Mandatory Greenhouse Gas Reporting Rule: EPA's Response to Public Comments

Volume No.: 40

Subpart OO—Suppliers of Industrial Greenhouse Gases

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Subpart OO—Suppliers of Industrial Greenhouse Gases

U. S. Environmental Protection Agency
Office of Atmosphere Programs
Climate Change Division
Washington, D.C.

FOREWORD

This document provides EPA's responses to public comments on EPA's Proposed Mandatory Greenhouse Gas Reporting Rule. EPA published a Notice of Proposed Rulemaking in the Federal Register on April 10, 2009 (74 FR 16448). EPA received comments on this proposed rule via mail, e-mail, facsimile, and at two public hearings held in Washington, DC and Sacramento, California in April 2009. Copies of all comments submitted are available at the EPA Docket Center Public Reading Room. Comments letters and transcripts of the public hearings are also available electronically through *http://www.regulations.gov* by searching Docket ID *EPA-HQ-OAR-2008-0508.*

Due to the size and scope of this rulemaking, EPA prepared this document in multiple volumes, with each volume focusing on a different broad subject area of the rule. This volume of the document provides EPA's responses to significant public comments received for 40 CFR Part 98, Subpart OO—Suppliers of Industrial Greenhouse Gases.

Each volume provides the verbatim text of comments extracted from the original letter or public hearing transcript. For each comment, the name and affiliation of the commenter, the document control number (DCN) assigned to the comment letter, and the number of the comment excerpt is provided. In some cases the same comment excerpt was submitted by two or more commenters either by submittal of a form letter prepared by an organization or by the commenter incorporating by reference the comments in another comment letter. Rather than repeat these comment excerpts for each commenter, EPA has listed the comment excerpt only once and provided a list of all the commenters who submitted the same form letter or otherwise incorporated the comments by reference in table(s) at the end of each volume (as appropriate).

EPA's responses to comments are generally provided immediately following each comment excerpt. However, in instances where several commenters raised similar or related issues, EPA has grouped these comments together and provided a single response after the first comment excerpt in the group and referenced this response in the other comment excerpts. In some cases, EPA provided responses to specific comments or groups of similar comments in the preamble to the final rulemaking. Rather than repeating those responses in this document, EPA has referenced the preamble.

While every effort was made to include significant comments related to 40 CFR Part 98, Subpart OO—Suppliers of Industrial Greenhouse Gases in this volume, some comments inevitably overlap multiple subject areas. For comments that overlapped two or more subject areas, EPA assigned the comment to a single subject category based on an assessment of the principle subject of the comment. For this reason, EPA encourages the public to read the other volumes of this document with subject areas that may be relevant to 40 CFR Part 98, Subpart OO—Suppliers of Industrial Greenhouse Gases.

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SUBPART OO—SUPPLIERS OF INDUSTRIAL GREENHOUSE GASES

1. DEFINITION OF SOURCE CATEGORY

Commenter Name: Ilyse Schuman
Commenter Affiliation: Medical Imaging and Technology Alliance (MITA), a division of The Assoc. for Elec. & Medical Imag. Manufacturers (AEMA)
Document Control Number: EPA-HQ-OAR-2008-0508-0550.1
Comment Excerpt Number: 1

Comment: Subsections 98.2(a)(4)(B-C), (74 FR 16612) state that "importers and exporters" of industrial greenhouse gases with bulk shipments exceeding 25,000 metric tons of CO2e are required to report. Subsection 2(d) in that same section, which provides the emissions calculation procedure for "importers and exporters," states "the owner or operator shall calculate the total annual CO2e of all the industrial GHGs that the company imported and the total annual CO2e of all the industrial GHGs that the company exported during the reporting year. . . ." This is not consistent with the overall approach embodied in the rule in two ways. First, that this requires reporting of all amounts imported or exported rather than emissions. Second, it is inconsistent in that this threshold is by company when all other thresholds relate to individual facilities. MITA believes that reporting imports and exports (in the case of other countries) would be redundant to the reports submitted by users of the industrial gases at specific sites. It would also be more accurate to report emissions from sites than to report amounts imported and exported by company.

Response: As stated in the proposed rule, because fluorinated GHGs and N_2O have an extremely large number of relatively small downstream sources, reporting of downstream emissions of these gases would be incomplete, impractical, or both. On the other hand, the number of upstream producers, importers, and exporters is comparatively small, and the quantities that will be reported by individual gas suppliers are often quite large. Thus, upstream reporting is likely to be far more complete and cost-effective than downstream reporting. For these reasons, we are requiring upstream reporting of the quantities required to estimate U.S. consumption of N2O and fluorinated gases. "Consumption" is defined as the sum of the quantities of chemical produced in or imported into the U.S. minus the sum of the quantities of chemical transformed (used as a feedstock in the production of other chemicals), destroyed, or exported from the U.S. By accounting for all chemical flows into and out of the U.S., including production, imports, exports, transformation and destruction, our approach results in an estimate of consumption that is more closely related to actual U.S. emissions than are estimates of consumption that do not account for all of these flows.

For a response to the comment that imports and exports are not "emissions," please see the Response to Comments Document for legal issues.

Commenter Name: Maureen Beatty
Commenter Affiliation: National Refrigerants, Inc. (NRI)
Document Control Number: EPA-HQ-OAR-2008-0508-0434.1
Comment Excerpt Number: 11

Comment: NRI believes that the rule should cover importers of products containing HFCs in those sectors such as pre-charged refrigeration equipment and closed-cell foams, where EPA has determined that amounts of fluorinated GHGs are well known and typically listed on the product's nameplate. Id. at 16,581; see EPA, "Technical Support Document for Imports of Fluorinated Greenhouse Gases (GHGs), N20 and CO_2 in Products: Proposed Rule for Mandatory Reporting of Greenhouse Gases" (Feb. 4, 2009) at 5 ("HFC Products TSD"). Import of products containing HFCs and other fluorinated GHGs represents a significant portion of imports -- the HFC Products TSD estimates these imports constitute 5-10% of U.S. consumption of fluorinated GHGs. Id. at 4. Indeed, proposed legislation such H.R. 2454, specifically includes such importation of pre-charged products in its HFC phase down requirements and, thus, reporting would support the implementation of any cap and trade program that includes such pre-charged products.

Response: Please see Section OO of the preamble for a response to this comment.

Commenter Name: Maureen Beatty
Commenter Affiliation: National Refrigerants, Inc. (NRI)
Document Control Number: EPA-HQ-OAR-2008-0508-0434.1
Comment Excerpt Number: 14

Comment: NRI fully supports the Reporting Rule's exclusion from coverage of HFCs and other fluorinated gases that are recycled or reclaimed as well as heels in imported shipments. Id. at 16,578. EPA should be sure that the definitions of these terms are consistent with those used in the CAA and its implementing regulations. The exclusion of recycled and reclaimed HFCs is important because these recycled or reclaimed gases will have already been accounted for at the time they were initially produced or imported.

Response: EPA agrees with the commenter that the rule should exclude fluorinated GHGs that are recycled or reclaimed as well as heels in imported shipments. Subpart OO, §98.410(b) provides a definition of "production" that explicitly excludes the reuse or recycling of a fluorinated GHG. This definition of production is consistent with that at §82.3 for ozone-depleting substances. In addition, the mass produced at 98.413(b) excludes "used fluorinated GHG or nitrous oxide added to the production process upstream of the output measurement." EPA considers the term "used" to encompass F-GHGs that are recycled or reclaimed as those terms are defined in Part 82, as well F-GHGs that are reused without any treatment.

Commenter Name: John M. Batt
Commenter Affiliation: Airgas, Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-0408.1
Comment Excerpt Number: 19

Comment: This source category applies to producers, bulk importers and bulk exporters of nitrous oxide and fluorinated greenhouse gases. Under Subpart A General Provisions §98.6 "Bulk" is defined "with respect to industrial GHG suppliers, means the transfer of a product inside containers, including but not limited to tanks, cylinders, drums, and pressure vessels." This definition of 'bulk' provided in §98.6 would cover virtually all movement of any amount of nitrous oxide, and there would be no 'non-bulk' product, rendering the definition of the term 'bulk' meaningless. An importer or exporter would have to consider all volume of product shipped, regardless of container size or individual shipment quantity, in reaching the threshold of

25,000 MT CO2e, and their reporting requirements. The industry considers 'bulk' nitrous oxide to be tank trucks of refrigerated liquid and tube trailers of pressurized product. These containers would contain 20,000 lbs. or more of nitrous oxide. We ask that the EPA consider defining bulk nitrous oxide as "the transfer of product inside containers in amounts greater than or equal to 20,000 lbs. per shipment"

Response: The term "bulk" is intended to distinguish imports and exports in containers (cylinders, drums, etc.) from imports and exports in products; it is not intended to establish a minimum container or shipment size below which reporting would not be required. Nevertheless, EPA is including a provision in the industrial gas supply reporting requirements (98.416) that exempts small shipments (i.e., those including less than 250 mtCO2e) from the import and export reporting requirements. More discussion of this exemption can be found in the response to comment number EPA-HQ-OAR-2008-0508-0793.1, excerpt 27.

Commenter Name: Keith Adams
Commenter Affiliation: Air Products and Chemicals, Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-1142.1
Comment Excerpt Number: 49

Comment: Destruction, with respect to fluorinated GHGs, is defined as the "...expiration of a fluorinated GHG to the destruction efficiency actually achieved. Such destruction does not result in a commercially useful end product." [98.6]. Subpart OO requires estimation of the total mass of each fluorinated GHG destroyed on an annual basis. Air Products Question: Air Products respectfully requests clarification of this definition considering industry practices for air pollution control at GHG production facilities. Specifically, are pollution controls devices (e.g., scrubbers) designed to control emissions of pollutants such as HF, HCl or F2 in the process gas stream, which also contains low concentrations of fluorinated GHGs, considered devices for "destruction" of the fluorinated GHGs? Fluorinated GHGs may pass through these control devices relatively unchanged, and, as such, Air Products does not consider this process to be destruction.

Response: The proviso "to the destruction efficiency actually achieved" prohibits facilities from claiming more destruction than occurs in fact. To the extent that pollution control devices do not destroy F-GHGs, facilities will not be allowed to claim that these devices destroy F-GHGs.

Commenter Name: Jeff A. Myrom
Commenter Affiliation: MidAmerican Energy Holdings Company
Document Control Number: EPA-HQ-OAR-2008-0508-0581.1
Comment Excerpt Number: 55

Comment: MidAmerican agrees that it is reasonable to exclude ODS from reporting because such chemicals are already scheduled to be phased out per the Montreal Protocol and Title VI of the CAA. Regarding Options 1 and 2, Option 1 is the preferred option as it allows EPA to universally set the list of what fluorinated GHGs must be reported.

Response: Please see Section OO of the preamble for a response to this comment.

Commenter Name: Lorraine Krupa Gershman
Commenter Affiliation: American Chemistry Council (ACC)
Document Control Number: EPA-HQ-OAR-2008-0508-0423.2
Comment Excerpt Number: 164

Comment: EPA appropriately segregated the fluorochemical production facility reporting requirements in subpart L from the fluorinated GHG marketing reporting requirements in subpart OO. Subpart L is limited to facilities that produce a fluorinated GHG, whereas subpart OO is limited to facilities marketing fluorinated GHGs for sale into commerce. Because of the millions of potential downstream fluorinated GHG users, including automobiles, residences, commercial buildings, and medical propellants, individuals, companies, and other entities actually responsible for industrial GHG emissions should not be required to report their emissions. EPA appropriately identified the introduction to commerce as the downstream industrial gas reporting threshold.

Response: EPA agrees with the commenter that production of fluorinated GHGs should be reported separately from emissions of fluorinated GHGs that occur during the production process. Subpart OO addresses the former, while subpart L addresses the latter. It is important to note that Subpart OO requires reporting of "production," not sales.

Commenter Name: Lorraine Krupa Gershman
Commenter Affiliation: American Chemistry Council (ACC)
Document Control Number: EPA-HQ-OAR-2008-0508-0423.2
Comment Excerpt Number: 165

Comment: Many facilities removing and destroying industrial GHGs will also be required to report under proposed Part 98 subparts L and/or O. Those facilities should have the option of reporting industrial GHG destruction under any applicable part 98 subpart.

Response: EPA proposed destruction provisions for facilities producing fluorinated gases in three separate subparts: Subpart L, Subpart O, and Subpart OO. Although there are many similarities across the chemicals and processes covered by the three subparts, the subparts (and the destruction provisions within them) were deliberately tailored to different sources and types of emissions. The destruction provisions in Subpart L address F-GHGs that are removed from the production process. The destruction provisions in Subpart O address HFC-23, generally HFC-23 generated as a byproduct during HCFC-22 production. The destruction provisions in Subpart OO address F-GHGs that were previously counted as produced.

Because Subpart OO is focused on quantifying the supply of industrial GHGs available in the U.S., the destruction provisions in this subpart are focused on destruction of F-GHGs that are removed from this supply. To be removed from the supply, the F-GHGs must have been previously introduced to it. If F-GHGs that were never counted as produced are subtracted from the supply, the supply will be underestimated. In the final rule, EPA is requiring F-GHG producers who report destruction of F-GHGs to distinguish between their destruction of F-GHGs that were previously counted as produced and their destruction of F-GHGs that were never counted as produced. F-GHGs previously counted as produced may include, for example, used F-GHGs that are sent to the facility for reclamation but are destroyed because they are

irretrievably contaminated. F-GHGs that are never counted as produced include F-GHGs that are removed from the production process as wastes. EPA is requiring reporting of both quantities under Subpart OO.[1]

EPA may ultimately require reporting of the destruction of production process wastes under Subpart L when that is finalized. However, since L is not final and production process wastes that are captured and sent off-site for destruction are reportable under OO, EPA for completeness is requiring reporting under OO of destruction of production process wastes that are destroyed on site.

Commenter Name: Kevin Messner
Commenter Affiliation: Association of Home Appliance Manufacturers (AHAM)
Document Control Number: EPA-HQ-OAR-2008-0508-0339.1
Comment Excerpt Number: 1

Comment: We support the exclusion of products being imported or exported that contain fluorinated GHGs. It would be unworkable and without any benefit to include these products in the reporting requirements. The proposed regulations stated purpose is "to require reporting of greenhouse gas emissions from all sectors of the economy." Pre-charged equipment and refrigerator foams are hermetically sealed systems that essentially emit no GHGs. There can be small leaks, but it is a minuscule amount relative to the threshold requirement of 25,000 metric tons of CO2e. To put this in perspective, refrigerators, room air conditioners, and dehumidifiers for the home use contain a few ounces of refrigerant and only a few pounds of GHGs in the refrigerator foam. Adding an unnecessary and costly government reporting requirement that yields no apparent benefit, due to the fact that these products are hermetically sealed, should not occur in good economic times, much less during this trying economic climate.

Response: Please see Section OO of the preamble for a response to this comment.

