


<p><b>Mass fed into the destruction device (metric tons)</b></p> <p>[98.416(a)(11)]</p>	<p><b>Was the F-GHG mass determined using a missing data procedure?</b></p> <p>[98.416(a)(16)]</p>	<p><b>Mass determined using the missing data procedure (metric tons)</b></p> <p>[ 98.416(a)(16)]</p>





<b>Number of hours that a missing data procedure was used to measure the mass fed into the destruction device</b> [98.416(a)(16)]	<b>Reason a missing data procedure was used</b> [98.416(a)(16)]	<b>Method used to estimate the missing data</b> [98.416(a)(16)]



**Specify the "Other"  
measurement method  
used to determine mass  
(if applicable)**

**[98.416(a)(16)]**



## Subpart OO - Only for Facilities that Produce F-GHGs and/or N<sub>2</sub>

### Worksheet Instructions:

Please identify the name and address of the offsite transformation facility to which f-GHGs are sent to each transformation facility in Part 4b.

### Version:

R.05

### External Links:

Subpart OO Resources Page: <http://www2.epa.gov/ghgreporting/subpart-oo->

Reporting Form Help Content: <http://www.ccdsupport.com/confluence/display>

Optional Calculation Spreadsheet: <http://www.ccdsupport.com/confluence/display>

### Workbook Navigation:

[Part 1- Facility Information](#)

[Part 2 - Production & Transformation Process Information](#)

[Part 2a - Production Process Information](#)

[Part 2b - Transformation Process Information](#)

## Part 4a - Off-Site Transformation Facility Information

Instructions: Provide the following information for each facility to which any of the

	Facility Name	Is the Facility US based?
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		

19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	

**Part 4b - Off-Site Transformation Facility Shipment Information**  
**Instructions: Provide the following information for N<sub>2</sub>O or each F-GHG produce figures (including fractions of a r**

	F-G
Facility Name [98.416(a)(14)]	Previously produced F-GI (if not listed, select "Search Extended List' not listed" and ente
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	

