



## Overview

These tips are provided to assist importers or their authorized agents with filing obligations related to imports of bulk hydrofluorocarbons (HFCs) under the American Innovation and Manufacturing (AIM) Act. The following information is included:

- Overview of the regulatory requirements for importing bulk HFCs.
- List of current [Harmonized Tariff Schedule](#) (HTS) codes for HFCs.
- Tips for how to file in the [Automated Commercial Environment](#) (ACE) including examples of documents to upload in the Document Image System (DIS). Tips are provided for:
  - Filing in ACE for bulk HFCs;
  - Filing in ACE for bulk HFCs contained in blends (also referred to as mixtures);
  - Filing in ACE for bulk HFCs for destruction or transformation; and
  - Filing in ACE for entering a Foreign Trade Zone (FTZ) or a transshipment.
- Additional resources.

Contact EPA at [HFCAllocation@epa.gov](mailto:HFCAllocation@epa.gov) if you have questions about whether the HFCs being imported are bulk HFCs. For questions on how to file, refer to your ACE software provider's training and guidance or your U.S. Customs and Border Protection (CBP) client representative. Visit <https://www.epa.gov/climate-hfcs-reduction> for more information on the phasedown of HFCs.

## HFCs and the AIM Act

HFCs are fluorinated chemicals commonly used as replacements for ozone-depleting substances (ODS) in refrigeration, air conditioning, aerosols, fire suppression, and foam blowing. HFCs are greenhouse gases with global warming potentials (GWPs) that can be hundreds to thousands of times more potent than carbon dioxide (CO<sub>2</sub>). Their use has been rapidly increasing worldwide due to the global phaseout of ODS under the *Montreal Protocol on Substances that Deplete the Ozone Layer* and increased demand for refrigeration and air conditioning.

The AIM Act was enacted on Dec. 27, 2020. The AIM Act directs the U.S. Environmental Protection Agency (EPA) to phase down U.S. production and consumption of HFCs by 85% by the year 2036 through an allowance allocation and trading program.

### What are bulk HFCs?

Under 40 CFR 84.3, **bulk** means a regulated substance (i.e., an HFC listed at [Appendix A of 40 CFR part 84](#)) of any amount that is in a container for the transportation or storage of that substance such as cylinders, drums, ISO tanks, and small cans. A regulated substance that must first be transferred from a container to another container, vessel, or piece of equipment in order to realize its intended use is a bulk substance. A regulated substance contained in a manufactured product such as an appliance, an aerosol can, or a foam is not a bulk substance. Allowances must be expended to import bulk regulated substances regardless of whether the import is of an HFC that is imported as a single component substance (i.e., neat substance) or whether the HFC is part of a multicomponent substance (i.e., a blend or mixture containing one or more regulated substances).

**As of Jan. 1, 2022, importers of bulk HFCs (whether imported as a neat substance or as part of a blend or mixture) are required to expend HFC consumption or application-specific allowances. Under EPA's regulations, allowances must be expended at the time of ship berthing for vessel arrivals, border crossing for land arrivals, and first point of terminus in U.S. jurisdiction for arrivals via air. For limited exceptions (imports for destruction or transformation, or transshipments), the importer must directly petition (imports for destruction or transformation) or report**

(transhipments) to EPA<sup>1</sup> in advance. The importer must also obtain from EPA a non-objection notice (for imports for destruction or transformation) or transhipment confirmation notification (for transhipments), in addition to filing imports through ACE.

EPA requires information related to bulk HFC imports, including HTS codes, to be electronically filed through ACE prior to importation.

## Reporting Requirements<sup>2</sup>

Per [40 CFR 84.31\(c\)\(7\)](#), EPA requires the importer of record, or their authorized agent, to electronically file the following information through ACE no later than 10 days if arriving by marine vessel or 5 days if arriving by non-marine vessel (e.g., truck, rail, air) prior to the date of importation (consistent with CBP's definition at 19 CFR 101.1):

- Cargo Description
- Net Weight, Gross Weight, and Weight Unit of Measure
- Container Number(s) associated with the Shipment, as applicable
- Port of Entry
- Scheduled Entry Date
- HTS Code and HTS Description for the regulated substance (including imports of heels)
- Origin Country
- Importer of Record Name and Associated Number
- Consignee Entity Name
- CAS Number(s) of the HFC(s) imported and, for HFCs that are in a mixture, either the ASHRAE numerical designation of the refrigerant or the percentage of the mixture containing each HFC
- If importing HFCs for transformation or destruction, a copy of the non-objection notice issued consistent with 40 CFR 84.25
- If importing HFCs as a transhipment, a copy of the confirmation documenting the importer reported the transhipment consistent with 40 CFR 84.31(c)(3)(i)
- A certificate of analysis, if the certificate of analysis is not physically accompanying the shipment pursuant to 40 CFR 84.5(b)(1)(v)

## Harmonized Tariff Schedule (HTS) Codes

The following are HTS codes for HFCs; single component HFCs can generally be found in Chapter 29 of the HTS, and blends can be found in Chapter 38 of the HTS. The correct HTS codes for any amount of bulk HFC imports and exports, including those contained in residual “heels,” must be used. Do not use generic or overly broad HTS codes when the bulk HFCs being imported fall under a more specific HTS code. For example, bulk R-410A should be imported under HTS code 3827.63.0000, not HTS codes 3827.69.00.00 or 3827.90.90.00. See the text below for more details.