Commenter Name: Lorraine Krupa Gershman
Commenter Affiliation: American Chemistry Council (ACC)
Document Control Number: EPA-HQ-OAR-2008-0508-0423.2
Comment Excerpt Number: 170

Comment: EPA does not address the importation of industrial GHGs contained in products. EPA notes in the TSD that industrial GHGs contained in products represent approximately 10% of the total industrial GHG market, and should be included in any part 98 reporting system. Not requiring reporting of these imported industrial GHGs represents a disincentive for domestic manufacturers, who would have to carry the burden of reporting that would escape importers. Because very few companies import appliances and blown-foam stock into the United States, EPA would not be increasing the compliance burden by requiring all industrial GHGs be reported under subpart OO.

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[1] EPA is also requiring F-GHG producers to make this distinction for the F-GHGs that they are sending off-site for destruction. EPA is establishing a special category for F-GHGs that recaptured from the production process only to be sent off-site for destruction. Since these F-GHGs leave the facility, they are counted as "produced" for tracking purposes.

Response: Please see Section OO of the preamble for a response to this comment.

Commenter Name: Rich Raiders
Commenter Affiliation: Arkema Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-0511.1
Comment Excerpt Number: 3

Comment: Although industrial GHGs only represent a small percentage of the total national CO2e emissions, EPA correctly notes that industrial GHG emissions are increasing, the global warming potential ("GWP") of many industrial gases exceeds the CO2 GWP by hundreds or thousands on a pound-for-pound basis, and the universe of industrial GHG producers and importers only includes a few dozen entities nationally. While the technical support document ("TSD") discussing imported industrial GHGs contained in products indicates that EPA should require reporting of such imports, proposed Part 98 Subpart OO does not include reporting of imported industrial GHGs contained in products in the source category applicability statement. Producers of domestically manufactured products containing industrial GHGs would report their industrial GHG usage, either as direct reporters or from reports filed by their suppliers. Not including imported industrial GHGs contained in products allows offshore manufacturers a loophole that provides domestic product manufacturers a disincentive for either maintaining or increasing domestic production of industrial GHG containing products. A climate change reporting rule should not contain these disincentives to domestic manufacturing, and the reporting rules should be fairly applied to all aspects of a given market.

Response: Please see Section OO of the preamble for a response to this comment.

Commenter Name: Rich Raiders
Commenter Affiliation: Arkema Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-0511.1
Comment Excerpt Number: 65

Comment: We support the several EPA efforts to address leakage in the proposal, including bulk industrial GHG leakage addressed in proposed Subpart PP. Leakage is considered, for climate change purposes, the transfer of GHG emissions from one nation to another due to economic shifts. i.e., when manufacturing or other economic activity migrates from one country to another. Because GHG emissions from any country impact all nations, America does not benefit from EPA promulgating rules that encourage leakage by requiring reporting only of domestic manufacturers. The current Subpart OO penalizes domestic manufacturers who include industrial GHGs in articles by requiring reporting that importers are currently exempt from reporting, while encouraging the migration of GHG emitting activity to nations that do not substantially inventory GHG emissions. As EPA indicated in the Technical Support Document for Imports of Fluorinated Greenhouse Gases, N_2O, and CO_2 In Products (EPA-HQ-OAR-2008-0508- 0043, Page 4, February 4, 2009), imported articles, such as portable air conditioners, dehumidifiers, chillers, and automobiles constitute between five and ten percent of industrial GHG imports in 2006. EPA should amend Subpart OO in several locations to incorporate reporting of cross-border leakage of industrial GHGs in articles imported to and/or exported

from, the United States. Including articles in the Subpart OO reporting scheme will provide EPA a more complete inventory system for the industrial GHG market segment, without a substantial burden on the importers and exporters of such articles. EPA should consider the likely economic disruption that would occur as manufacturing operations shift offshore. Many products would no longer be domestically manufactured, which would further weaken the national trade balance. Many developing countries that would receive this production utilize less carbon-efficient electricity and process energy generation methods, increasing the total carbon emissions required to manufacture the same unit item versus what energy requirement would be in the United States. If EPA's goal is to minimize manufacturing-related carbon emissions, the best practical method to reach this goal is to retain production of industrial GHG-containing products in the United States. Comprehensive industrial GHG reporting, including complete reporting of industrial-GHG containing articles manufactured or imported into the U.S., will help minimize total production-related GHG emissions.

Response: Please see Section OO of the preamble for a response to this comment.

Commenter Name: Ilyse Schuman
Commenter Affiliation: Medical Imaging and Technology Alliance (MITA), a division of The Assoc. for Elec. & Medical Imag. Manufacturers (AEMA)
Document Control Number: EPA-HQ-OAR-2008-0508-0550.1
Comment Excerpt Number: 2

Comment: The rule lacks clarity on whether "bulk shipment" means shipping gases alone or gases contained in systems. It would be an added economic burden on customers to have to purchase and fill units with specified gases at their business location. This could result in greater release of GHGs, because those filling units may lack expertise in performing that function.

Response: Please see Section OO of the preamble for a response to this comment.

Commenter Name: Rich Raiders
Commenter Affiliation: Arkema Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-0511.1
Comment Excerpt Number: 14

Comment: Many imported foam articles contain a fraction of the GHGs often used in foam manufacturing. While some of the gaseous foam blowing agent exits the foam during manufacturing, a significant portion of the foam blowing gaseous agent is retained in the foam and emitted over the life of the foam material. For foam products containing gaseous HFC manufactured in the United States, the HFC allocation is managed at the HFC producer level in Subpart OO. However, for articles containing gaseous HFC blown foam components, the HFC emissions would not be captured in the proposed Subpart OO, and should be added to the inventory system at the point of import into the United States. EPA should publish guidance concerning how to allocate the HFC content of imported blown foams at the point of manufacture and the point of import.

EPA should also recognize that not all fluorocarbons exhibit significant radiative forcing, and should restrict the definition of HFCs to those compounds that are designated as significant greenhouse gases. UNFCCC also recognize that many hydrocarbons, such as pentane, isobutene, and cyclopentane, which are common replacement products for many industrial GHGs in several markets, exhibit a measured GWP that the IPCC continues to debate whether they exhibit a significant climate change impact, typically ranging between one and approximately 50, and exhibit an atmospheric lifetime of less than one year.

EPA describes high GWP values for several currently marketed fluorocarbons, and notes at 74 Fed. Reg. 16579 that many of the currently established fluorinated GHGs exhibit atmospheric lifetimes significantly beyond one year. However, the fluorochemical market is now developing new HFC/HFO materials with substantially lower GWPs that exhibit atmospheric lifetimes of less than one year that will likely not exhibit a significant climate change impact as determined by IPCC evaluation. EPA should exempt any material, regardless of its molecular composition, that exhibits GWPs and atmospheric lifetimes comparable to the hydrocarbons that EPA appropriately declined to require reporting for under this proposed reporting regulation. By setting a GWP threshold in this reporting rule consistent with IPCC significant climate change impact thresholds, EPA would likely encourage fluorochemical manufacturers to develop and market lowGWP replacements for many of the high-GWP products in the market today.

EPA should promulgate this HFC definition: “Hydrofluorocarbons or HFCs means a class of GHGs primarily used as liquid or gaseous phase refrigerants or industrial chemicals, consisting of at a minimum hydrogen, fluorine, and carbon, excluding solid fluoropolymers, aqueous suspensions of solid fluoropolymers, and compounds that the IPCC has determined do not exhibit significant climate change impact. HFCs consist of at least one but no more than six atoms of hydrogen, fluorine, and carbon.” EPA should also modify the definition of GHG at § 98.6 to clarify that chlorofluorocarbons (“CFC”) are only regulated outside the current bounds of the Montréal Protocol as promulgated at 40 CFR 82 and for destruction credits under Federal Climate Change legislation. Part 82 regulations already require reporting of production allowances and regulate end user activities, such as maintenance of large refrigerant units. EPA should evaluate Part 82 and craft the proposed GHG reporting rule to maximize the synergies between existing Part 82 and proposed Part 98. Destruction reporting should be consistent with the Federal legislation. As the fluorochemical industry develops newer products that do not exhibit the long atmospheric lifetimes that characterize the currently marketed HFCs, the 100-year IPCC atmospheric lifetime analysis may not be appropriate for all HFCs that enter the future marketplace.

EPA has addressed changing technology concerns in the VOC delisting process that manages the definition of VOC at 40 CFR 51.100(s) (See “Air Quality: Revision to Definition of Volatile Organic Compounds – Exclusion of HFE7300,” 72 Fed. Reg. 2193, January 18, 2007 (exclusion of HFE-7300 from VOC list based on de minimis photochemical activity)). Congress provided Hazardous Air Pollutant (“HAP”) delisting in § 112(b)(2) based on the § 11 2(a)(7) definition of “adverse environmental impact.” Congress’ adverse environmental impact definition includes “any significant and widespread adverse effect, which may reasonably be anticipated, to wildlife, aquatic life, or other natural resources, including adverse impacts on populations of endangered or threatened species or significant degradation of environmental quality over broad areas.” As the fluorochemical market develops materials that do not exhibit the long atmospheric radiative forcing found in today’s fluorinated GHGs (See “Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act,” 74 Fed. Reg. 18895, Footnote 18, April 24, 2009), fluorinated GHGs with atmospheric lifetimes less than

the one year cited by EPA as criteria for the endangerment finding may enter the market. Because EPA does not control IPCC GWP listings, a compound could be listed by IPCC while not meeting EPA's atmospheric lifetime criteria. EPA should develop a delisting system to allow the regulated community to petition to remove a GHG not meeting the one-year criteria from the GHG list, in a manner similar to how EPA currently manages the VOC and HAP lists.

Response: Please see Section OO of the preamble for a response to this comment.

Commenter Name: Jeffry C. Muffat
Commenter Affiliation: 3M Company
Document Control Number: EPA-HQ-OAR-2008-0508-0793.1
Comment Excerpt Number: 15

Comment: For Subpart OO purposes, several issues are in need of clarification. First, like in the Subpart L example provided above, clarification is needed as to whether the reporting of the mass produced or transformed or sent to another facility to be transformed is based on the final product that is shipped off the plant site or whether it is based on the product of individual processes, i.e. an isolated intermediate. In the diagram above, we would read the language of proposed Subpart OO to require reporting of all of the mass transformed and produced if Product 1 [See DCN:EPA-HQ-OAR-2008-0508-0793.1, p.23.] is a fluorinated GHG, but that none of the mass produced or transformed would be reportable if Product 1 is not a GHG since the process is not "producing" or "manufacturing" a GHG. We request that EPA confirm this interpretation of the proposed rule. Secondly, for Subpart OO purposes, we are unclear how the proposed rule is to be interpreted with respect to Intermediate #2 in the diagram above. Assuming that this material will be shipped to another 3M facility to be used in the making of a fluorinated GHG product at that facility, it would appear to be covered by Subpart OO. However, if it is to be used at the other 3M facility in the making of a non-fluorinated GHG product, then it is not clear that it would be covered by Subpart OO. We request that EPA provide guidance on this type of scenario.

Response: Upon review of this issue, EPA has elaborated upon the definition of "produce" to clarify what it does and does not include. The definition now explicitly includes the manufacture of a fluorinated GHG for use in a process that will result in the transformation of that GHG either at or outside of the production facility. Thus, the rule requires facilities to report their production of "isolated intermediates" that are fluorinated GHGs even if these intermediates are subsequently transformed on site.

Commenter Name: Marc J. Meteyer
Commenter Affiliation: Compressed Gas Association (CGA)
Document Control Number: EPA-HQ-OAR-2008-0508-0981.1
Comment Excerpt Number: 53

Comment: The definition of this source category is limited to facilities that produce a GHG from any raw material or feedstock chemical, and excludes the reuse or recycling of a fluorinated GHG. Referring to Subpart A, General Provisions, the definition of production is limited to reaction, oxidation, or other chemical or physical methods of transformation. Furthermore, transform is to use and entirely consume (except for trace concentrations) nitrous oxide or fluorinated GHGs in the manufacturing of other chemicals for commercial purposes. Based on

these definitions, it is the interpretation of CGA member companies that the purification process does not meet the definition of production or transformation, and this process is not subject to this subpart.

Response: Reuse and recycling of fluorinated GHGs, including purification of used fluorinated GHGs, are not required to be reported under this subpart unless used fluorinated GHGs are added to the production process upstream of the production measurement. In this case, the mass of used fluorinated GHGs that is added must be measured, subtracted from the production total, and reported.

Commenter Name: Marc J. Meteyer
Commenter Affiliation: Compressed Gas Association (CGA)
Document Control Number: EPA-HQ-OAR-2008-0508-0981.1
Comment Excerpt Number: 55

Comment: The definition of this source category is limited to facilities that produce a GHG from any raw material or feedstock chemical, and excludes the reuse or recycling of a fluorinated GHG. Referring the Subpart A - General Provisions, the definition of production is limited to reaction, oxidation, or other chemical or physical methods of transformation. Furthermore, transform is to use and entirely consume (except for trace concentrations) nitrous oxide or fluorinated GHGs in the manufacturing of other chemicals for commercial purposes. It is believed that the act of purchasing a fluorinated greenhouse gas, purifying and repackaging that gas is not production, and can be excluded under §98.410(b), as the purification process does not meet the definition of transformation or production. Furthermore, this purification and repackaging is believed to fit the definition of "bulk" that is defined in Subpart A. This distinction is important as importers and exporters are subject to the 25,000 metric ton CO2e per year threshold, while all producers, regardless of quantity are required to report.

Response: Please see the response to comment number EPA-HQ-OAR-2008-0508-0981.1, excerpt 53.

Commenter Name: Marc J. Meteyer
Commenter Affiliation: Compressed Gas Association (CGA)
Document Control Number: EPA-HQ-OAR-2008-0508-0981.1
Comment Excerpt Number: 56

Comment: §98.410 identifies bulk importers and bulk exporters as being included in the source category. Under Subpart A General Provisions §98.6 “Bulk” is defined “with respect to industrial GHG suppliers, means the transfer of a product inside containers, including but not limited to tanks, cylinders, drums, and pressure vessels.” This definition of ‘bulk’ provided in §98.6 would cover virtually all movement of any amount of nitrous oxide, and there would be no ‘non-bulk’ product, rendering the definition of the term ‘bulk’ meaningless. An importer or exporter would have to consider all volume of product shipped, regardless of container size or individual shipment quantity, in reaching the threshold of 25,000 MT CO2e, and their reporting requirements. The industry considers ‘bulk’ nitrous oxide to be tank trucks of refrigerated liquid and tube trailers of pressurized product. These would contain 20,000 lbs. or more of nitrous

oxide. We ask that the EPA consider defining bulk nitrous oxide as “the transfer of product inside containers in amounts greater than or equal to 20,000 lbs. per shipment”

Response: Please see the response to comment number EPA-HQ-OAR-2008-0508-0408.1, excerpt number 19, for a response to this comment.