60		
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		





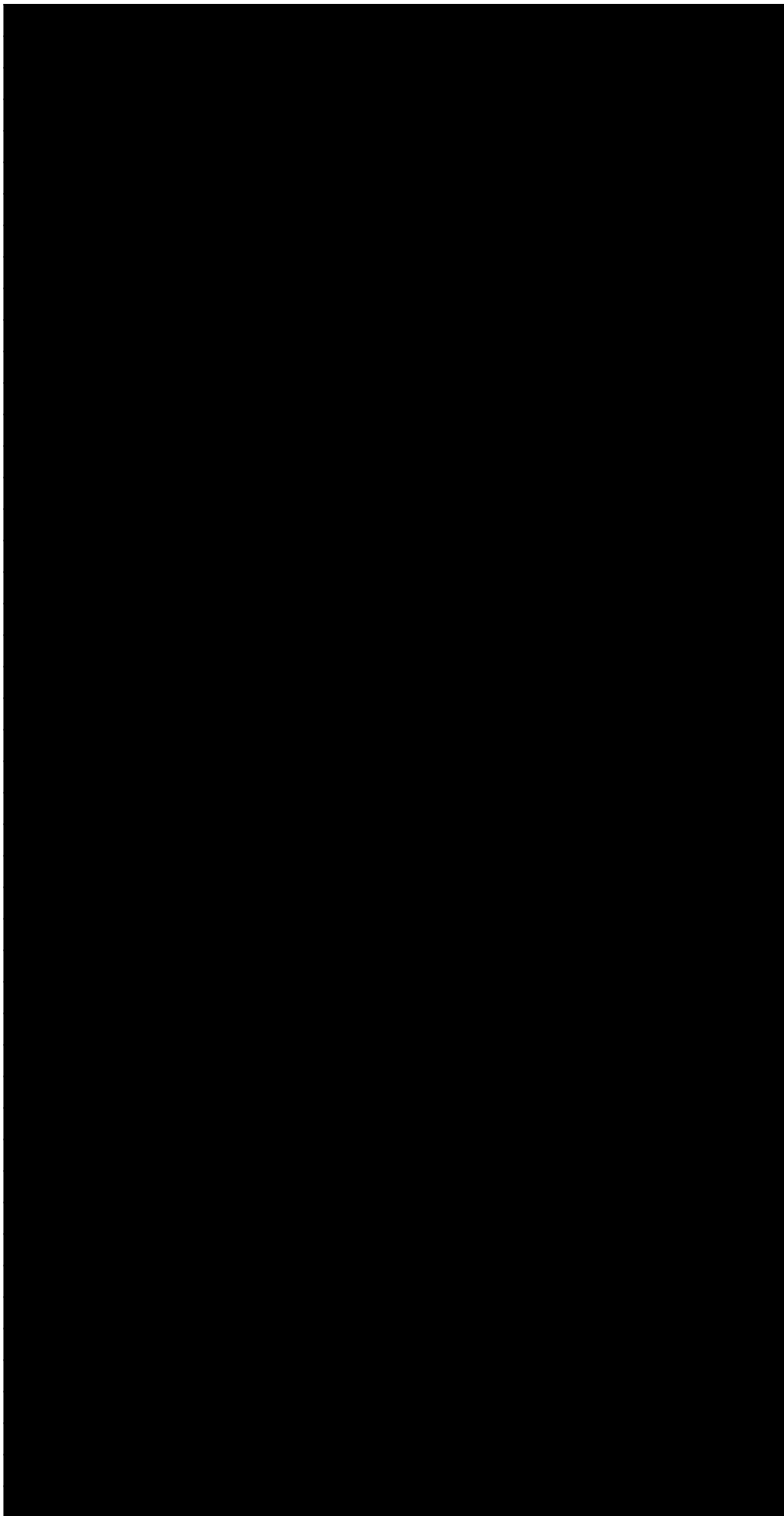














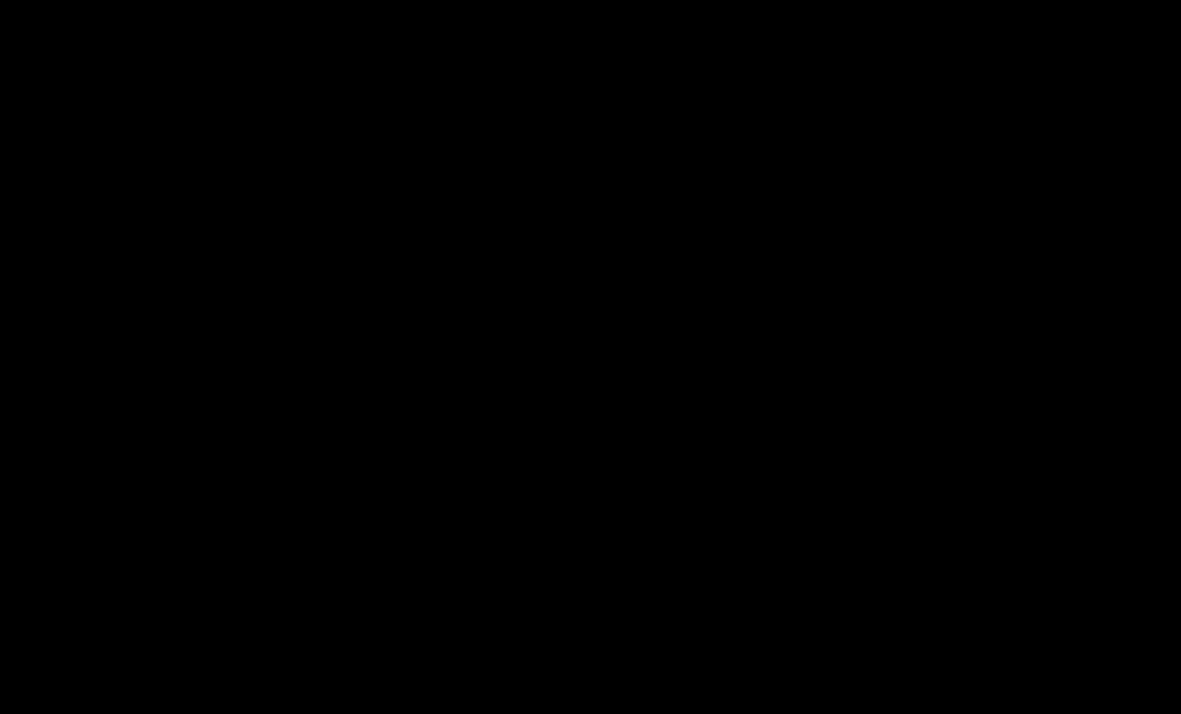


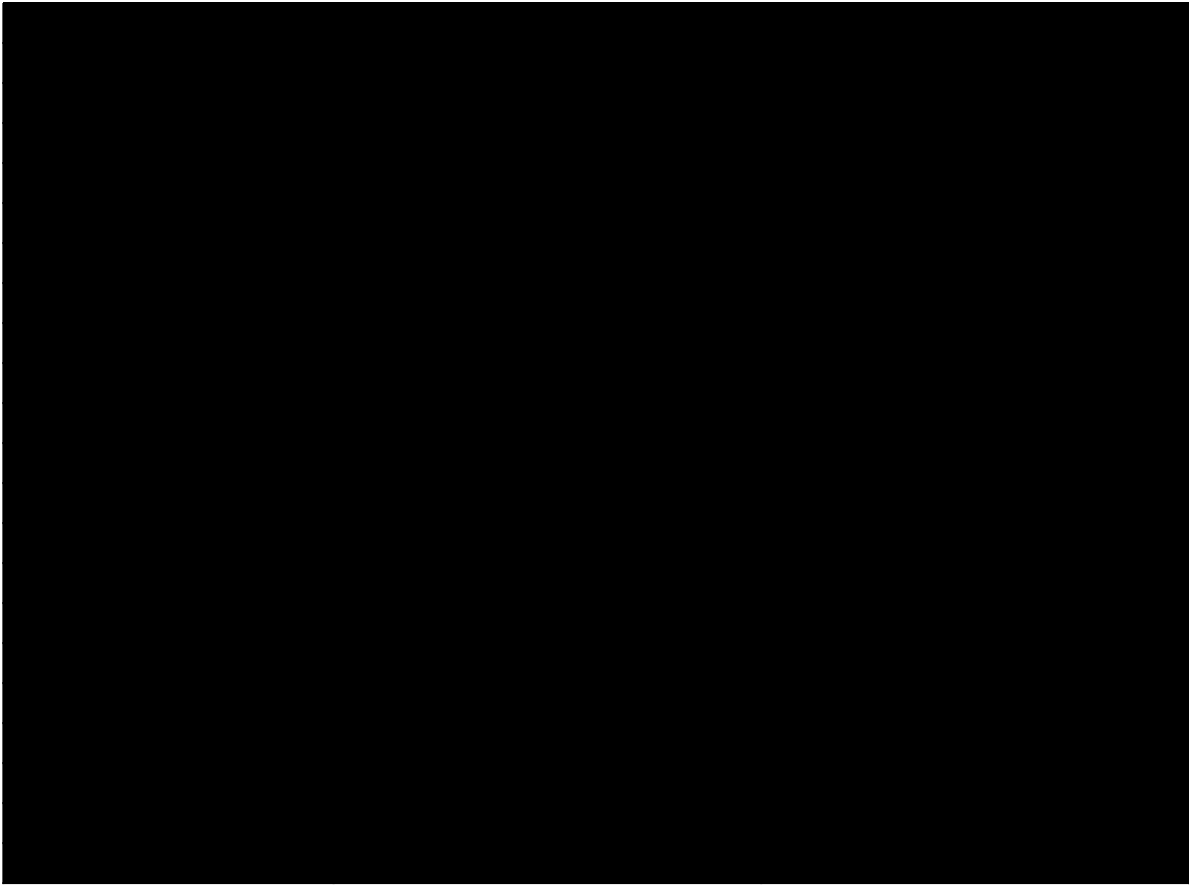
<b>Country</b>	<b>non-US Street Address</b>	<b>non-US City</b>