Commenter Name: Marc J. Meteyer
Commenter Affiliation: Compressed Gas Association (CGA)
Document Control Number: EPA-HQ-OAR-2008-0508-0981.1
Comment Excerpt Number: 58

Comment: CGA Comment: This section addresses how to calculate the emissions from a process that produces or transforms fluorinated greenhouse gases or nitrous oxide. Emissions from purification processes, repackaging, and bulk importers/exporters are not addressed. Purification processes should be excluded from this subpart. Furthermore, fugitive emissions from importers and exporters that repackage these gases should also be excluded from reporting.

Response: In general, EPA plans to address reporting of actual emissions from fluorinated GHG production in Subpart L, which will be addressed at a later date. Regarding reuse and recycling of fluorinated GHGs, including purification of used fluorinated GHGs, please see the response to comment number EPA-HQ-OAR-2008-0508-0981.1, excerpt 53.

Commenter Name: Lorraine Krupa Gershman
Commenter Affiliation: American Chemistry Council (ACC)
Document Control Number: EPA-HQ-OAR-2008-0508-0423.2
Comment Excerpt Number: 166

Comment: EPA should base subpart OO reporting on the existing EPA voluntary HFC reporting system, which includes periodic reporting of produced industrial GHG and on per-shipment bulk industrial GHG imports and exports. Each fluorinated GHG report should be consistent with the reporting requirements for production, imports and exports in EPA‘s current HFC electronic data pilot project. This HFC pilot reporting system has been designed by EPA and HFC producers to be consistent with the current ODS class I and class II recordkeeping and reporting requirements found in 40 CFR 82.13 and 82.24. HFC producers are familiar with these reporting requirements and have streamlined internal processes to be consistent with the data requirements of the current reporting requirements. This proposed rule contains a number of requirements that are inconsistent with the current HFC reporting and recordkeeping include such requirements as reporting in metric tonnes vs. kilograms, annual reporting vs. quarterly reporting, and additional recordkeeping for exporters. This proposed reporting also goes beyond the scope of the HFC reporting system to include the reporting of non-GHG reactants and by-products. In addition, any recordkeeping and reporting requirements should be applicable also to ³products containing´ an HFC which is consistent with the current language in the latest draft of the American Clean Energy and Security Act of 2009. EPA could and should adapt the import section of the voluntary HFC reporting system to collect data concerning industrial GHGs imported and contained in products.

Response: Please see Section OO of the preamble for a response to this comment.

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2. REPORTING THRESHOLD

Commenter Name: Rich Raiders
Commenter Affiliation: Arkema Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-0511.1
Comment Excerpt Number: 12

Comment: 1. Add a sentence to § 98.412 to require reporting of all GHG imports: "You must report the GHG content of articles containing non-ODS fluorinated GHGs that you import into the United States." 2. Modify § 98.4 17(c) to include provisions for reporting industrial GHGs contained in articles: "In addition to the data required by 98.3(g), the designated representative of a bulk importer or an importer of non-ODS industrial GHG containing articles shall retain ..." 3. Add 98.41 7(c)(4) to require records retention of the name, description, and annual quantity of industrial GHG in each article containing industrial GHG imported into the United States. 4. Modify § 98.4 17(c) to include provisions for reporting industrial GHGs contained in articles: "In addition to the data required by 98.3(g), the designated representative of a bulk exporter or an exporter of non-ODS industrial GHG containing articles shall retain ..." 5. Replace the word "importer" with the word "exporter" in § 98.41 7(d)(2). 6. Add § 98.4 17(d)(3) to require records retention of the name, description, and annual quantity of non-ODS industrial GHG in each article containing industrial GHG exported from the United States. The proposed modifications will maximize the EPA GHG reporting system usefulness as a tool to evaluate all industrial GHGs, excluding those covered by the Montréal Protocol, without significantly increasing the reporting burden on the regulated community. EPA will add a very small number of reporters into the reporting system, likely less than 100 as described in the EPA technical support documents ("TSD") published in the rulemaking docket for this proposal. Comprehensive industrial GHG information will also allow EPA to directly use the reporting system to fulfill United Nations Framework Convention for Climate Change ("UNFCCC") periodic GHG inventory reporting obligations while minimizing expenditure of taxpayer resources. With full reporting, EPA will not need to infer any industrial GHG usage or emission rates, and will be able to directly compare emissions reported into the GHG reporting system to other sources of GHG emissions and use data, such as company reports, consolidated trade association reports, and climate market filings.

Response: Please see Section OO of the preamble for a response to this comment.

Commenter Name: Rich Raiders
Commenter Affiliation: Arkema Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-0511.1
Comment Excerpt Number: 9

Comment: EPA should also include the fluorinated GHG supply category, proposed 40 CFR 98 Subpart OO, as an "all-in" reporting category, where all importers of fluorinated GHGs must

participate in the reporting system. The current proposal requires that importers introducing 25,000 mt CO2e into the United States market need not participate in the GHG reporting system. EPA identifies one million mt CO2e that would escape reporting from bulk industrial GHG (predominantly HFCs) imports (EPA-HQ-OAR2008-0508-0041, Page 7), and ten million mt CO2e that would escape reporting from products (or articles, as defined at 40 CFR 372.3) containing industrial GHGs (EPA-HQOAR-0508-0043, Page 4). These industrial GHGs that would not be subject to the proposed GHG reporting system comprise approximately 10% of the 215-million mt CO2e industrial GHGs (not including ozone depleting substances ("ODS")) used in the United States in 2006, the published baseline year. (Id.) These potentially unreported emissions represent "leakage" of industrial GHGs from other countries into the United States, because, while the manufacturing, including the manufacturing based GHG emissions, occurred in another country, emissions from use of these products will occur in the United States. In the current economic climate, manufactures face a wide variety of incentives to offshore manufacturing. EPA should make sure that promulgating a GHG reporting system that exempts reporting of industrial GHGs, both the chemical and from manufactured products and articles does not become the next rationale for manufacturers and distributors of such products to justify shifting additional manufacturing offshore. EPA previously identified the critical nature of the GHG leakage problem as it relates to the transnational competitive balance in several industries. (73 Fed. Reg. 44414, July 30, 2008) Full accounting of all fluorochemical emissions and supplies will place industrial GHG manufacturers on more even competitive footing than a reporting rule exempting parts of the fluorochemical industry. The industrial GHG source categories should include the most comprehensive baseline available to EPA, including all reporting of all industrial GHGs introduced into the stream of commerce. Please note that current legislative initiatives include chemicals and products imported into the US.

Response: Please see Section OO of the preamble for a response to the comment regarding the import of products containing fluorinated GHGs. EPA reviewed the commenter's concern regarding the quantity of bulk industrial GHG imports not covered using the 25,000-mtCO2e threshold, based on the February 6, 2009 technical support document (TSD) (EPA-HQ-OAR2008-0508-0041). According to the TSD, this threshold encompasses all but about 500,000 metric tons of CO2e, representing only 0.04% of total US fluorinated GHG imports. Thus, the 25,000 mtCO2e thresholds chosen by EPA for importers and exporters cover the vast majority of transactions, while excluding many small importers and exporters.

Commenter Name: John M. Batt
Commenter Affiliation: Airgas, Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-0408.1
Comment Excerpt Number: 20

Comment: Airgas does not object to the proposed "All-In" Threshold for Producers in the preamble and in §98.2(a)(4)(v). We are not currently aware of any small-scale production facilities (for instance R&D) that would be inadvertently included with an "All In" threshold approach. However, this uncertainty could be addressed by setting a capacity-based threshold of 25,000 metric tons CO2e.

Response: In the final rule, EPA has included a general Research and Development (R&D) exemption that will address R&D production facilities. This provision is provided under Subpart A General Provisions §98.6.

Commenter Name: Maureen Beatty
Commenter Affiliation: National Refrigerants, Inc. (NRI)
Document Control Number: EPA-HQ-OAR-2008-0508-0434.1
Comment Excerpt Number: 13

Comment: NRI seeks clarification that Proposed § 98.411, Id. at 16,722 (reporting threshold for suppliers of industrial gases,) should not be read to require a producer or importer of fluorinated GHGs which meets the reporting threshold for those gases also to monitor and report emissions of all other types of GHGs if such a producer or importer would not otherwise meet the thresholds for the non-fluorinated GHGs. In other words, an importer of HFCs over the 25,000 MT CO2e threshold should not be required to report on any other GFIG emissions from its domestic facilities if such facilities would not meet the relevant threshold for monitoring and reporting CO_2 and other non-HFC gases it might emit. This clarification could be achieved simply by deleting "GHG" before "emissions" and adding "of those gases" after "emissions" at the end of the sentence in Proposed § 98.411. Similarly, Proposed § 98.412, Id. at 16,722 (GHGs to report), could be read to require reporting of any GHGs emitted during production, import, export, transformation or destruction, even if those amounts were below applicable thresholds. This provision should be clarified by adding "fluorinated" before "GHG" at the beginning of the sentence.

Response: Upon review, EPA considers that the language at § 98.412 and 98.2(a)(4) to be clear regarding the reporting obligations of industrial gas suppliers. Paragraph 98.2 (a)(4) states "[For a]ny supplier of any of the products listed in this paragraph (a)(4). . ., the GHG emissions report must cover all applicable products for which calculation methodologies are provided in subparts KK through PP of this part." The subparts KK through PP are the supply provisions of the rule. They cover potential rather than actual emissions. Reporting of actual emissions is triggered separately, under paragraphs 98.2(a)(1), (2), and (3), which refer to subparts C through JJ. Only if an industrial gas supplier triggered one or more of the latter thresholds would it be required to report actual emissions. Paragraph 98.2(a)(4) is similarly clear, stating "You must report the GHG emissions that would result from the release of the nitrous oxide and each fluorinated GHG that you produce, import, export, transform, or destroy during the calendar year." Even if carbon dioxide emissions were associated with the import or export of an HFC, they would not specifically "result from the release" of the HFC. Thus, they are not reportable under 98.2(a)(4).

Commenter Name: Maureen Beatty
Commenter Affiliation: National Refrigerants, Inc. (NRI)
Document Control Number: EPA-HQ-OAR-2008-0508-0434.1
Comment Excerpt Number: 10

Comment: NRI supports the Reporting Rule's proposed threshold for importers of 25,000 metric tons of CO2e per year. This is a reasonable figure that should capture the vast majority of HFC importation.

Response: EPA agrees with the commenter that the threshold for importers of industrial GHGs should be 25,000 metric tons of CO2e per year. This threshold captures the majority of industrial GHG imports into the United States.

3. GHGS TO REPORT

Commenter Name: Steven D. Meyers
Commenter Affiliation: General Electric Company (GE)
Document Control Number: EPA-HQ-OAR-2008-0508-0532.1
Comment Excerpt Number: 29

Comment: The proposed rule states the following: "We are not proposing to require that importers of products containing N_2O or fluorinated GHGs report their imports. In general, we are concerned that it would be difficult for importers to identify and quantify the GHGs contained in these products and that the number of importers would be high." GE supports the exclusion of products being imported or exported that contain fluorinated GHGs. Pre-charged equipment and refrigerator foams are hermetically sealed systems that essentially emit no GHGs. There can be small leaks, but it is a minuscule amount relative to the threshold requirement of 25,000 metric tons of CO2e. To put this in perspective, refrigerators, room air conditioners, and dehumidifiers for use in the home contain a few ounces of refrigerant and only a few pounds of GHGs in the refrigerator foam. Thus, given the number of importers of these product, it would be unworkable and without any meaningful benefit to include these products in the reporting requirements.

Response: Please see Section OO of the preamble for a response to this comment.

4. SELECTION OF PROPOSED GHG EMISSIONS CALCULATION AND MONITORING METHODS

Commenter Name: Rich Raiders
Commenter Affiliation: Arkema Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-0511.1
Comment Excerpt Number: 66

Comment: The EPA trial HFC reporting system requires the same data elements as would be required under proposed Subpart OO, but without the onerous data collection criteria proposed in Subpart OO. EPA modeled the system after the existing ODS producers reporting system that has successfully operated for several years. These systems use an EPA-provided Microsoft Excel template system for reporters to develop quarterly production, import, and export reports. Importer records are tied to United States Department of Commerce Customs Entry Summary Numbers, allowing EPA to cross-reference existing government records describing the materials being imported and the date of import. Exports are reported by destination country and by export customer. EPA does not require in-process reporting, appropriately relying on shipment data to determine quantities of HFCs entering the market. The data collected in the trial HFC reporting system are adequate for EPA to determine the amount of HFC entering and exiting the market, and serves as a viable basis for the mandatory reporting system. In the trial HFC reporting system, EPA expects reporters to utilize best judgment, given the available data, in reporting production, imports, and exports for each HFC and HFC blend managed by the reporter. EPA has not published any proscriptive data quality standards that may or may not be able to be met by the HFC production community. EPA should solicit data management data from the

participants in the trial HFC reporting system concerning the appropriate metering technologies in use through the HFC manufacturing and production industry to inform any data management and data quality criteria for this industry. Arkema uses a default tare weight for HFC cylinders and containers filled in the United States, fills the containers to ± 1% of the fill plus tare weight for each cylinder, closes the cylinder, and places the material into inventory for sale. In most cases, any remaining heel is left in the container before refill. HFC containers are rarely evacuated of all contents before refilling. Weigh scales in fluorochemical marketing service typically comply with tolerances in Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices As Adopted by the 91st National Conference on Weights and Measures, NIST Handbook 44, National Institute of Standards and Technology, United States Department of Commerce, Washington, DC 2007. Arkema fluorochemical marketing efforts include a wide variety of fluorinated GHG container sizes, from the 30- pound disposable cylinders typically used to service mobile and residential refrigeration units, to the half-ton and ton cylinders used for industrial service, or the bulk trailer, isotainer, or railcar shipping containers. Tolerances for these devices range from ± 0.1 to 0.3 lb for smaller cylinder sizes, to ± 3 to 4 lb for larger cylinders, to up to ± 550 lb for bulk containers. Calibration schedules also depend on the size of the scale, ranging from monthly for small cylinder filling scales to annually for rail scales. The necessary scale management program does not lend itself to any accuracy criteria as proposed by EPA at proposed § 98.414. EPA should rely on industry standard measurement criteria, especially when industry adopts governmental standards such NIST Handbook 44, instead of imposing accuracy criteria that does not fit common practice. Imported materials are accepted based on customs paperwork indicating the inbound quantities of materials reported on the appropriate shipping papers. The current trial HFC reporting system relies on customs import data to determine the amount of HFCs imported into the United States. EPA should rely on this information, as reported through the United States Customs Service, to determine imported HFCs. The existing EPA trial reporting system appropriately manages the Subpart OO expectations. EPA should finalize the trial reporting system for Subpart OO mandatory reporting, and should expand this reporting system for reporting other GHGs. By using the existing HFC voluntary reporting program as the Subpart OO compliance system, EPA can, at least for one subpart, develop and implement a part of the climate change reporting system that does not require three years lead time for reporters. A Subpart OO system that uses the existing program can be operational the first of 2010 with no transition issues. Furthermore, §98.417(d) should include an option (4) to allow facilities to reprocess heel material recovered from a returned industrial GHG cylinder that may not be suitable for direct resale but would add value as a recovered and reprocessed product.