<b>non-US Province</b>	<b>non-US Postal Cod</b>	<b>non-US Country</b>
		

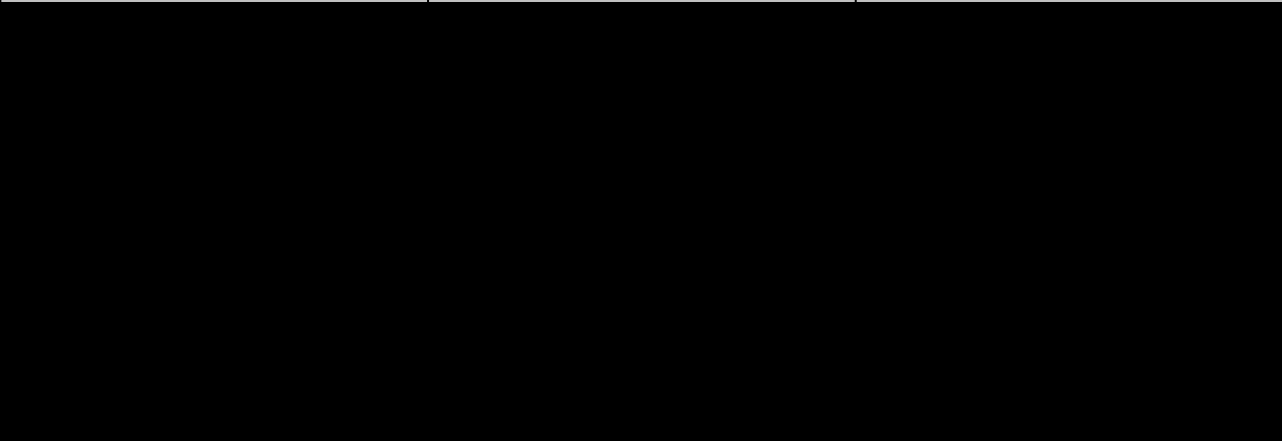


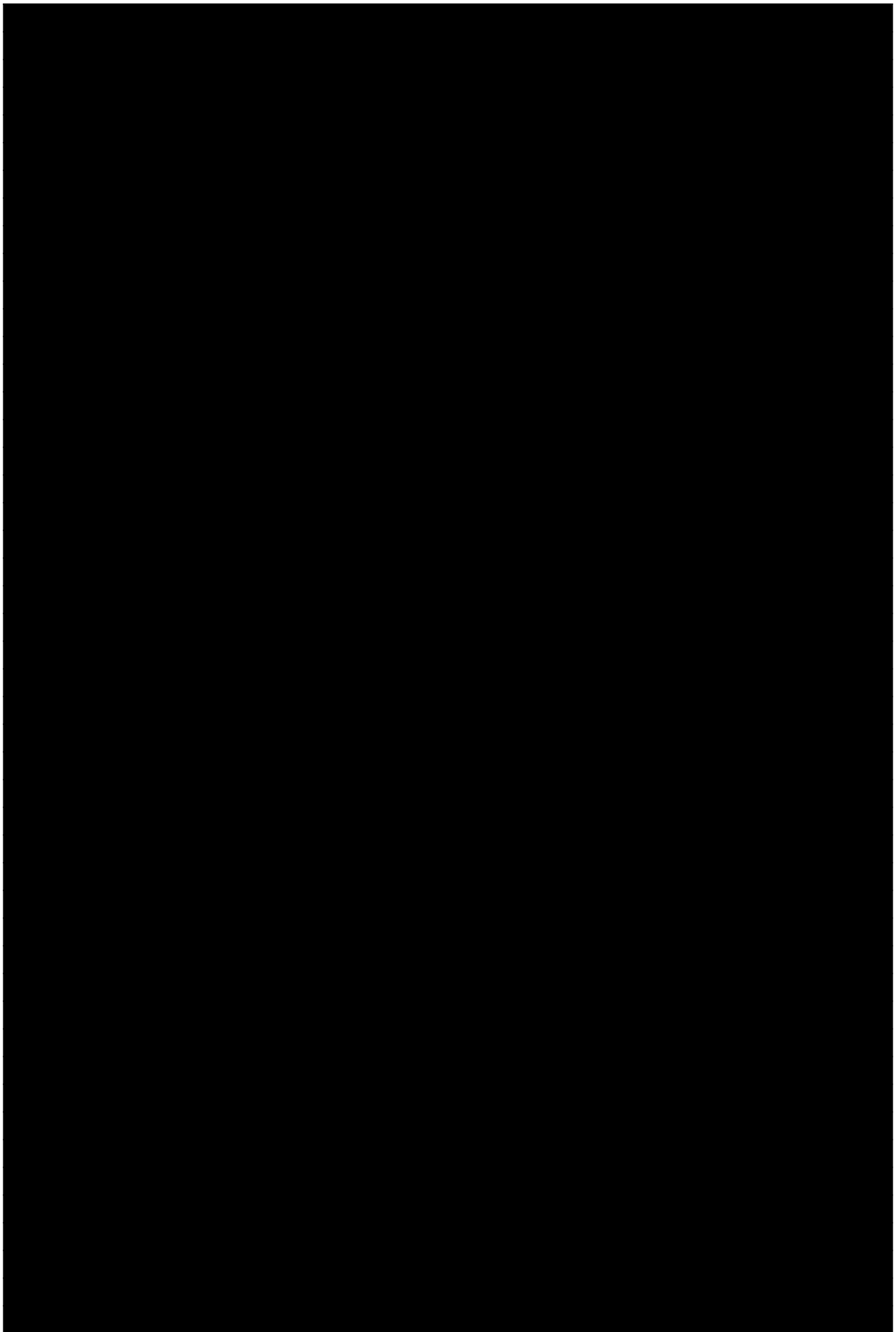
<b>Was the mass determined using a missing data procedure?</b> [98.416(a)(16)]	<b>Mass determined using the missing data procedure (metric tons)</b> [98.416(a)(16)]	<b>Number of hours that a missing data procedure was used to measure the mass fed into the transformation device</b> [98.416(a)(16)]








<b>Reason a missing data procedure was used</b> [98.416(a)(16)]	<b>Method used to estimate the missing data</b> [98.416(a)(16)]	<b>Specify the "Other" measurement method used to determine mass (if applicable)</b> [98.416(a)(16)]
		









## Subpart OO - Only for Facilities that Produce F-GHGs and/or N

### Worksheet Instructions:

Please identify the name and address of the offsite destruction facility to which f-

### Version:

R.05

### External Links:

Subpart OO Resources Page: <http://www2.epa.gov/ghgreporting/subpart-oo-s>

Reporting Form Help Content: <http://www.ccdsupport.com/confluence/display>

Optional Calculation Spreadsheet: <http://www.ccdsupport.com/confluence/display>

[Part 1- Facility Information](#)

[Part 2 - Production & Transformation Process Information](#)

[Part 2a - Production Process Information](#)

[Part 2b - Transformation Process Information](#)

## Part 5a - Off-Site Destruction Facility Information

Instructions: Provide the following information for each facility to which any F-GHGs and/or N<sub>2</sub>O are sent for destruction.

	Facility Name	Is the Facility US based?
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		

**Part 5b - Off-Site Destruction Facility Shipment Information**

**Instructions:** Provide the following information for N<sub>2</sub>O or each F-GHG produced in this facility (including fractions of a metric ton, if applicable).

		F-G
Facility Name [98.416(a)(15)]		F-GHG that is sent to another facility for destruction (if not listed, select "Search Extended List and enter manually" if not listed" and enter manually)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		
56		
57		
58		



59		
60		
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		



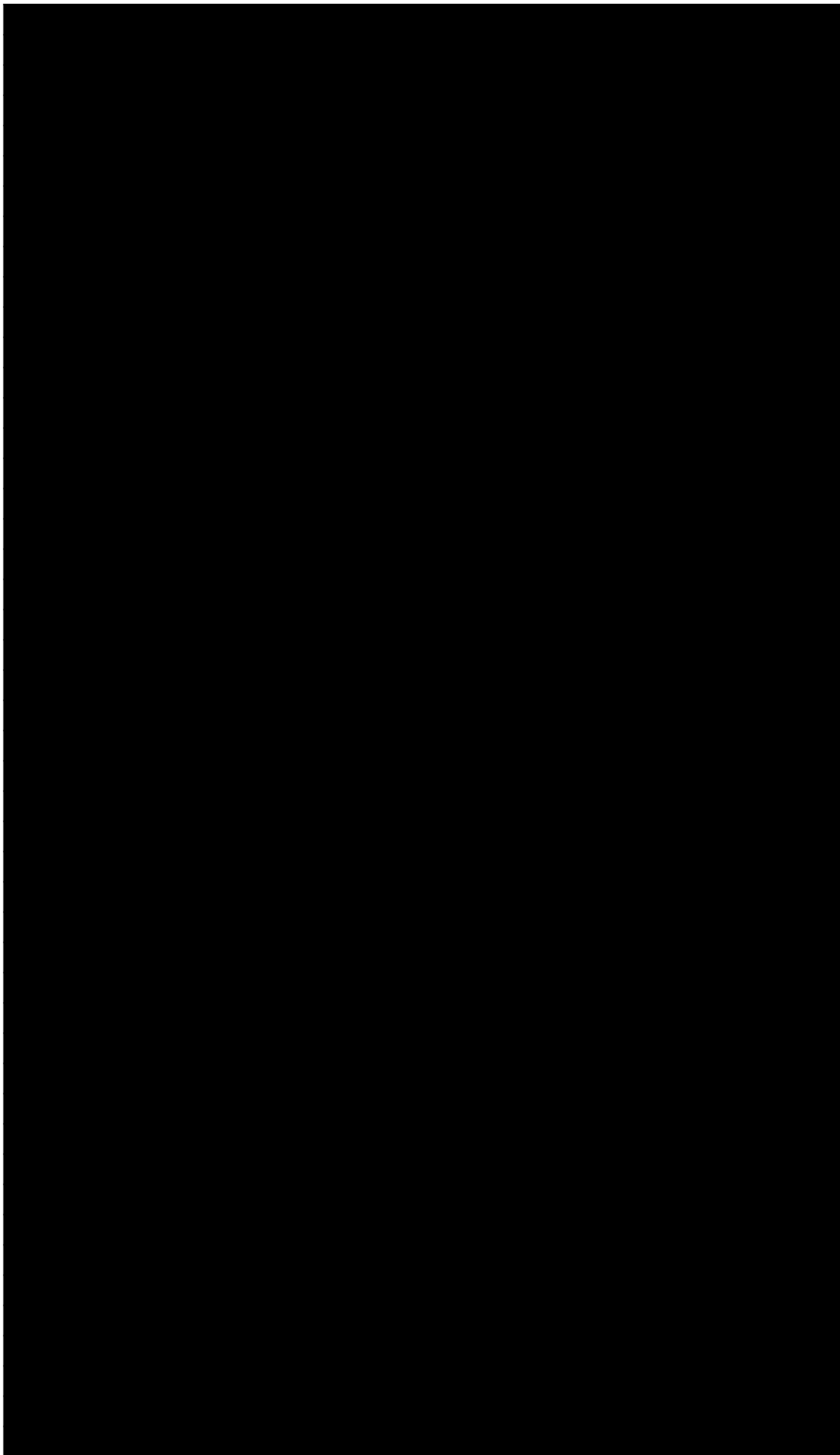




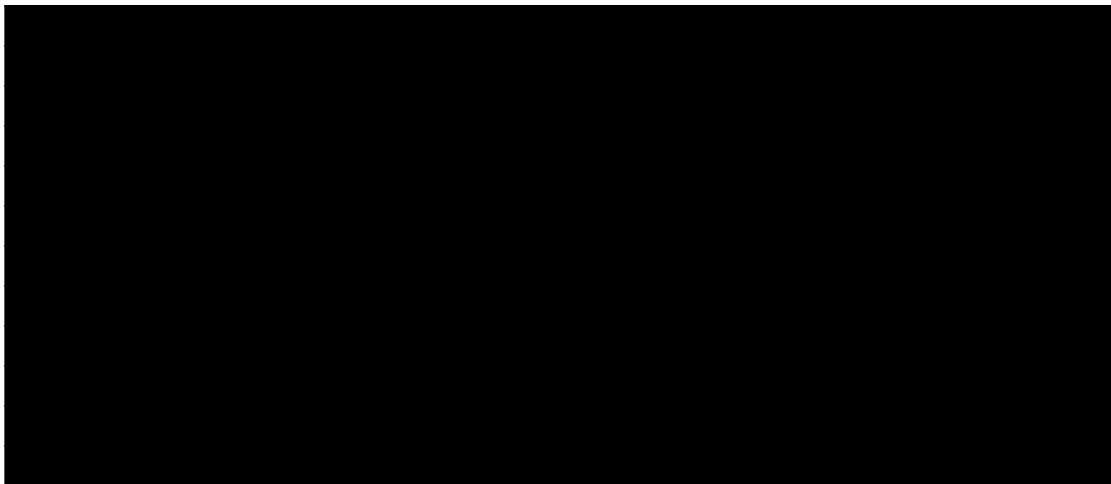





Other F-GHG:	CASRN:
<p>If a F-GHG chemical is not listed, search EPA's Substance Registry Service Abstracts Service registry number (CASRN) and enter chemical here. If a F-GHG search, add the F-GHG by entering its name and, if available, its CASRN number. [98.416(a)(1)]</p>	















non-US City	non-US Province	non-US Postal Code
[Redacted Content]		