Response: Please see Section OO of the preamble for a response to the comment regarding monitoring methods. With respect to use of data collected by the United States Customs service, upon review, EPA is not establishing any precision and accuracy requirements on imports and exports beyond those of Customs and Border Control.

See the response to comment EPA-HQ-OAR-2008-0508-0981.1, excerpt 64, for a response to the comment regarding container heels.

Commenter Name: Mary Munn
Commenter Affiliation: Fond du Lac Band of Lake Superior Chippewa
Document Control Number: EPA-HQ-OAR-2008-0508-0596
Comment Excerpt Number: 4

Comment: The exclusion noted below is a bit troubling. Requiring onerous reporting requirements on imports would aid in reducing these imports from countries that are not working on reductions. The only exemption should be given to imports whose point of manufacture has regulations equal US rules. The ease of reporting for the importer of the product is irrelevant. These types of loopholes must be eliminated. “We are not proposing to require that importers of products containing N_2O or fluorinated GHGs report their imports. In general, we are concerned that it would be difficult for importers to identify and quantify the GHGs contained in these products and that the number of importers would be high.” (pg 135)

Response: Please see Section OO of the preamble for a response to this comment.

Commenter Name: Maureen Beatty
Commenter Affiliation: National Refrigerants, Inc. (NRI)
Document Control Number: EPA-HQ-OAR-2008-0508-0434.1
Comment Excerpt Number: 16

Comment: To the maximum extent possible, EPA should ensure that regulations for monitoring, measuring, and reporting fluorinated GHG production and importation is consistent with related existing programs, namely the TRI and CAA Title VI requirements and regulations. Producers and importers already have familiarity with reporting on ODS (including HCFCs) produced and imported, and requiring similar information on HFCs and other fluorinated GHGs could be addressed at a reduced cost if reporting requirements were similar. Indeed, H.R. 2454 uses the existing CAA § 619 provisions as a basis for HFC reporting. On the other hand, measurement and reporting requirements at a level beyond existing requirements would impose unnecessary costs and delay and result in confusion. NRI recognizes that EPA has taken these existing programs into account, 74 Fed. Reg. at 16,579, though there are some differences that could be made consistent. For one, the Reporting Rule requires data on imports to be measured in tons, whereas Title VI reporting rules on Class II ODS require kilograms, the "preferred unit for Customs reporting." 74 Fed. Reg. at 16,581; see 40 C.F.R. § 82.24(c)(v). Measurement in kilograms would be preferable. NRI does agree with EPA that either kilograms or tons is preferable to measurement in metric tons of CO2e as this may lead to mistakes in calculations or the accuracy of GWPs used. See EPA, "Technical Support Document for Bulk Imports and Exports of Fluorinated GFIGs, N20 and CO_2: Proposed Rule for Mandatory Reporting of Greenhouse Gases," (Feb. 2, 2009) at 5. Moreover, EPA's reference to "total mass" in Proposed § 98.416(d)(1), 74 Fed. Reg. at 16,724, is confusing and might suggest EPA has a different type of measurement in mind. EPA may be better simply to say "total quantity of (40 C.F.R. § 82.24(c)(1)) or "total amount of industrial GHGs. As to reporting methodologies for producers, measurement, emissions calculations and reporting should be consistent with those requirements for reporting the emission and/or use of certain hazardous materials under TRI, a program with which such facilities are very familiar.

Response: Please see Section OO of the preamble for a response to this comment.

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5. DETAILED GHG EMISSION CALCULATION PROCEDURES/EQUATIONS IN THE RULE

Commenter Name: Lorraine Krupa Gershman
Commenter Affiliation: American Chemistry Council (ACC)
Document Control Number: EPA-HQ-OAR-2008-0508-0423.2
Comment Excerpt Number: 167

Comment: With respect to fluorinated GHGS, destruction is defined in §98.6 as the "…expiration of a fluorinated GHG to the destruction efficiency actually achieved. Such destruction does not result in a commercially useful end product.´ Subpart OO requires estimation of the total mass of each fluorinated GHG destroyed on an annual basis. ACC requests clarification of this definition considering industry practices for air pollution control at GHG production facilities. Specifically, pollution controls devices (e.g., scrubbers) designed to control emissions of pollutants such as HF, HCl or F2 in the process gas stream, which also contains low concentrations of fluorinated GHGs, should not be considered devices for [3]destruction´ of the fluorinated GHGs. If fluorinated GHGs pass through these control devices relatively unchanged, ACC would consider this pass-through process to be an emission, rather than destruction.

Response: Please see the response to comment number EPA-HQ-OAR-2008-0508-1142.1, excerpt 49.

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6. MONITORING AND QA/QC REQUIREMENTS

Commenter Name: Marc J. Meteyer
Commenter Affiliation: Compressed Gas Association (CGA)
Document Control Number: EPA-HQ-OAR-2008-0508-0981.1
Comment Excerpt Number: 60

Comment: §98.414 CGA Comment: The proposed rule requires that scales, flow meters and other measuring instrumentation must have accuracy and precision of 0.2%, which essentially prescribes the use of Coriolis flow meters. As recognized by the EPA in the Technical Support Documents regarding fluorinated GHGs, Coriolis flow meters are expensive (i.e., GE Rheonik RHM Series Mass Flow Meters prices starting from $2,473 to $18,188, with accessory transmitter prices starting at $3,713). This cost does not address the cost of installation and probable production equipment modifications, nor the emissions associated with shutdown and start-up to install the new meters. Furthermore, the EPA recognized that these meters can clog easily with solids such as salts that are produced as a by-product of fluorinated GHG production. The EPA also states that production facilities already perform these measurements and calculations to the proposed level of accuracy and precision in order to monitor their processes and yields. This is incorrect. CGA recommends that all facilities affected by Subpart OO may continue using existing measurement instrumentation and engineering-based process knowledge.

Response: Please see Section OO of the preamble for a response to this comment.

Commenter Name: Lorraine Krupa Gershman
Commenter Affiliation: American Chemistry Council (ACC)

Document Control Number: EPA-HQ-OAR-2008-0508-0423.2
Comment Excerpt Number: 171

Comment: Section 98.414 does not address data quality associated with imported GHG. EPA should rely on import documents generated by the United States Customs Service as the appropriate reporting basis for imported bulk GHGs. Facilities receiving bulk industrial GHG shipments that were dispensed in compliance with Subpart OO (by use of appropriately calibrated packaging weigh scales, for instance) should be allowed to report either the amount of material introduced to the manufacturing process or by the receipts of the bulk shipping containers as was reported by the company reporting the shipment of the material. EPA should encourage consistent reporting between suppliers and users of industrial GHGs.

Response: With respect to data collected by the US Customs Service, see comment number EPA-HQ-OAR-2008-0508-0511.1, excerpt 66.

Commenter Name: Lorraine Krupa Gershman
Commenter Affiliation: American Chemistry Council (ACC)
Document Control Number: EPA-HQ-OAR-2008-0508-0423.2
Comment Excerpt Number: 169

Comment: Mandated annual calibration of all flow meters, scales, load cells and volumetric and density measures used to measure production and related parameters is inconsistent with accepted engineering principles. Empirical data collected throughout routine operations, as well as preventative and corrective maintenance, is used to determine equipment performance and reliability. This in turn is utilized over time to refine calibration and maintenance requirements and schedules. An arbitrary annual calibration requirement defeats the value of this knowledge, and it ultimately adds cost, promotes premature equipment failure, and increases emissions due to unnecessary shutdowns and start-ups. ACC recommends that an initial calibration or manufacturer calibration warranty be required for all new and replacement measurement equipment and on-going calibration be based upon a schedule determined by the facility considering operational data and manufacturer specifications.

Response: Please see Section OO of the preamble for a response to this comment.

Commenter Name: Lorraine Krupa Gershman
Commenter Affiliation: American Chemistry Council (ACC)
Document Control Number: EPA-HQ-OAR-2008-0508-0423.2
Comment Excerpt Number: 168

Comment: All measurement devices shall be calibrated prior to the first reporting year and at least annually thereafter, while gas chromatographs shall be calibrated at least monthly. The proposed rule requires that scales, flow meters and other measuring instrumentation must have accuracy and precision of 0.2%, which essentially prescribes the use of Coriolis flow meters where such meters are appropriate. Products subject to subpart OO reporting are typically sold in bulk containers, portable containers, or contained in domestically produced or imported products. EPA proposed data quality objectives that are not related to how industrial GHG products are managed. Typically, these products are dispensed in weigh scale configurations, which are managed according to National Institute of Standards and Technology (NIST) Handbook 44.

Handbook 44 manages weigh scale accuracy as a tolerance weight as a fraction of the total amount weighed, not as any accuracy or precision fraction. For instance, the typical fluorochemical product disposable 30 pound cylinder loading standard is calibrated to a tolerance of +/- 0.1 to 0.5 pounds. EPA should recognize the current NIST standard and not create conflicting weigh scale requirements that were developed over many years to properly manage product custody transfer. ACC recommends that that all twenty-three facilities subject to subpart OO may continue using existing measurement instrumentation and engineering-based process knowledge.

Response: Please see Section OO of the preamble for a response to this comment.

Commenter Name: Keith Adams
Commenter Affiliation: Air Products and Chemicals, Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-1142.1
Comment Excerpt Number: 50

Comment: The proposed rule includes the following monitoring and associated QA/QC requirements: 1. Mass of fluorinated GHGs or nitrous oxide coming out of the production process measured using flow meters, weigh scales or a combination of volumetric and density measurements at least daily with an accuracy and precision of 0.2% of full scale or better [98.414(a)]; 2. Mass of any used fluorinated GHGs or used nitrous oxide added back into the production process upstream of the output measurement in (a) measured at least daily using flow meters, weigh scales, or a combination of volumetric and density measurements at least daily with an accuracy and precision of 0.2% of full scale or better [98.414(b)]; 3. Mass of fluorinated GHGs or nitrous oxide fed into transformation process measured at least daily using flow meters, weigh scales, or a combination of volumetric and density measurements at least daily with an accuracy and precision of 0.2% of full scale or better [98.414(c)]; 4. Mass of unreacted fluorinated GHGs or nitrous oxide permanently removed (recovered, destroyed or emitted) from the transformation process measured at least daily using flow meters, weigh scales, or a combination of volumetric and density measurements at least daily with an accuracy and precision of 0.2% of full scale or better [98.414(d)]; 5. Mass of fluorinated GHG or nitrous oxide sent to another facility for transformation measured at least daily using flow meters, weigh scales, or a combination of volumetric and density measurements at least daily with an accuracy and precision of 0.2% of full scale or better [98.414(e)]; 6. Mass of fluorinated GHG sent to another facility for destruction measured at least daily using flow meters, weigh scales, or a combination of volumetric and density measurements at least daily with an accuracy and precision of 0.2% of full scale or better [98.414(f)]; and, 7. Mass of fluorinated GHGs fed into the destruction device measured at least daily using flow meters, weigh scales, or a combination of volumetric and density measurements at least daily with an accuracy and precision of 0.2% of full scale or better [98.41 4(g)]. 8. All measurement devices shall be calibrated prior to the first reporting year and at least annually thereafter [98.414(j)], while gas chromatographs shall be calibrated at least monthly [98.414(k)]. Fluorinated GH G production can vary from a batch or campaign process to a continuous process, and possibly a combination of the two; however, it cannot be considered a “daily process.” Reactants, products, by-products and wastes associated with production are managed and measured over the same batch or similar period. Daily calculations are excessive and could introduce error into an established production management system. Charges of raw materials and process operating conditions are adjusted on an irregular basis in batch processes. This variability creates intermittent and inconsistent process streams

making characterization problematic and unreliable. Therefore, Air Products recommends that the monitoring frequency for all associated measurements be based upon the batch or campaign period (described as "p" in Subpart L) and not a daily frequency. If a calendar-based period is necessary for reporting purposes, then Air Products recommends an annual or quarterly frequency since this is the basis for production scheduling, budgeting and cost-reconciliation. Further, mandated annual calibration of all flow meters, scales, load cells and volumetric and density measures used to measure production and related parameters is inconsistent with accepted engineering principles. Empirical data collected throughout routine operations, as well as preventative and corrective maintenance, is used to determine equipment performance and reliability. This in turn is utilized over time to refine calibration and maintenance requirements and schedules. An arbitrary annual calibration requirement defeats the value of this knowledge, and it ultimately adds cost, promotes premature equipment failure, and increases emissions due to unnecessary shutdowns and start-ups. For example, MicroMotion does not recommend any field calibration of most of their "non-Elite" series instruments and has represented to EPA in the past that these instruments should not be adjusted unless they fail. Air Products recommends that an initial calibration be required for all new and replacement measurement equipment and that on-going calibration be based upon a schedule determined by the facility considering operational data and manufacturer specifications. On-going calibrations should only be performed when the instrument is taken off-line during the next scheduled shutdown/maintenance cycle.

Response: Please see Section OO of the preamble for a response to this comment.

Commenter Name: John M. Batt
Commenter Affiliation: Airgas, Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-0408.1
Comment Excerpt Number: 22

Comment: Airgas does not support the proposed level of accuracy and precision required by the proposed rule. We are concerned that reporting to the level required is not attainable in all instances without considerable expense and requires a level of precision not previously required under existing reporting regulations such as TRI. We believe that greenhouse gas reporting regulations should allow the emissions level calculations to be consistent with the TRI and other Clean Air Act reporting, allowing companies to utilize their existing measurement tools to ensure timely and accurate reporting that is useful, cost-effective, and avoids duplication. The proposed rule requires that scales, flow meters and other measuring instrumentation must have accuracy and precision of 0.2%, which essentially prescribes the use of Coriolis flow meters. As recognized by the Agency in the Technical Support Documents regarding nitrous oxide, Coriolis flow meters are expensive (i.e., GE Rheonik RHM Series Mass Flow Meters prices starting from $2,473 to $18,188, with accessory transmitter prices starting at $3,713.) This cost does not address the cost of installation and probable production equipment modifications, nor the emissions associated with shutdown and start-up to install the new meters. Furthermore, the Agency recognized that these meters can clog easily with solids. Flow meters in current use at nitrous oxide production facilities have an accuracy of about +/-0.5%. Using the figures in the Proposed Rule for nitrous oxide production, a 0.5% error at a typical facility equates to 4,500 MT CO2e, whereas a 0.2% error equates to 1,800 MT CO2e. The relatively low volumes of nitrous oxide and the small difference in CO2e do not warrant the use of more precise measurement equipment in the production of nitrous oxide. Airgas recommends that that all five

(5) nitrous oxide facilities affected by Subpart OO are allowed to continue using existing measurement instrumentation and engineering-based process knowledge for reporting.

Response: Please see Section OO of the preamble for a response to this comment.