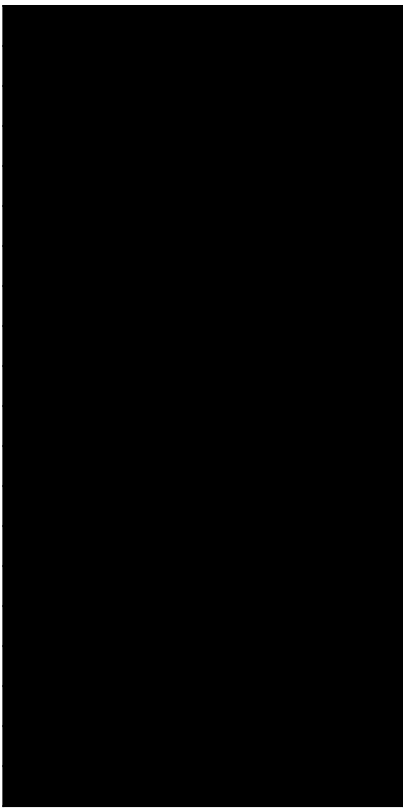




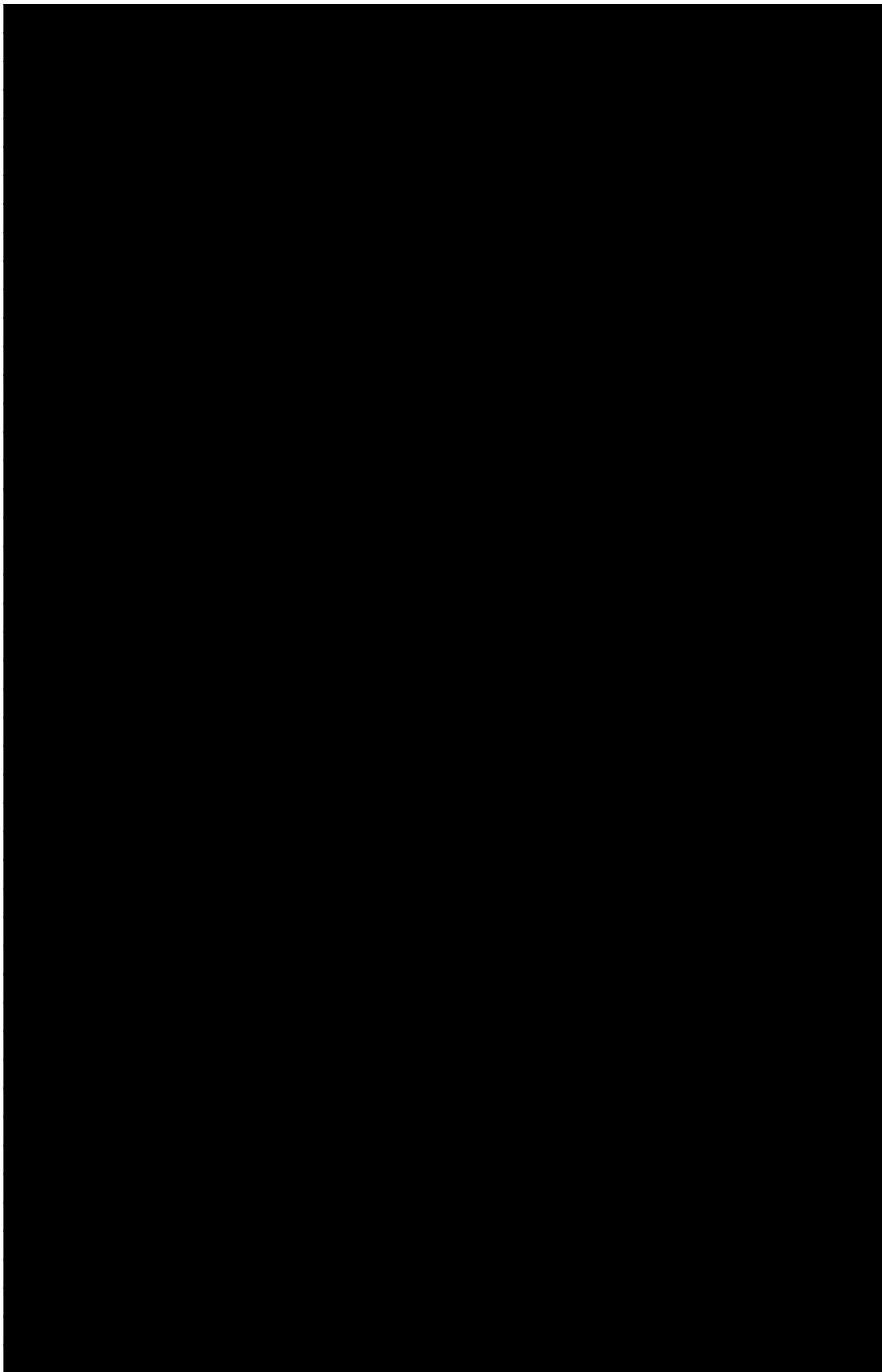




**non-US  
Country**



<b>Mass determined using the missing data procedure (metric tons)</b> [98.416(a)(16)]	<b>Number of hours that a missing data procedure was used to measure the mass fed into the destruction device</b> [98.416(a)(16)]	<b>Reason a missing data procedure was used</b> [98.416(a)(16)]

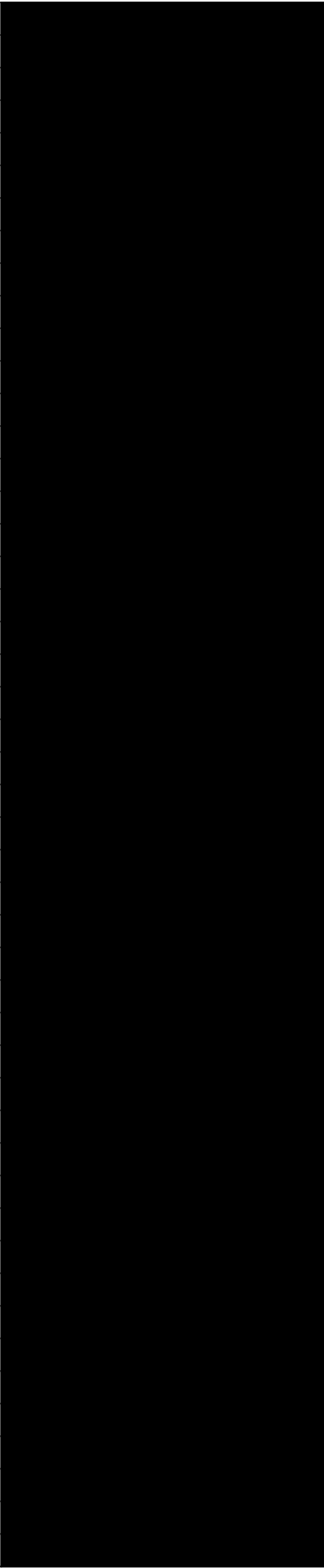




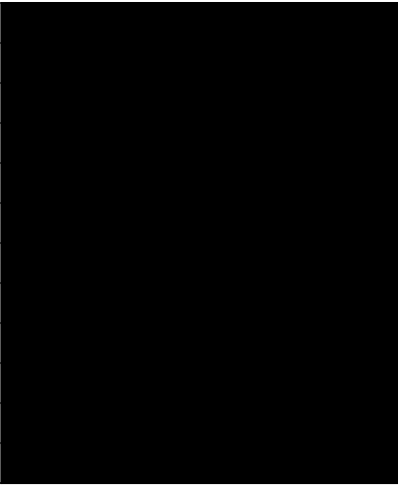


**Method used to estimate  
the missing data**

**[98.416(a)(16)]**







## Listing of f-GHG for Use in Subpart OO Producers Form

The following f-GHG are listed only by name in the f-GHG pick lists on the preceding tabs. The f-GHG below are presented in the same order as in the pick lists. **Use Ctrl+F to search this list by name or CASRN.** Once you have identified the f-GHG please note the f-GHG name used in this Inputs Form and its location within the pick list so that you can more easily locate it in the pick lists.

Chemical Name
---------------

Nitrous Oxide
Sulfur hexafluoride
Trifluoromethyl sulphur pentafluoride
Nitrogen trifluoride
PFC-14 (Perfluoromethane)
PFC-116 (Perfluoroethane)
PFC-218 (Perfluoropropane)
Perfluorocyclopropane
PFC-3-1-10 (Perfluorobutane)
Perfluorocyclobutane
PFC-4-1-12 (Perfluoropentane)
PFC-5-1-14 (Perfluorohexane, FC 72)
PFC-6-1-12
PFC-7-1-18
PFC-9-1-18
PFPME (HT-70)
Perfluorodecalin (cis)
Perfluorodecalin (trans)
Octafluorotetrahydrofuran
FC-3283/FC-8270 (Perfluorotripropylamine)
FC-3284 (Perfluoromethylmorpholine)
FC-40/FC-43 (Perfluorotributylamine (PTBA))
FC-770 (Perfluoroisopropylmorpholine)
HT-55
HT-90
HT-110
HT-135
HFC-23
HFC-32
HFC-41
HFC-125
HFC-134
HFC-134a
HFC-143
HFC-143a
HFC-152
HFC-152a
HFC-161

HFC-227ca  
HFC-227ea  
HFC-236cb  
HFC-236ea  
HFC-236fa  
HFC-245ca  
HFC-245cb  
HFC-245ea  
HFC-245eb  
HFC-245fa  
HFC-263fb  
HFC-272ca  
HFC-329p  
HFC-365mfc  
HFC-43-10mee  
1,1,1,2,2,3,3-Heptafluoro-3-(1,2,2,2-tetrafluoroethoxy)-propane  
1,1,2,2-Tetrafluoro-1-(fluoromethoxy)ethane  
1,1,2,2-Tetrafluoro-3-methoxy-propane; Methyl 2,2,3,3-tetrafluoropropyl ether  
1,1,2-Trifluoro-2-(trifluoromethoxy)-ethane  
1,1,3,3,4,4,6,6,7,7,9,9,10,10,12,12,13,13,15,15-eicosafluoro-2,5,8,11,14-Pentaoxapentadecane  
1-Ethoxy-1,1,2,2,3,3,3-heptafluoropropane  
1-Ethoxy-1,1,2,3,3,3-hexafluoropropane  
2-Chloro-1,1,2-trifluoro-1-methoxyethane  
2-Ethoxy-3,3,4,4,5-pentafluorotetrahydro-2,5-bis[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]-furan  
Difluoro(fluoromethoxy)methane  
Difluoro(methoxy)methane  
Fluoro(fluoromethoxy)methane  
Fluoro(methoxy)methane  
HCFE-235ca2 (Enflurane)  
Isoflurane (HCFE-235da2)  
HFE-125  
HFE-134  
HFE-143a  
HFE-227ea  
HFE-236ca  
HFE-236ca12 (HG-10)  
Desflurane (HFE-236ea2)  
HFE-236fa  
HFE-245cb2  
HFE-245fa1  
HFE-245fa2  
HFE-254cb2  
HFE-263fb2  
HFE-263m1; R-E-143a  
HFE-329mcc2