Commenter Name: Susan Amodeo Cathey
Commenter Affiliation: Air Liquide USA, LLC
Document Control Number: EPA-HQ-OAR-2008-0508-0464.1
Comment Excerpt Number: 8

Comment: The Proposed Rule requires measurement of quantities of N_2O with an accuracy and precision of 0.2 percent of full scale or better. To meet this requirement, Air Liquide and other Nitrous Oxide producers would be required to purchase and install high end measurement devices that are both costly and difficult to maintain in industrial facilities rather than laboratory environments. The preamble to the Proposed Rule states that this accuracy is required due to the relatively high global warming potential of fluorinated GHG's and N_2O. However, the fluorinated GHG's tend to have a GWP an order of magnitude or higher than N_2O and thus the case is not as strong for this requirement to be imposed on producers of N_2O. Given the cost burden associated with meeting this accuracy requirement and the relative benefit it might provide, we would request that this requirement apply only to fluorinated GHG's.

Response: Please see Section OO of the preamble for a response to this comment.

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7. PROCEDURES FOR ESTIMATING MISSING DATA

Commenter Name: Marc J. Meteyer
Commenter Affiliation: Compressed Gas Association (CGA)
Document Control Number: EPA-HQ-OAR-2008-0508-0981.1
Comment Excerpt Number: 61

Comment: §98.415 CGA Comment: Missing and/or suspected erroneous data is unacceptable, albeit not uncommon at complex manufacturing facilities. The methodology proposed for substitute data is unusually burdensome requirement that will not materially change overall emissions validity. Furthermore, efforts required by this prescribed methodology and associated documentation add labor cost which can be better applied to correcting the cause of the missing data. CGA proposes a minimum 10% threshold for missing and/or erroneous data above which the 98.415 methodology would be required.

Response: In the final rule, EPA has added an additional method for estimating missing mass flow data in Subpart OO in the event that a secondary mass measurement for that stream isn't available. In that event, producers can use a related parameter and the historical relationship between the related parameter and the missing parameter to estimate the flow. This provision will provide additional flexibility to facilities in the event that a secondary mass measurement is not currently available for a particular stream. For response to general comments on missing data, please see Section II of the preamble and the related general comment response document.

Commenter Name: Marc J. Meteyer
Commenter Affiliation: Compressed Gas Association (CGA)
Document Control Number: EPA-HQ-OAR-2008-0508-0981.1
Comment Excerpt Number: 57

Comment: The EPA requests comment on the proposed methods of estimating missing production data. We support the proposal to use secondary direct measurements of production. These methods should be sufficient without having to resort to the use of data reflecting the consumption of reactants.

Response: Please see the response to comment EPA-HQ-OAR-2008-0508-0981.1, excerpt 61.

Commenter Name: Lorraine Krupa Gershman
Commenter Affiliation: American Chemistry Council (ACC)
Document Control Number: EPA-HQ-OAR-2008-0508-0423.2
Comment Excerpt Number: 172

Comment: The proposed rule states that substitute data for missing quality-assured parameters shall be either a secondary measurement for mass and flow measurements, or the arithmetic average of parameter values immediately preceding and following the missing data. If the methods described in §§98.414(a)(1) and 98.414(a)(2) are likely to under- or over-estimate the parameter value, a best estimate shall be developed with documentation on the methods used, and rationale and reasons to explain why (a)(1) and (a)(2) would under- or over-estimate the parameter. Missing and/or suspected erroneous data is undesirable, but frequently unavoidable at complex manufacturing facilities. The methodology proposed for substitute data is unusually burdensome requirement that will not materially change overall emissions validity. Furthermore, efforts required by this prescribed methodology and associated documentation add labor cost which can be better applied to correcting the cause of the missing data. ACC proposes using the systems detailed in 40 CFR Part 63 or 64, with the 75% minimum data availability systems, already promulgated by EPA. In addition, much of the data to be reported in subpart OO relies on United States Customs Service importation and export records, which cannot be subject to any missing data systems. The importation of products containing industrial GHGs do not adapt to traditional data management schemes, but rely on calculations of total industrial GHG content or appliance charge amounts. EPA should strike §98.415 from the proposed subpart OO.

Response: Please see the response to comment EPA-HQ-OAR-2008-0508-0981.1, excerpt 61.

Commenter Name: Keith Adams
Commenter Affiliation: Air Products and Chemicals, Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-1142.1
Comment Excerpt Number: 52

Comment: The proposed rule states that substitute data for missing quality-assured parameters shall be either a secondary measurement for mass and flow measurements [98.415(a)(1)], or the arithmetic average of parameter values immediately preceding and following the missing data

[98.415(a)(2)]. If the methods described in 98.415(a)(1) and 98.415(a)(2) are likely to under- or over-estimate the parameter value, a best estimate shall be developed with documentation on the methods used, and rationale and reasons to explain why (a)(1) and (a)(2) would under- or over-estimate the parameter [98.415(a)(3)]. Missing and/or suspected erroneous data is unacceptable, albeit not uncommon at complex manufacturing facilities. The methodology proposed for substitute data is unusually burdensome requirement that will not materially change overall emissions validity. Furthermore, efforts required by this prescribed methodology and associated documentation add labor cost which can be better applied to correcting the cause of the missing data. Air Products proposes a 25% threshold (i.e., consistent with the methodology approved for the CAM Program) for missing and/or erroneous data above which the 98.125 methodology would be required. For CEMS, Air Products further proposes a 10% threshold for missing and/or erroneous data above which the 98.125 methodology would be required.

Response: Please see the response to comment number EPA-HQ-OAR-2008-0508-0981.1, excerpt 61.

Commenter Name: John M. Batt
Commenter Affiliation: Airgas, Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-0408.1
Comment Excerpt Number: 23

Comment: In the Preamble, the EPA has requested comment on the proposed methods of estimating missing production data. We support the proposal to use secondary direct measurements of production. These methods should be sufficient without having to resort to the use of data reflecting the consumption of reactants.

Response: EPA agrees with the commenter that secondary direct measurements of production are appropriate in the event that the primary measurements are not available, and EPA is finalizing the requirement to use a secondary mass measurement to estimate missing production data. See the response to comment EPA-HQ-OAR-2008-0508-0981.1, excerpt 61, for additional discussion of the missing data provisions for industrial gas supply.

Commenter Name: Maureen Beatty
Commenter Affiliation: National Refrigerants, Inc. (NRI)
Document Control Number: EPA-HQ-OAR-2008-0508-0434.1
Comment Excerpt Number: 20

Comment: NRI agrees that, given existing requirements under Customs authority to declare amounts of GHGs imported, there should not be significant missing data for importers of HFCs. 74 Fed. Reg. at 16,582.

Response: In the final rule, EPA is not promulgating any missing data provisions for imports and exports of nitrous oxide or fluorinated GHGs.

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8. DATA REPORTING REQUIREMENTS

Commenter Name: Jeffry C. Muffat
Commenter Affiliation: 3M Company
Document Control Number: EPA-HQ-OAR-2008-0508-0793.1
Comment Excerpt Number: 28

Comment: With respect to the reporting of "bulk imports / exports of greenhouse gases", it appears that EPA intended to require reporting for chemical mixtures of greenhouse gases and by greenhouse gas chemical substance. For situations where chemical mixtures may contain a greenhouse gas at low concentration, 3M proposes a clarification to 98.416 (d), (e), and 98.4 17 to avoid reporting complexity. For imported / exported chemical mixtures containing greenhouse gases, reporting should be required for each import / export shipment if the total greenhouse gas chemical content in the product is greater than 5 wt. %.

Response: Although EPA is not promulgating a specific exemption for imports and exports of nitrous oxide or fluorinated greenhouse gases that occur in low concentrations, EPA is exempting imported or exported shipments of less than 250 metric tons of CO_2e of these gases from reporting requirements. EPA anticipates that in many cases this exemption will effectively exempt shipments of nitrous oxide and fluorinated GHGs occurring at low concentrations because the mass of the GHG will be much lower than that of the mixture (including non-GHG components), e.g., by a factor of 20 for mixtures with a GHG concentration of 5 percent.

Commenter Name: John M. Batt
Commenter Affiliation: Airgas, Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-0408.1
Comment Excerpt Number: 21

Comment: A clarification of how to treat product ultimately transformed by downstream users with non-emissive applications is needed.

Response: Please see the response to comment number EPA-HQ-OAR-2008-0508-0408.1, excerpt 24.

Commenter Name: John M. Batt
Commenter Affiliation: Airgas, Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-0408.1
Comment Excerpt Number: 24

Comment: Much of the data that is requested for this annual report is confidential, and submittal can potentially disclose sensitive critical information relating to work process, process chemistry, feed and production rates, process efficiencies, cost, etc. It is requested that the data is required to be maintained at the facility for ready inspection by agency representatives, when requested but not reported. The reporting of (1) total mass of each reactant fed into the production process, and (2) the mass of each non-GHG reactant and by-product permanently removed from the process, should not be required. To account for US "consumption", and therefore emissions, only the total quantities of nitrous oxide produced, imported, exported, and transformed are necessary. The reporting of data on reactants is not needed and, besides being considered Business Confidential Information, would represent an additional burden on producers if this information is required. Accurately identifying "transformation" quantities is not always possible. A Supplier

is not always sure of the eventual downstream customers' applications, especially in the case of sales to distributors. Where Suppliers do know what a customer is using the product for, the efficiency of the customer's transformation process is not known. Any reporting of quantities "sent to another facility for transformation" would only be estimates, and should be aggregated and reported at the facility level. Airgas would be willing to work with our trade association, the Compressed Gas Association, and the EPA on the best means to identify quantities of nitrous oxide supplied to specific non-emissive applications.

Response: The treatment of Confidential Business Information under this rule is discussed in section II of the preamble and in the related general provision and legal Comment and Response Documents found in EPA-HQ-OAR-2008-0508.

In addition to data on their production, imports, exports, transformation, and destruction, facilities producing N2O or fluorinated GHGs are required to submit data on the total mass of each reactant fed into the production process (by process) and the total mass of the reactants, by-products, and other wastes permanently removed from the production process (by process). The latter information is necessary to verify production at least roughly through a material balance. In such a mass-balance approach, the mass produced should be approximately equal to the difference between the masses of the reactants and those of the by-products and other wastes permanently removed from the production process.

EPA is requiring reporting, rather than simply retention, of this data in order to permit annual verification of the quantities reported by each supplier. Visiting individual facilities to verify reports based on records would require a significant investment of government resources, including both staff time and travel funds. Due to resource constraints, EPA would not be able to make such visits annually. Without reporting of verification data, therefore, the frequency of verification would be much lower, while the costs of such verification would be much higher. Many years could pass before the reports of some facilities or companies were verified.

More discussion of verification can be found in section II of the preamble and the related general provision Comment and Response Documents found in EPA-HQ-OAR-2008-0508.

In the proposed definition of "transform," EPA intended to include only processes that use and entirely consume nitrous oxide or fluorinated GHGs in the manufacturing of other chemicals for commercial purposes. EPA did not intend to include processes that use and consume nitrous oxide or fluorinated GHGs but do not result in the manufacture of other chemicals for commercial purposes. Thus, use of nitrous oxide as a feedstock in the manufacture of sodium azide is included in "transformation." However, use of nitrous oxide as an oxidizing agent in semiconductor manufacturing, atomic absorption spectrometry, blowtorches, or fuel is not defined as "transformation" because the chemicals resulting from these processes are not used for commercial purposes (that is, they are only generated as by-products to the desired "product," e.g., heat). In the proposed definition, EPA had attempted to clarify that nitrous oxide used as in the latter applications was not considered to be transformed; the last sentence of the definition read, "Transformation does not include burning of nitrous oxide." Commenters found this sentence confusing, however, stating that it was not clear that "burning" included use of nitrous oxide as an oxidant. EPA is therefore revising the definition of "transform" to omit this sentence.

Because "transformation" includes only applications in which the nitrous oxide is consumed in the manufacture of other chemicals, EPA anticipates that producers of nitrous oxide will

generally know and be able to report when they are selling nitrous oxide for "transformation." For example, producers of nitrous oxide who sell it to other chemical companies can check with those companies to see whether the nitrous oxide is being transformed (e.g., used to manufacture sodium azide). Nevertheless, EPA recognizes that some nitrous oxide sold to independent distributors could be re-sold to chemical manufacturers who would then transform it, unknown to the producer of the nitrous oxide. EPA does not expect nitrous oxide producers to anticipate and report transformation by such third parties.

Commenter Name: John M. Batt
Commenter Affiliation: Airgas, Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-0408.1
Comment Excerpt Number: 26

Comment: The proposed rule requires bulk importers and bulk exporters of fluorinated GHGs or nitrous oxide to submit an annual report summarizing their imports/exports at the corporate level, except for transshipments and heels. The report shall contain information including, but not limited to the following: * Total mass of each fluorinated GHG and nitrous oxide imported/exported in bulk; * Names and address of the importer/exporter and recipient of the shipment; * Quantity imported/exported by chemical; and * Date of import/export. This data should be reasonably available from currently required importing and exporting records; however, it should be recognized that this data is confidential business information, which discloses customer base, market share and similar data that can be utilized to deduce cost/pricing structures, as well as competitive strategies. The names and addresses of the recipient of each export should not be required. This information is not needed for the calculation of "consumption" of nitrous oxide or fluorinated GHGs in the US. To the extent that it is not available in public US Customs documents, it is considered Business Confidential Information. Airgas recommends that rather than submitting this information as part of the annual report, this data should be maintained at the respective facility and available for review at the facility, if necessary, as provided in 98.3(f) and 98.417.

Response: EPA is requiring reporting of the data listed by the commenter either to understand the supply of fluorinated GHGs and nitrous oxide entering and exiting U.S. commerce (production, transformation, and destruction) or to verify submitted information (e.g., through a material balance of reactants and products). The treatment of Confidential Business Information under this rule is discussed in section II of the preamble and the related general provision Comment and Response Documents found in EPA-HQ-OAR-2008-0508.

Under subpart OO, importers of N_2O or fluorinated GHGs are required to submit an annual report that summarizes their imports, providing the following information for each import: the quantity of GHGs imported by chemical, the date on which the GHGs were imported, the port of entry through which the GHGs passed, the country from which the imported GHGs were imported, and the importer number for the shipment. Importers are also required to provide the names and addresses of any persons and facilities to which the imported GHGs were sold or transferred for transformation or destruction.

Exporters of N_2O and fluorinated GHGs are required to submit an annual report that summarizes their exports, similar to the report provided by importers. A complete list of data to be reported is included in the rule.

This data will provide the Agency with information that is necessary to verify the nature and size of GHG imports and exports. For example, the names and addresses of recipients of each export will enable EPA to contact recipients, if necessary, to verify the mass and identity of industrial GHGs shipped to them by the exporter. EPA is requiring reporting, rather than simply retention, of this data in order to permit annual verification of the quantities reported by each supplier. Visiting individual facilities to verify reports based on records would require a significant investment of government resources, including both staff time and travel funds. Due to resource constraints, EPA would not be able to make such visits annually. Without reporting of verification data, therefore, the frequency of verification would be much lower, while the costs of such verification would be much higher. Many years could pass before the reports of some facilities or companies were verified.