HFE-329me3  
HFE-338mcf2  
HFE-338mmz1  
HFE-338pcc13 (HG-01)  
HFE-347mcc3  
HFE-347mcf2  
HFE-347mmy1  
Sevoflurane  
HFE-347pcf2  
HFE-356mec3  
HFE-356mff2  
HFE-356mmz1  
HFE-356pcc3  
HFE-356pcf2  
HFE-356pcf3  
HFE-365mcf2  
HFE-365mcf3  
HFE-374pc2  
HFE-43-10pccc (H-Galden 1040x)  
HFE-449sl, (HFE-7100) Isomer blend  
HFE-569sf2, (HFE-7200) Isomer blend  
HG'-01  
HG'-02  
HG-02  
HG'-03  
HG-03  
HG-20  
HG-21  
HG-30  
Trifluoro(fluoromethoxy)methane  
HFE-7300 (1,1,1,2,2,3,4,5,5,5-decafluoro-3-methoxy-4-trifluoromethyl-pentane)  
HFE-7500 (3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane)  
Trifluoromethyl formate  
Perfluoroethyl formate  
1,2,2,2-Tetrafluoroethyl formate  
Perfluorobutyl formate  
Perfluoropropyl formate  
1,1,1,3,3,3-Hexafluoropropan-2-yl formate  
2,2,2-Trifluoroethyl formate  
3,3,3-Trifluoropropyl formate  
Methyl 2,2,2-trifluoroacetate  
1,1-Difluoroethyl 2,2,2-trifluoroacetate  
Difluoromethyl 2,2,2-trifluoroacetate  
2,2,2-Trifluoroethyl 2,2,2-trifluoroacetate  
Methyl 2,2-difluoroacetate

Perfluoroethyl acetate  
Trifluoromethyl acetate  
Perfluoropropyl acetate  
Perfluorobutyl acetate  
Ethyl 2,2,2-trifluoroacetate  
Methyl carbonofluoridate  
1,1-Difluoroethyl carbonofluoridate  
Bis(trifluoromethyl)-methanol  
(Octafluorotetramethy-lene)hydroxymethyl group  
2,2,3,3,3-pentafluoropropanol  
2,2,3,3,4,4,4-Heptafluorobutan-1-ol  
2,2,2-Trifluoroethanol  
2,2,3,4,4,4-Hexafluoro-1-butanol  
2,2,3,3-Tetrafluoro-1-propanol  
2,2-Difluoroethanol  
2-Fluoroethanol  
4,4,4-Trifluorobutan-1-ol  
PFC-1114; TFE  
PFC-1216; Dyneon HFP  
PFC C-1418  
Perfluorobut-2-ene  
Perfluorobut-1-ene  
Perfluorobuta-1,3-diene  
HFC-1132a; VF2  
HFC-1141; VF  
(E)-HFC-1225ye  
(Z)-HFC-1225ye  
HCFC-1233zd(E)  
HFC-1234yf; HFO-1234yf  
HFC-1234ze(E)  
HFC-1234ze(Z)  
HFC-1243zf; TFP  
(Z)-HFC-1336  
HFC-1345zfc  
Capstone 42-U  
Capstone 62-U  
Capstone 82-U  
PMVE; HFE-216  
Fluoroxene  
3,3,3-Trifluoro-propanal  
Novac 649/1230, FK 5-1-12, perfluoro(2-methyl-3-pentanone)  
3,3,4,4,5,5,6,6,7,7,7-Undecafluoroheptan-1-ol  
3,3,3-Trifluoropropan-1-ol  
3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-Pentadecafluorononan-1-ol  
3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,11-Nonadecafluoroundecan-1-ol

Trifluoroiodomethane  
Dibromodifluoromethane (Halon 1202)  
2-Bromo-2-chloro-1,1,1-trifluoroethane (Halon-2311 / Halothane)  
Perfluoroethyl vinyl ether  
Galden ZT-85  
Galden ZT-130  
Galden ZT-150  
Perfluorosolv PFS-2  
DET  
HT-80  
D05  
Perfluoropropyl vinyl ether  
2H-perfluoro(5-methyl-3,6-dioxanonane)  
Trifluoromethanesulfonyl fluoride  
Carbonic difluoride  
Trifluoroacetyl fluoride  
Perfluorodiethyl ether  
Perfluorobutanesulfonyl fluoride  
Perfluoropropionyl fluoride  
Perfluorobutyl iodide  
Hexafluorooxetane  
Hexafluoropropylene oxide  
Propanoic Acid, 3-[1-[Difluoro [ (Trifluoroethenyl oxy) Methyl]-1,2,2,2-Tetrafluoroethoxy] -2,2,3,3-Tetrafluoro-, Me  
Pentafluoro(trifluoromethoxy)-ethane  
1,1,1,3,3,5,5,7,7,9,9,11,11-tridecafluoro-2,4,6,8,10-pentaoxadodecan-12-oyl fluoride  
2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propanoyl fluoride  
C5F13N  
Perfluorocyclohexane  
HEPTAFLUOROPROPYL TRIFLUOROMETHYL ETHER  
Perfluoro-2-(2-Fluorosulfonylethoxy) Propyl Vinyl Ether  
Perfluoro(methylcyclopropane)  
Other F-GHG chemical not listed

CASRN	Position Indicators	
	Extended List	Short List
10024-97-2	1 of 205	1 of 35
2551-62-4	2 of 205	2 of 35
373-80-8	3 of 205	
7783-54-2	4 of 205	3 of 35
75-73-0	5 of 205	4 of 35
76-16-4	6 of 205	5 of 35
76-19-7	7 of 205	6 of 35
931-91-9	8 of 205	
355-25-9	9 of 205	
115-25-3	10 of 205	7 of 35
678-26-2	11 of 205	8 of 35
355-42-0	12 of 205	9 of 35
335-57-9	13 of 205	10 of 35
307-34-6	14 of 205	
306-94-5	15 of 205	11 of 35
69991-67-9 (b)	16 of 205	12 of 35
60433-11-6	17 of 205	
60433-12-7	18 of 205	
773-14-8	19 of 205	
338-83-0	20 of 205	
382-28-5	21 of 205	
1064698-37-8	22 of 205	
1093615-61-2	23 of 205	
69991-67-9 (a)	24 of 205	
69991-67-9 (c)	25 of 205	
69991-67-9 (d)	26 of 205	
69991-67-9 (e)	27 of 205	
75-46-7	28 of 205	13 of 35
75-10-5	29 of 205	14 of 35
593-53-3	30 of 205	15 of 35
354-33-6	31 of 205	16 of 35
359-35-3	32 of 205	
811-97-2	33 of 205	17 of 35
430-66-0	34 of 205	
420-46-2	35 of 205	18 of 35
624-72-6	36 of 205	
75-37-6	37 of 205	19 of 35
353-36-6	38 of 205	

2252-84-8	39 of 205	
431-89-0	40 of 205	20 of 35
677-56-5	41 of 205	
431-63-0	42 of 205	
690-39-1	43 of 205	
679-86-7	44 of 205	
1814-88-6	45 of 205	
24270-66-4	46 of 205	
431-31-2	47 of 205	
460-73-1	48 of 205	21 of 35
421-07-8	49 of 205	
420-45-1	50 of 205	
375-17-7	51 of 205	
406-58-6	52 of 205	
138495-42-8	53 of 205	
3330-15-2	54 of 205	
37031-31-5	55 of 205	
60598-17-6	56 of 205	
84011-06-3	57 of 205	
173350-38-4	58 of 205	
22052-86-4	59 of 205	
380-34-7	60 of 205	
425-87-6	61 of 205	
920979-28-8	62 of 205	
461-63-2	63 of 205	
359-15-9	64 of 205	
462-51-1	65 of 205	
460-22-0	66 of 205	
13838-16-9	67 of 205	
26675-46-7	68 of 205	22 of 35
3822-68-2	69 of 205	
1691-17-4	70 of 205	
421-14-7	71 of 205	
2356-62-9	72 of 205	
32778-11-3	73 of 205	
78522-47-1	74 of 205	
57041-67-5	75 of 205	23 of 35
20193-67-3	76 of 205	
22410-44-2	77 of 205	
84011-15-4	78 of 205	
1885-48-9	79 of 205	
425-88-7	80 of 205	
460-43-5	81 of 205	
690-22-2	82 of 205	
134769-21-4	83 of 205	



428454-68-6	84 of 205	
156053-88-2	85 of 205	
26103-08-2	86 of 205	
188690-78-0	87 of 205	
375-03-1	88 of 205	24 of 35
171182-95-9	89 of 205	
22052-84-2	90 of 205	
28523-86-6	91 of 205	25 of 35
406-78-0	92 of 205	
382-34-3	93 of 205	
333-36-8	94 of 205	
13171-18-1	95 of 205	
160620-20-2	96 of 205	
50807-77-7	97 of 205	
35042-99-0	98 of 205	
22052-81-9	99 of 205	
378-16-5	100 of 205	
512-51-6	101 of 205	
E1730133	102 of 205	
163702-07-6, 163702-08-7	103 of 205	26 of 35
163702-05-4, 163702-06-5	104 of 205	27 of 35
73287-23-7	105 of 205	
485399-46-0	106 of 205	
205367-61-9	107 of 205	
485399-48-2	108 of 205	
173350-37-3	109 of 205	
249932-25-0	110 of 205	
249932-26-1	111 of 205	
188690-77-9	112 of 205	
2261-01-0	113 of 205	
132182-92-4	114 of 205	
297730-93-9	115 of 205	
85358-65-2	116 of 205	
313064-40-3	117 of 205	
481631-19-0	118 of 205	
197218-56-7	119 of 205	
271257-42-2	120 of 205	
856766-70-6	121 of 205	
32042-38-9	122 of 205	
1344118-09-7	123 of 205	
431-47-0	124 of 205	
1344118-13-3	125 of 205	
2024-86-4	126 of 205	
407-38-5	127 of 205	
433-53-4	128 of 205	

343269-97-6	129 of 205	
74123-20-9	130 of 205	
1344118-10-0	131 of 205	
209597-28-4	132 of 205	
383-63-1	133 of 205	
1538-06-3	134 of 205	
1344118-11-1	135 of 205	
920-66-1	136 of 205	
NA	137 of 205	
422-05-9	138 of 205	
375-01-9	139 of 205	
75-89-8	140 of 205	
382-31-0	141 of 205	
76-37-9	142 of 205	
359-13-7	143 of 205	
371-62-0	144 of 205	
461-18-7	145 of 205	
116-14-3	146 of 205	28 of 35
116-15-4	147 of 205	
559-40-0	148 of 205	29 of 35
360-89-4	149 of 205	
357-26-6	150 of 205	
685-63-2	151 of 205	30 of 35
75-38-7	152 of 205	
75-02-5	153 of 205	31 of 35
5595-10-8	154 of 205	
5528-43-8	155 of 205	
102687-65-0	156 of 205	32 of 35
754-12-1	157 of 205	
1645-83-6	158 of 205	33 of 35
29118-25-0	159 of 205	
677-21-4	160 of 205	34 of 35
692-49-9	161 of 205	
374-27-6	162 of 205	
19430-93-4	163 of 205	
25291-17-2	164 of 205	
21652-58-4	165 of 205	
1187-93-5	166 of 205	35 of 35
406-90-6	167 of 205	
460-40-2	168 of 205	
756-13-8	169 of 205	
185689-57-0	170 of 205	
2240-88-2	171 of 205	
755-02-2	172 of 205	
87017-97-8	173 of 205	

2314-97-8	174 of 205
75-61-6	175 of 205
151-67-7	176 of 205
10493-43-3	177 of 205
161075-02-01 (a)	178 of 205
161075-02-01 (b)	179 of 205
161075-02-01 (c)	180 of 205
69991-67-9 (q)	181 of 205
69991-67-9 (r)	182 of 205
69991-67-9 (s)	183 of 205
69991-67-9 (t)	184 of 205
1623-05-8	185 of 205
3330-14-1	186 of 205
335-05-7	187 of 205
353-50-4	188 of 205
354-34-7	189 of 205
358-21-4	190 of 205
375-72-4	191 of 205
422-61-7	192 of 205
423-39-2	193 of 205
425-82-1	194 of 205
428-59-1	195 of 205
63863-43-4	196 of 205
665-16-7	197 of 205
21703-49-1	198 of 205
2062-98-8	199 of 205
678-29-5	200 of 205
355-68-0	201 of 205
59426-77-6	202 of 205
16090-14-5	203 of 205
379-16-8	204 of 205
	205 of 205