More discussion of verification can be found in section II of the preamble and the related general provision Comment and Response Documents found in EPA-HQ-OAR-2008-0508.

These reporting requirements are very similar to those that apply to importers and exporters of ODS under EPA's Stratospheric Ozone Protection Program. They are also very similar to the information required to be reported by Customs and Border Protection (CBP).

Commenter Name: Keith Adams
Commenter Affiliation: Air Products and Chemicals, Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-1142.1
Comment Excerpt Number: 53

Comment: The proposed rule requires reporting of total mass of each fluorinated GHG and nitrous oxide produced, total mass of each fluorinated GHG and nitrous oxide transformed, total mass of fluorinated GHG destroyed, total of any fluorinated GHG and nitrous oxide sent to another facility for transformation, total mass of any fluorinated GHG and nitrous oxide and nitrous oxide sent to another facility for destruction, total of each reactant fed into the production process, total mass of each non-GHG reactant and by-product permanently removed from the production process, total mass of used product added back into the production process for reclamation [98.416(a)]. Additionally, full explanation for the reason and length of time quality-assured parametric data was missing, and the information required by 98.415 [98.41 6(a)(1 1)]. Air Products Comment: This data must be collected to complete the necessary mass-balance calculations to develop the emissions estimate prescribed in Subparts L and OO. The Agency surely recognizes that this data is extremely sensitive and confidential business information, which can be utilized to deduce process costs, efficiencies and competitive strategies. In certain instances, this data can be proprietary or protected by patent. Air Products recommends that rather than submitting this information as part of the annual report, this data shall be maintained at the respective facility and available for review at the facility, if necessary, as provided in 98.3(f). In lieu of this data submission, the Final Rule should recognize and allow self-verification and certification similar to the Title V Operating Permit program where facilities represent their compliance with applicable regulations and permit requirements without submission of the detailed data supporting that certification.

Response: See the responses to comment EPA-HQ-OAR-2008-0508-0408.1, excerpts 24 and 26.

Commenter Name: Keith Adams
Commenter Affiliation: Air Products and Chemicals, Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-1142.1
Comment Excerpt Number: 54

Comment: The proposed rule requires bulk importers and bulk exporters of fluorinated GHGs or nitrous oxide to submit an annual report summarizing their imports/exports at the corporate level, except for transshipments and heels. The report shall submit information including, but not limited to the following: 1. Total mass of each fluorinated GHG and nitrous oxide imported/exported in bulk; 2. Names and address of the importer/exporter and recipient of the shipment; 3. Quantity imported/exported by chemical; and, 4. Date of import/export. This data should be reasonably available from currently required importing and exporting records; however, the Agency surely recognizes that this data is confidential business information, which discloses customer base, market share and similar data that can be utilized to deduce cost/pricing structures, as well as competitive strategies. Furthermore, off-shore suppliers and customers may choose not to do business with U.S.-based companies if this information is made available to the public domain. Air Products recommends that rather than submitting this information as part of the annual report, this data shall be maintained at the respective facility and available for review at the facility, if necessary, as provided in 98.3(f) and 98.417.

Response: See the response to comment EPA-HQ-OAR-2008-0508-0408.1, excerpt 26.

Commenter Name: Joel R. Hall
Commenter Affiliation: INEOS Fluor Americas LLC
Document Control Number: EPA-HQ-OAR-2008-0508-1525
Comment Excerpt Number: 10

Comment: Remove the requirement to report data beyond that specified under §98.412 from §98.416(a). Section 98.412 states, "You must report the GHG emissions that would result from the release of the nitrous oxide and each fluorinated GHG that you produce, import, export, transform, or destroy during the calendar year." Section 98.416(a) requires that each annual report contain the following: (1) total mass in metric tons of each fluorinated GHG or nitrous oxide produced at that facility, (2) total mass in metric tons of each fluorinated GHG or nitrous oxide transformed at that facility, (3) total mass in. metric tons of each fluorinated GHG destroyed at that facility, (4) total mass in metric tons of each fluorinated GHG or nitrous oxide sent to another facility for transformation, (5) total mass in metric tons of each fluorinated GHG sent to another facility for destruction, (6) total mass in metric tons of each reactant fed into the production process, (7) total mass in metric tons of each non-GHG reactant and by-product permanently removed from the process, (8) mass of used product added back into the production process (e.g.,, for reclamation), (9) names and addresses of facilities to which any nitrous oxide or fluorinated GHGs were sent for transformation, and the quantities (metric tons) of nitrous oxide and of each fluorinated GHG that were sent to each for transformation, (10) names and addresses of facilities to which any fluorinated GHGs were sent for destruction, and the quantities (metric tons) of nitrous oxide and of each fluorinated GHG that were sent to each for transformation.

The only information that is relevant, as stated in §98.412, and therefore should be reported by fluorinated greenhouse gas producers is the amount of each fluorinated GHG produced, imported, exported, transformed, or destroyed during the calendar year. Any other information is beyond the scope of the proposed rule (i.e., collection of GHG emission data). INEOS Fluor requests that data listed in §98.416(a)(6) through (10) be required to be maintained by the source under §98.41"7, but not be required to be reported. Likewise, the data listed under §98.416(a)(11), (b), and (c) should be required to be maintained by the source under §98.417, but should not be required to be reported. Collection of this data is beyond the scope of the proposed rule (i.e., collection of GHG emission data). Therefore, INEOS Fluor requests that the data listed under §98.416(a)(11), (b), and(c) be required to be maintained by the source under §98.417, but not be required to be reported.

Response: See the response to comment EPA-HQ-OAR-2008-0508-0408.1, excerpt 24.

Commenter Name: John M. Batt
Commenter Affiliation: Airgas, Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-0408.1
Comment Excerpt Number: 18

Comment: The Preamble to the Proposed Rule identifies many uses of nitrous oxide and makes the assumption that all production that is not “destroyed” or “transformed” is emitted. The definition of “transform” in §98.6 of the Proposed Rule refers to the use of nitrous oxide in “the manufacturing of other chemicals for commercial purposes. Transformation does not include burning of nitrous oxide.” In addition to the use of nitrous oxide in the production of sodium azide (used to inflate airbags), and the production of pharmaceuticals, there are other non-emissive uses that EPA refers to in the Preamble and Technical Support Documents: -An oxidizing agent -in semi-conductor manufacture -(with acetylene) in atomic absorption -blow torches used by jewelers and others -a fuel oxidant in auto racing The Proposed Rule does not state whether these non-emissive uses are considered “burning”. Most nitrous oxide emissions in the US come from the breakdown of fertilizer used in agriculture, and not from “on-purpose” nitrous oxide production. This nitrous oxide consumption accounts for only 0.06% of the total CO2e GHG emissions in the US, and non-emissive uses could amount to 10 – 15% of that figure.

Clarification of the use of the terms “transformation” and “burning” therefore is needed. Most references to “transformation” in the Proposed Rule and its Preamble refer to on-site transformation in, or subsequent to, the production process. Reporting requirements (§98.416), however, include product “sent to another facility for transformation”. It is not clear in the case of nitrous oxide whether this includes product delivered to customers who have non-emissive applications – i.e. transform the product, but aren’t necessarily producing “chemicals” for is this meant to include shipments to customers who have known non-emissive applications and use the nitrous oxide in the production of products that are not necessarily chemicals? Airgas respectfully requests that the definition of ‘transformation’ be clarified to include all downstream non-emissive customer applications or uses of nitrous oxide.

Response: Please see the response to comment number EPA-HQ-OAR-2008-0508-0408.1, excerpt 24 for discussion of transformation.

The final rule does not require producers of nitrous oxide to report their sales (or other transfers) of nitrous oxide for use in applications that consume the nitrous oxide but do not result in the manufacture of other chemicals for commercial purposes.

Commenter Name: Jeffry C. Muffat
Commenter Affiliation: 3M Company
Document Control Number: EPA-HQ-OAR-2008-0508-0793.1
Comment Excerpt Number: 27

Comment: 3M has U.S. operations, unrelated to greenhouse gas production, which may be affected by the "corporate-level" reporting requirements for imports and exports under Subpart OO. 3M also has experience reporting the import and transformation of ozone depleting substances, and this experience is the basis for some of the following comments.

Generally, 3M's concern with sections 98.416 (d), (e), and 98.417 (c), (d) and (e) of Subpart OO is that they do not identify practical limits for reporting greenhouse gas shipments. The consequence is that information on all shipments would be reported and records retained, regardless of shipping quantity. While 3M recognizes EPA's need for reliable greenhouse gas import / export information, establishing reporting de minimus thresholds will avoid disproportionate effort to report very small quantities of greenhouse gases that will not meaningfully change reporting totals.

In addition, 3M considers greenhouse gas shipment data confidential business information, (and not emissions data by its nature) that should be maintained as such under any reporting requirement. Specifically, Subpart OO requires the annual reporting of "bulk" greenhouse gas imports and exports and maintenance of related records. The term "bulk" does not have a quantitative minimum, but its use in the rule implies that EPA is interested in significant shipments of imports and exports of GHGs. Under the Ozone Depleting Substance (ODS) regulation (40 CFR 82.3) which appears to be part of the basis for the proposed Greenhouse Gas Reporting rule, EPA excludes incidental, insignificant quantities of ODS's in mixtures from the definitions of "controlled substance" and "controlled product". The vast majority of 3M's imports and exports of greenhouse gases involve shipments of a few thousand pounds or more each.

As proposed, the rule would technically include very small international shipments (i.e. shipments consisting of a greenhouse gases weighing tens to a few hundred pounds). The rule would also appear to include materials shipped for R&D purposes, quality assurance samples, and very small commercial sales. The administrative burden to identify these imports / exports and maintain the required information would be significant, but in aggregate this activity would have little impact on 3M's annual summary of greenhouse gas imports / exports. To address this situation, 3M proposes that Sections 98.416 (d-e) and 98.417 be amended to require import / export reporting and record keeping for individual shipments of greenhouse gases exceeding 1000 metric tons CO2e. Export or import shipments involving less than 1000 metric tons CO2e of greenhouse gases would not be subject to reporting. Additionally, as indicated elsewhere in these comments, imports and exports of R&D materials (and R&D activity generally) should also be exempt from reporting under this rule. Additionally, EPA has specifically requested comment on whether products containing greenhouse gases should be included in Subpart OO reporting.

EPA has proposed not to include products containing greenhouse gases, with the possible exceptions of pre-charged equipment and closed-cell foams. We agree with EPA's proposal to exclude reporting for products containing greenhouse gases. Expanding the proposed rule to include products containing greenhouse gases would be administratively burdensome and create significant practical issues.

Finally, depending on how EPA handles finished goods reporting, the reporting of imports / exports of greenhouse gas shipments for 3M would not only include greenhouse gases produced by 3M, but potentially also greenhouse gases purchased as raw materials or as ingredients in semi-finished goods. For 3M to be able to properly identify greenhouse gases for purposes of Subpart OO reporting, it is necessary to have a workable, transparent definition of a fluorinated greenhouse gas. See our comments above under General Comments on 3M's request for a revised definition of "fluorinated greenhouse gases."

Response:

After analyzing data on imports and exports of industrial GHGs,[2] EPA agrees with the commenter that exempting small shipments from reporting would decrease the administrative burden of the rule without significantly decreasing the total quantities of imports and exports reported under the rule. Therefore, the final rule includes a provision in the industrial supply reporting requirements that exempts small shipments (i.e., those including less than 250 $mtCO_2e$) from the import and export reporting requirements. This quantity is equivalent to one percent of the 25,000 $mtCO_2e$ reporting threshold for importers and exporters of industrial GHGs. EPA found that exempting shipments below 250 mtCO2e would reduce the total quantity of industrial GHGs reported by only 0.01 percent. For most individual chemicals or blends the impact was similar, with four exceptions. In the data set examined, reported imports of R-407C (a blend) and exports of HFC-152a were each reduced by about one percent. Imports of R-407C were relatively small, and HFC-152a has a relatively low GWP. Reported exports of R-408A were reduced by 100 percent, but the total quantity of R-408A exported was below 250 mtCO2e. Finally, reported imports of R-401A were decreased by five percent. Compared to other fluorinated GHGs (including most blends), R-401A has a relatively low nominal GWP because it is a blend that includes HCFCs. Because HCFCs are ozone-depleting substances regulated under Title VI of the CAA, they are not included in the definition of "fluorinated GHG," and their GWPs are therefore not counted toward the weighted average GWPs of blends including them.

EPA believes that the 250-$mtCO_2e$ exemption will ensure that significant commercial shipments are reported while reducing paperwork for small shipments, including, for example, samples of chemical that are shipped to undergo analysis for quality assurance or quality control purposes. The actual mass of exempted shipments depends on the chemical being shipped. For HFE-7100, the maximum size of an exempted shipment is 841 kg (1851 pounds). For SF_6, the maximum size of an exempted shipment is 10 kilograms (23 pounds).

EPA decided against a larger exemption (e.g., 1000 $mtCO_2e$) because under such an exemption, a single exempted shipment could comprise a significant percentage of the 25,000 mtCO2e threshold (e.g., four percent for an exemption of 1000 $mtCO_2e$). In addition, under an exemption of 1000 mtCO2e, EPA's analysis indicated that few or no imports of some chemicals (e.g., R-

[2] EPA examined shipment data from the PIERS database from 1 November 2006 through 31 October 2007. See the memorandum entitled "The Impact of Exempting Shipments of Industrial GHGs Containing 250 mtCO2e or Less from Reporting," (Docket Number EPA-HQ-OAR-2008-0508-XXXX)

401A) would be reported, even though total imports of those chemicals are significant (i.e., over 15,000 mtCO2e in the data analyzed).

Please see Section OO of the preamble for responses to the comments regarding the import of products containing fluorinated GHGs and the definition of "fluorinated greenhouse gas."

Commenter Name: Marc J. Meteyer
Commenter Affiliation: Compressed Gas Association (CGA)
Document Control Number: EPA-HQ-OAR-2008-0508-0981.1
Comment Excerpt Number: 64

Comment: This section requires that all imports of a "container with a heel shall keep records of the amount brought into the United States that document that the residual amount in each shipment is less than 10 percent of the volume of the container and will: (1) Remain in the container and be included in a future shipment. (2) Be recovered and transformed. (3) Be recovered and destroyed." Section 98.4 16(d) adequately addresses how a facility should handle returned heels, and it is felt that Section 98.417(e) is unnecessary. The volume of the heel should not be limited, and the allowable heel should be equivalent to the volume of the container. Records for each container returned are unnecessary. It is respectfully requested that section 98.417(e) be removed from the rule.

Response: In the proposed rule, EPA intended paragraph 98.417(e) to set out the conditions under which importers would not be required to report their heels. However, as noted by this and other commenters, the language could be read to dictate how importers treat their heels after import. Therefore, the final rule clarifies the intent of 98.417(e) by inserting "that is not reported under 98.416(c)" in 98.417(e). In addition, as requested by some commenters, the final rule includes an additional condition under which importers do not need to report heels, if the heels "are recovered and included in a future shipment." With these changes, the revised section 98.417(e) reads:

e) Every person who imports a container with a heel that is not reported under 98.416(c) shall keep records of the amount brought into the United States that document that the residual amount in each shipment is less than 10 percent of the volume of the container and will:
(1) Remain in the container and be included in a future shipment.
(2) Be recovered and transformed.
(3) Be recovered and destroyed.
(4) Be recovered and included in a future shipment.

EPA has added the reporting exception for heels that are "recovered and included in a future shipment" because we determined that this reasonably covers the range of practices currently used to handle and recycle heels. Although the heel is being recovered from the container, potentially adding it the U.S. supply if the heel is then sold for domestic use, the heel quantity is relatively small. Moreover, heels that remain in the container can also be added to the U.S. supply if the container is sold ("shipped") for domestic use and the user subsequently elects to pull the heel out of the container.

EPA is retaining the requirement that unreported heels must not exceed 10 percent of the volume of the container. This percentage is consistent with that in the definition of "heel" used in EPA's

Stratospheric Ozone Protection regulations at Part 82, and it is also consistent with typical heel sizes recognized elsewhere (e.g., in the 2006 IPCC Guidelines for estimating fluorinated GHG emissions from electronics manufacturing). Permitting any volume to be classified as a heel and therefore excluded from reporting could permit, in the worst case, import of full containers with no reporting. This would clearly constitute a significant loophole to the import reporting requirements.

Regardless of their size, residual industrial GHGs in containers that are re-imported into the U.S. will not be double-counted as part of the U.S. supply. This is because these residual GHGs will have been subtracted from that supply when they were originally exported (along with the balance of the container contents that were removed abroad).

Importers who import containers containing residual industrial GHGs that exceed 10 percent of the container volume (or that do not meet any of the conditions set out in subparagraphs (e)(1) through (e)(4)) will simply be required to report those imports under 98.416.

Commenter Name: Jeffry C. Muffat
Commenter Affiliation: 3M Company
Document Control Number: EPA-HQ-OAR-2008-0508-0793.1
Comment Excerpt Number: 29

Comment: As with Subpart L, clearly much of the information that EPA requires to be reported in Subparts OO constitutes "confidential" information under 40 CFR part 2, and equally clear to 3M is that this same information is not "emission data" as defined by EPA. Information contained in these reporting requirements includes very specific data on every part of the production process. For example, it requires reporting on reactants input into each process (confidential information on raw materials used), the amount of each fluorinated GHG produced (amount of product generated from a process), the amount of each fluorinated GHG transformed (indicating how a produced fluorinated GHG might be used), and the amount of used product added back into the production process (indicating how 3M reuses or recycles material). More importantly, and as mentioned above, under Subpart OO, the reporting requirements do not deal in any manner with any actual emissions. Rather, EPA is requiring "upstream reporting of the quantities required to estimate U.S. consumption of N_2O and fluorinated gases." 74 Fed. Reg. 16579 (emphasis added). ("[T]his approach results in an estimate of consumption that is more closely related to actual U.S. emissions . . . ." 74 Fed. Reg 16579 (emphasis added)). (Because the GHGs in these products are almost always fully emitted during use, reporting these supply data would provide an accurate estimate of national emissions while substantially reducing the number of reporters." 74 Fed. Reg. 16466 (emphasis added.)) 3M's production of fluorinated greenhouse gas materials that will be used downstream (and thereby assumingly lead to emissions) does not constitute "emissions data" in any normal or customary meaning of the term.

Notably, the information being requested from producers such as 3M under Subpart OO does not indicate emissions have occurred – or even that they will occur – but instead only reflects the amount of material that may enter the stream of commerce and may ultimately be emitted downstream over some period of time depending on how the material is used. Whether it will be emitted – and at what rates and levels – depends upon a wide range of individual downstream user variables. For example, fluorinated GHGs are used as heat transfer fluids in semiconductor processing. These materials are being used not only because they possess the requisite safety,

performance, maintenance and dielectric properties but because they can span the temperature range of the application. Emissions between and among different users can vary widely, and hence, any information about 3M's upstream production would yield – at best – some kind of gross estimate of emissions that might occur downstream sometime in the future. Supply data or amounts produced should be afforded confidential treatment and not considered to be emission data. See, Natural Resources Defense Council v. Leavitt, 2006 WL 667327, (D. D.C. 2006) ("A plain reading of 40 C.F.R. Section 2.301(a)(2)(i) indicates that 'emission data' is defined narrowly to focus on information obtained from a source of emissions, not a producer of materials that will later contribute to emissions. Nor is there any reason to believe that the stockpiles of methyl bromide held by five companies are 'necessary to determine' the 'amount, frequency, concentration, or other characteristics' of methyl bromide emissions." (emphasis added by court). Should EPA require the reporting of all of this information in the final rule, for all the reasons provided above, 3M requests that EPA explicitly state in the final rule and confirm in the preamble to the final rule that all information provided under Subpart OO is considered confidential information and would not be considered "emission data" under this reporting rule. 3M requests that a new paragraph (f) be added to proposed Section 98.416 that reads: "No information required to be reported by this section is considered to be emission data under 40 CFR Section 2.301(2)(i) and (ii).

Response: See the response to comment EPA-HQ-OAR-2008-0508-0408.1, excerpt 26.

Commenter Name: Marc J. Meteyer
Commenter Affiliation: Compressed Gas Association (CGA)
Document Control Number: EPA-HQ-OAR-2008-0508-0981.1
Comment Excerpt Number: 51

Comment: The Preamble to the Proposed Rule identifies many uses of nitrous oxide and makes the assumption that all production that is not "destroyed" or "transformed" is emitted. The definition of "transform" in §98.6 refers to the use of nitrous oxide in "the manufacturing of other chemicals for commercial purposes. Transformation does not include burning of nitrous oxide." In addition to the use of nitrous oxide in the production of sodium azide, used to inflate airbags, and the production of pharmaceuticals, there are other non-emissive uses that EPA refers to in the Preamble and Technical Support Documents: An oxizing agent 1. in semi-conductor manufacture 2. (with acetylene) in atomic absorption 3. blow torches used by jewelers and others 4. fuel oxidant in auto racing CGA Comment: It is not clear by EPA's definition whether these non-emissive uses are considered "burning".

Response: Please see the response to comment number EPA-HQ-OAR-2008-0508-0408.1, excerpt 24, for discussion of the definition of "transform."

Commenter Name: Marc J. Meteyer
Commenter Affiliation: Compressed Gas Association (CGA)
Document Control Number: EPA-HQ-OAR-2008-0508-0981.1
Comment Excerpt Number: 52

Comment: Most nitrous oxide emissions in the United States come from the breakdown of fertilizer used in agriculture, and not from "on-purpose" nitrous oxide production. This nitrous oxide consumption accounts for only 0.06% of the total CO2e GHG emissions in the US, and non-emissive uses could amount to 10 – 15% of that figure. Clarification of the use of the terms "transformation" and "burning" therefore is needed. Most references to "transformation" in the Proposed Rule and its Preamble refer to on-site transformation in, or subsequent to, the production process. Reporting requirements (§98.416), however, include product "sent to another facility for transformation". It is not clear in the case of nitrous oxide whether this includes product delivered to customers who have non-emissive applications – i.e. transform the product, but aren't necessarily producing "chemicals for commercial purposes". Clarification is needed for "sent to another facility for transformation" – is this meant to include shipments to customers who have known non-emissive applications and use the nitrous oxide in the production of products that are not necessarily chemicals? CGA respectfully requests that the definition of 'transformation' be clarified to include all downstream non-emissive customer applications or uses of nitrous oxide.

Response: Please see the response to comment number EPA-HQ-OAR-2008-0508-0408.1, excerpt 24, for discussion of the definition of "transform."

The final rule does not require producers of nitrous oxide to report their sales (or other transfers) of nitrous oxide for use in applications that consume the nitrous oxide but do not result in the manufacture of other chemicals for commercial purposes.

Commenter Name: Marc J. Meteyer
Commenter Affiliation: Compressed Gas Association (CGA)
Document Control Number: EPA-HQ-OAR-2008-0508-0981.1
Comment Excerpt Number: 59

Comment: Much of the data that is required for these calculations is confidential, and submittal can potentially disclose sensitive critical information relating to work process, process chemistry, feed and production rates, process efficiencies, cost, etc. It is requested that the data is required to be maintained at the facility for ready inspection within a reasonable amount of time by agency representatives, when requested.

Response: See the response to comment EPA-HQ-OAR-2008-0508-0408.1, excerpt 26.

Commenter Name: Marc J. Meteyer
Commenter Affiliation: Compressed Gas Association (CGA)
Document Control Number: EPA-HQ-OAR-2008-0508-0981.1
Comment Excerpt Number: 62

Comment: For Producers, the Proposed Rule [§98.416(a)] requires the submittal the names and addresses of facilities to which any nitrous oxide sent for transformation, as well as the quantities sent. This information, as it would apply to specific downstream customers with non-emissive uses, is considered Business Confidential Information and should only be included in the records that need to be maintained by Producers. Accurately identifying "transformation" quantities is

not always possible. A Supplier is not always sure of the eventual downstream customers' applications, especially in the case of sales to distributors. Where Suppliers do know what a customer is using the product for, the efficiency of the customer's transformation process is not known. Any reporting of quantities "sent to another facility for transformation" would only be estimates, and should be aggregated and reported at the facility level. CGA would be willing to work with the EPA on the best means to identify quantities of nitrous oxide supplied to specific non-emissive applications. In §98.416(a) the reporting of (1) total mass of each reactant fed into the production process, and (2) the mass of each non-GHG reactant and by-product permanently removed from the process, should not be required. To account for U.S. "consumption", and therefore emissions, only the total quantities of nitrous oxide produced, imported, exported, and transformed are necessary. The reporting of data on reactants is not needed, and would represent an additional burden on producers if this information is required. Also, this information is considered Business Confidential Information.

Response: Please see the response to comment EPA-HQ-OAR-2008-0508-0408.1, excerpt 26, for discussion of data to be submitted and treatment of Confidential Business Information.

Please see the response to comment number EPA-HQ-OAR-2008-0508-0408.1, excerpt 24, for discussion of the definition of "transform."

Commenter Name: Marc J. Meteyer
Commenter Affiliation: Compressed Gas Association (CGA)
Document Control Number: EPA-HQ-OAR-2008-0508-0981.1
Comment Excerpt Number: 63

Comment: §98.416(d) & (e) The proposed rule requires bulk importers and bulk exporters of fluorinated GHGs or nitrous oxide to submit an annual report summarizing their imports/exports at the corporate level, except for transshipments and heels. The report shall submit information including, but not limited to the following: 1. total mass of each fluorinated GHG and nitrous oxide imported/exported in bulk; 2. names and address of the importer/exporter and recipient of the shipment; 3. quantity imported/exported by chemical; and, 4. date of import/export. CGA Comment: This data should be reasonably available from currently required importing and exporting records; however, the Agency surely recognizes that this data is confidential business information, which discloses customer base, market share and similar data that can be utilized to deduce cost/pricing structures, as well as competitive strategies. Furthermore, off-shore suppliers and customers may choose not to do business with U.S.-based companies if this information is made available to the public domain. CGA recommends that rather than submitting this information as part of the annual report, this data shall be maintained at the respective facility and available for review at the facility, if necessary, as provided in 98.3(f) and 98.41 7.

Response: Please see the response to comment EPA-HQ-OAR-2008-0508-0408.1, excerpt 26.

Commenter Name: See Table 1
Commenter Affiliation:
Document Control Number: EPA-HQ-OAR-2008-0508-0433.2
Comment Excerpt Number: 17

Comment: In the proposed rule, EPA requires that suppliers of industrial greenhouse gases and carbon dioxide report emissions as if the total volume of their production were emitted into the atmosphere. Once again, this methodology does not recognize the fact that many of these gases are used as feedstocks, and as a result are not emitted into the atmosphere, but rather sequestered into products.

Response: The final rule requires facilities that produce nitrous oxide or fluorinated GHGs to report the quantities that they transform or send off-site for transformation. The definition of "transform" is "to use and entirely consume nitrous oxide or fluorinated GHGs in the manufacturing of other chemicals for commercial purposes." Based on EPA's research, this encompasses the majority of feedstock uses for these chemicals. In its accounting of the U.S. supply of industrial gases, EPA will subtract the quantities transformed from the quantities assumed to be available for emission. Please see the response to comment EPA-HQ-OAR-2008-0508-0550.1, excerpt 1, for more discussion of the definition of upstream "consumption" and the relationship between consumption and emissions.

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9. RECORDS THAT MUST BE RETAINED

Commenter Name: Marc J. Meteyer
Commenter Affiliation: Compressed Gas Association (CGA)
Document Control Number: EPA-HQ-OAR-2008-0508-0981.1
Comment Excerpt Number: 65

Comment: In the large majority of products heels are not measured or calculated. The word "heel" seems to refer to some level of liquid in the container. With many of the GHGs the heel is actually a gas under pressure that is not measured upon return and either evacuated to a scrubber or refilled with the "heel" still in the container. It is respectfully requested that section 98.417(e) be removed from the rule.

Response: See the response to comment EPA-HQ-OAR-2008-0508-0981.1, excerpt 64.

Commenter Name: Sarah B. King
Commenter Affiliation: DuPont Company
Document Control Number: EPA-HQ-OAR-2008-0508-0604.1
Comment Excerpt Number: 55

Comment: §98.4 17 – Each fluorinated GHG report should be consistent with the reporting requirements for production, imports and exports in EPA's current HFC electronic data pilot project. This HFC pilot reporting has been designed by EPA and HFC producers to be consistent with the current Ozone Depleting Substances (ODS) Class I and Class II recordkeeping and reporting requirements found in 40 CFR §82.13 and §82.24. HFC producers are familiar with these reporting requirements and have streamlined internal processes to be consistent with the data requirements of the current reporting requirements. Inconsistencies in this proposed rule with the current reporting and recordkeeping include such requirements as reporting in metric tonnes vs. kilograms, annual reporting vs. quarterly reporting, and additional recordkeeping for exporters. This proposed reporting also goes beyond the scope of this regulation to include the reporting of non-GHG reactants and by-products. In addition, any recordkeeping and reporting

requirements should be applicable also to "products containing" an HFC which is consistent with the current language in the latest draft of the American Clean Energy and Security Act of 2009.

Response: See the response to comment EPA-HQ-OAR-2008-0508-0408.1, excerpt 26 for a discussion of the data to be reported. Although EPA has often used the reporting and recordkeeping requirements for ozone-depleting substances (40 CFR Part 82) as a model, the goals of this rule differ in some respects from those of Part 82. For example, because the Part 82 reporting requirements support a regulatory program, more frequent reporting is appropriate under that program. Only two records must be kept by exporters under this rule: a copy of the bill of lading for the export and the invoice for the export. EPA does not consider these requirements excessive.

Please see Section OO of the preamble for responses to the comments regarding the import of products containing fluorinated GHGs

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Commenter Name: Joel R. Hall
Commenter Affiliation: INEOS Fluor Americas LLC
Document Control Number: EPA-HQ-OAR-2008-0508-1525
Comment Excerpt Number: 9

Comment: Heels of fluorinated GHGs (specifically, HFCs) imported into the United States are not regulated and therefore can be removed from the container and used for an emissive purpose. Section 98.417(e) specifies requirements for records of imports of containers with a heel of fluorinated greenhouse gases (GHGs). Specifically, §98.417(e) requires that "Every person who imports a heel shall keep records of the amount brought into the United States that document that the residual amount in each shipment is less than 10 percent of the volume of the container and will : (1) Remain in the container and be included in a future shipment. (2) Be recovered and transformed. (3) Be recovered and destroyed." The proposed text appears to be based on that from40 CFR82.13(p) and 82.24(t) which are applicable to class I and class II ozone depleting substances (i.e., controlled substances under40 CFR Subpart A). Fluorinated GHGs are not controlled substances under 40 CFR Subpart A and therefore the disposition of a heel of an HFC which has been imported into the United States is not regulated. To specify that records be maintained for heels of imported fluorinated GHGs would be controlling the use of a GHG and as stated in the preamble summary, "The proposed rule does not require the control of greenhouse gases, ..." Since §98.416(d) excepts reporting of heels and because the disposition of heels of fluorinated GHGs imported into the United States is not regulated, INEOS Fluor requests that §98.417(e) be deleted from the final rule.

Response: See the response to comment EPA-HQ-OAR-2008-0508-0981.1, excerpt 64.

Commenter Name: Lorraine Krupa Gershman
Commenter Affiliation: American Chemistry Council (ACC)
Document Control Number: EPA-HQ-OAR-2008-0508-0423.2
Comment Excerpt Number: 175

Comment: The proposed rule requires persons who import a container with a heel shall keep records of the amount brought into the United States that document that the residual amount in each shipment is less than 10 percent of the volume of the container and will: (1) remain in the

container and be included in a future shipment; (2) be recovered and transformed; or (3) be recovered and destroyed. Customers routinely return containers with residual material for a variety of reasons. In rare instances, this material will be imported by a hazardous waste management facility directly for destruction. Normally, this material was originally produced by the importer, and the material will be managed as noted in (1) – (3) of §98.417(e), and the container will be returned to service since it has significant intrinsic value. In addition to (1), (2) and (3), the residual material may be recovered and resold, which we recommend EPA add to the final rule as a fourth practice. Expensive commodities such as fluorinated GHGs and nitrous oxide are routinely top-filled and included in a future shipment, i.e., practice (1), or they are removed, recovered and included in a future shipment, i.e., recommended practice (4). ACC recommends that practice (4) be added to the practices already contained in the proposed rule at §98.417(e), and that the definition of 'heel´ be revised in §98.417(e) to any volume of the original shipment in the original container. This will prevent double-counting the production of the original material after export, customer use and subsequent import. Furthermore, §98.417(d) should include an option (4) to allow facilities to reprocess heel material recovered from a returned industrial GHG cylinder that may not be suitable for direct resale but would add value as a recovered and reprocessed product.

Response: See the response to comment EPA-HQ-OAR-2008-0508-0981.1, excerpt 64.

Commenter Name: Keith Adams
Commenter Affiliation: Air Products and Chemicals, Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-1142.1
Comment Excerpt Number: 55

Comment: The proposed rule requires persons who import a container with a heel shall keep records of the amount brought into the United States that document that the residual amount in each shipment is less than 10 percent of the volume of the container and will: 1. Remain in the container and be included in a future shipment; 2. Be recovered and transformed; or 3. Be recovered and destroyed. Containers with residual un-used product are not "imported" in the same manner as is a new product intended for use. Rather, containers with heels are routinely returned by customers for a variety of reasons. In rare instances, this material will be imported by a hazardous waste management facility directly for destruction. Normally, the container and its heel are returned to the original transfill/production facility where the residual material is managed as noted above in (1) – (3) of 98.417(e). Generally, the container (e.g., cylinder, bubbler, Dewar, ISO container, hydril tube) will be returned to service since it is designed for reuse and has significant intrinsic value. In addition to (1), (2) and (3), the residual material may be recovered and resold, which Air Products recommends for consideration as "new" practice (4) of the proposed rule. Expensive commodities such as fluorinated GH Gs and nitrous oxide are routinely top-filled and included in a future shipment, i.e., practice (1); or, they are removed, recovered and included in a future shipment, i.e., recommended new practice (4). Air Products recommends that new practice (4) be added to those already contained in the proposed rule at 98.417(e), and that the definition of "heel" be revised in 98.417(e) to include any volume of the original shipment returned in the original container. This revised definition prevents counting the original material once after production and prior to export, and then double-counting it after customer use and during subsequent import.

Response: See the response to comment EPA-HQ-OAR-2008-0508-0981.1, excerpt 64.

Commenter Name: John M. Batt
Commenter Affiliation: Airgas, Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-0408.1
Comment Excerpt Number: 27

Comment: This section deals with records that must be retained. This section erroneously refers only to Fluorinated GHG production, import, and export activity. It should also apply to nitrous oxide related activities.

Response: EPA appreciates the comment and has inserted text in the final rule to clarify that producers of nitrous oxide must also keep the appropriate records.

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10. COST DATA

Commenter Name: Rich Raiders
Commenter Affiliation: Arkema Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-0511.1
Comment Excerpt Number: 24

Comment: EPA concluded that the cost for industrial GHG manufacturers to comply with this rule "would not impose an undue burden." (EPA-HQ-OAR-2008-0508-0041, Page 6) EPA also noted on Table VIII-1, 73 Fed. Reg. 16597, that the regulated community should expect to invest $0 in Subpart L, O, OO, and PP compliance capital costs. One Arkema facility developed a cost estimate that this proposal, as written today, would cost over $27,000,000 in capital cost, based on a preliminary cost estimate excluding safety system, foundation and concrete, and in-plant labor contribution costs. The annual compliance cost of the existing proposal for this one facility would reach $2,600,000, not including lost production, process downtime, and required infrastructure maintenance. Because the cost estimate contains confidential business information, Arkema has submitted CBI paper copies of the cost calculations to the docket and the EPA project manager under separate cover per 40 CFR 2. Because typical chemical process units lose several thousands of dollars per hour when not operating, operators work to minimize the amount of unplanned downtime and endeavor to conduct required equipment verification during scheduled shutdowns. The cost estimates do not include any allocation for production opportunity cost. EPA should review the cost estimates developed for the proposal, update as appropriate, and review the cost of implementation with the Office of Management and Budget. We propose several cost-saving options EPA could implement to reduce the burden to more manageable cost levels, while providing EPA with comparable, or in some cases, more accurate, GHG emissions and supply information.

Response: As discussed in Section OO of the preamble of the final rule, EPA has significantly revised the proposed monitoring requirements for industrial gas suppliers producing industrial GHGs. Given these revisions, EPA believes that producers of industrial gases should not incur any costs beyond those anticipated by EPA in the RIA for the proposed rule.

Commenter Name: Keith Adams

Commenter Affiliation: Air Products and Chemicals, Inc.
Document Control Number: EPA-HQ-OAR-2008-0508-1142.1
Comment Excerpt Number: 51

Comment: The proposed rule requires that scales, flow meters and other measuring instrumentation must have accuracy and precision of 0.2%, which essentially prescribes the use of Coriolis flow meters. The Agency recognizes in its Technical Support Documents regarding fluorinated GHGs that Coriolis flow meters are expensive. A quick web-search by Air Products identified GE Rheonik RHM Series Mass Flow Meters with prices ranging from $2,473 to $18,188, with accessory transmitter prices starting at $3,713 a piece. This cost does not address the significant cost of installation and probable production equipment modifications, nor the emissions associated with shutdown and start-up to install the new meters. Air Products engineering estimates initial expenses of $5MM - $6MM to purchase and install the instrumentation prescribed by the EPA proposed rule at its NF3 production facility, i.e., current facility design would require installation of as many as 150 new instruments including analyzers, flow meters and scales. An additional $300M per year would be incurred for the maintenance, calibration and personnel costs necessary to implement and administer the monitoring program for all of these required instruments. Furthermore, the Agency recognized that Coriolis flow meters can clog easily with solids such as salts, which are formed as a by-product of fluorinated GHG production. The Agency also states that production facilities already perform these measurements and calculations to the proposed level of accuracy and precision in order to monitor their processes and yields. This is not true for Air Products NF3 manufacturing facility in the U.S., which does not use meters accurate to 0.2% in all cases, nor monitoring instruments at all. Air Products recommends that that all twenty-three (23) facilities affected by Subparts L and OO continue using existing measurement instrumentation and engineering-based process knowledge, and essentially be “grandfathered” into the new reporting rule program. Only new fluorinated GHG production facilities should be required to implement the prescribed monitoring program with associated instrumentation.

Response: Please see the response to comment EPA-HQ-OAR-2008-0508-0511.1, excerpt 24.

Commenter Name: Sarah B. King
Commenter Affiliation: DuPont Company
Document Control Number: EPA-HQ-OAR-2008-0508-0604.1
Comment Excerpt Number: 16
Comment:
§ 98.2(b)(4) provides equation A-1, which specifies that the CO2e emissions are calculated by multiplying the mass emission of a GHG by the global warming potential of that GHG as found on Table A-1. However, Table A-1 only lists 70 compounds and the vast majority of these are refrigerants and blowing agents. The proposed regulation does not address how to calculate the CO2e emissions for fluorinated compounds NOT on Table A-1. Does this imply that Table A-1 is the complete listing of fluorinated GHG compounds subject to the Part 98 regulation? Each compound on the list should be accompanied by a GWP.

Response: Please see Section OO of the preamble for a response to this comment.

Commenter Name: Lorraine Krupa Gershman
Commenter Affiliation: American Chemistry Council (ACC)

Document Control Number: EPA-HQ-OAR-2008-0508-0423.2
Comment Excerpt Number: 19
Comment:
Section 98.2(b)(4) provides equation A-1, which specifies that the CO2e emissions are calculated by multiplying the mass emission of a GHG by the global warming potential of that GHG as found on Table A-1. However, Table A-1 only lists 70 compounds and the vast majority of these are refrigerants and blowing agents. The proposed regulation does not address how to calculate the CO2e emissions for fluorinated compounds NOT on Table A-1. Does this imply that Table A-1 is the complete listing of fluorinated GHG compounds subject to the Part 98 regulation? Each compound on the list should be accompanied by a global warming potential (GWP).

Response: Please see Section OO of the preamble for a response to this comment.

Commenter Name: Maureen Beatty
Commenter Affiliation: National Refrigerants, Inc. (NRI)
Document Control Number: EPA-HQ-OAR-2008-0508-0434.1
Comment Excerpt Number: 7
Comment:
EPA has stated it will determine GWPs for its fluorinated GHGs based on those figures calculated by the Intergovernmental Panel on Climate Change ("IPCC") in its Second Assessment Report ("SAR"). NRI has no issue with EPA basing GWP on IPCC figures but recommends that EPA use the Fourth Assessment Report rather that the Second Assessment Report. However, to the extent that a HFC is not assigned a GWP by the Fourth Assessment Report, EPA should use the figure assigned to that HFC in a credible recent scientific report.

Response: To the extent they are available for given GHGs, EPA is using the GWP values provided in the IPCC Second Assessment Report (SAR). The GWPs in the SAR have been adopted under the UNFCCC for purposes of reporting national greenhouse gas inventories, and EPA has used these values both in its UNFCCC inventory reporting and in other reports and analyses. For consistency with the international reporting system, EPA is retaining these GWPs in this rule. As noted in the proposal, for compounds whose GWPs are not available in the SAR, EPA is adopting the GWPs published in the IPCC Fourth Assessment Report (AR4, the most recent IPCC report) or, in one case (sevoflurane), adapted from the peer-reviewed scientific literature. To EPA's knowledge, all HFCs of commercial significance are included in either the SAR or AR4. (Note that the list of GWPs in AR4 was expanded in *Errata* published in July, 2008.)

As noted in the Section OO of the preamble, the final rule requires reporting of industrial GHGs in tons of chemical. Thus, if and when EPA adopts revised GWPs, the Agency will be able to recalculate the CO_2-equivalent of previously reported emissions based on the revised GWPs.

Commenter Name: Jeffry C. Muffat
Commenter Affiliation: 3M Company
Document Control Number: EPA-HQ-OAR-2008-0508-0793.1
Comment Excerpt Number: 17a

Comment: Very minor emissions of fluorinated GHG may occur during filter replacement and some fluorinated GHG will be contained in waste filters or adsorbents which are disposed at

hazardous waste incinerators. Under the rule provisions, mass flow measurements would be required for spent filter media. Analysis of each stream would also be required. Normally, these waste filters would be placed in waste containers and no weight measurement would be required for their proper disposal. In addition, these filters might be comingled with other solid process wastes in satellite accumulation areas. This rule would require segregation of each product's waste into separate containers which would unnecessarily complicate manufacturing operations and increase safety and environmental risks. There are many more activities that would fall into this category based on a reasonable interpretation of the proposed rule: (a) Sample containers: Samples are frequently taken during the course of chemical processing to verify system performance. The rule would require mass measurements (and analytical testing) for many reactants, products, and by-products. (b) Bag stock additions are typically based on vendor specifications and may not be weighed prior to addition to the process. (c) In order to obtain accurate mass flow measurements, all sample containers, pails, drums, and other containers may require tare weights. These measurements are not commonly made in many manufacturing locations.

Response: EPA agrees with the commenter that it is not worthwhile, for purposes of tracking U.S. consumption of industrial gases, to measure the masses of very small quantities of fluorinated GHGs that are destroyed because they are entrained in other media such as destroyed filters and destroyed sample containers. EPA's understanding from discussions with the commenter is that these quantities comprise less than one percent of the total quantities of fluorinated GHGs destroyed and that routinely tracking these quantities would be burdensome. Moreover, these quantities would not have entered the U.S. supply of fluorinated GHGs in any event. EPA is therefore modifying subpart OO to exempt these quantities from the requirements to measure the masses of fluorinated GHGs destroyed and sent off-site for destruction.

Table 1

COMMENTER	AFFILIATE	DCN
James Greenwood	Valero Energy Corporation	EPA-HQ-OAR-2008-0508-0571.1 EPA-HQ-OAR-2008-0508-0571.2
Charles T. Drevna	National Petrochemical and Refiners Association	EPA-HQ-OAR-2008-0508-0433.1 EPA-HQ-OAR-2008-0508-0433.2