Certain HTS codes correspond to specific regulated bulk HFCs. These HTS codes have “tariff flag” EH2. This means that importers must submit the additional data that EPA requires under the AIM Act when importing using these codes. Other HTS codes cover goods that may or may not be bulk HFCs. These HTS codes have “tariff flag” EH1. If the goods being imported are not regulated bulk HFCs, the EPA “message set” for imports under these EH1 HTS codes may be disclaimed, using disclaim code A. Note that blends of chemicals in which one or more components of the blend are regulated bulk HFCs cannot be disclaimed.

<sup>1</sup> For more information about required reporting, please visit, <https://www.epa.gov/climate-hfcs-reduction/hfc-allocation-rule-reporting-and-recordkeeping>.

<sup>2</sup> The reporting requirements are consistent with the Final Rule, *Phasedown of Hydrofluorocarbons: Allowance Allocation Methodology for 2024 and Later Years*, effective September 18, 2023.

Current HTS Codes<sup>3</sup>

HTS Code	Description/Regulated Substance	Tariff Flag
2903.41.1000	Trifluoromethane (HFC-23)	EH2
2903.42.1000	Difluoromethane (HFC-32)	EH2
2903.43.1000	Fluoromethane (HFC-41), 1,2-difluoroethane (HFC-152) and 1,1-difluoroethane (HFC-152a)	EH1
2903.44.1010	Pentafluoroethane (HFC-125)	EH2
2903.44.1020	1,1,1-trifluoroethane (HFC-143a)	EH2
2903.44.1030	1,1,2-trifluoroethane (HFC-143)	EH2
2903.45.1000	1,1,1,2-Tetrafluoroethane (HFC-134a) and 1,1,2,2-tetrafluoroethane (HFC-134)	EH1
2903.46.1000	1,1,1,2,3,3,3-Heptafluoropropane (HFC-227ea), 1,1,1,2,2,3-hexafluoropropane (HFC-236cb), 1,1,1,2,3,3-hexafluoropropane (HFC-236ea) and 1,1,1,3,3,3-hexafluoropropane (HFC-236fa)	EH2
2903.47.1000	1,1,1,3,3-Pentafluoropropane (HFC-245fa) and 1,1,2,2,3-pentafluoropropane (HFC-245ca)	EH2
2903.48.0000	1,1,1,3,3-Pentafluorobutane (HFC-365mfc) and 1,1,1,2,2,3,4,5,5,5-decafluoropentane (HFC-4310mee)	EH2
2903.49.00.00	Saturated fluorinated derivatives of acyclic hydrocarbons: Other	EH1
3827.11.00.00	Mixtures containing halogenated derivatives of methane, ethane or propane, not elsewhere specified or included: Containing chlorofluorocarbons (CFCs), whether or not containing hydrochlorofluorocarbons (HCFCs), perfluorocarbons (PFCs) or hydrofluorocarbons (HFCs)	EH1
3827.12.00.00	Mixtures containing halogenated derivatives of methane, ethane or propane, not elsewhere specified or included: Containing hydrobromofluorocarbons (HBFCs)	EH1
3827.13.00.00	Mixtures containing halogenated derivatives of methane, ethane or propane, not elsewhere specified or included: Containing carbon tetrachloride	EH1
3827.14.00.00	Mixtures containing halogenated derivatives of methane, ethane or propane, not elsewhere specified or included: Containing 1,1,1-trichloroethane (methyl chloroform)	EH1
3827.20.00.00	Mixtures containing halogenated derivatives of methane, ethane or propane, not elsewhere specified or included: Containing bromochlorodifluoromethane (Halon-1211), bromotrifluoromethane (Halon-1301) or dibromotetrafluoroethanes (Halon-2402)	EH1
3827.31.00.00	Containing hydrochlorofluorocarbons (HCFCs), whether or not containing perfluorocarbons (PFCs) or hydrofluorocarbons (HFCs), but not containing chlorofluorocarbons (CFCs): Containing substances of subheadings 2903.41 to 2903.48	EH2
3827.32.00.00	Mixtures containing halogenated derivatives of methane, ethane or propane, not elsewhere specified or included: Other, containing substances of subheadings 2903.71 to 2903.75	EH1
3827.39.00.00	Mixtures containing halogenated derivatives of methane, ethane or propane, not elsewhere specified or included: Other	EH1
3827.40.00.00	Mixtures containing halogenated derivatives of methane, ethane or propane, not elsewhere specified or included: Containing methyl bromide (bromomethane) or bromochloromethane	EH1
3827.51.0000	Mixtures containing halogenated derivatives of methane, ethane or propane: Containing trifluoromethane (HFC-23) or PFCs but not containing CFCs or HCFCs	EH1

<sup>3</sup> The HTS codes listed in this fact sheet are valid as of January 27, 2022.

HTS Code	Description/Regulated Substance	Tariff Flag
3827.59.00.00	Mixtures containing halogenated derivatives of methane, ethane or propane, not elsewhere specified or included: Other	EH1
3827.61.0000	Mixtures containing halogenated derivatives of methane, ethane or propane, containing other HFCs but not containing CFCs or HCFCs: Containing 15 percent or more by mass of 1,1,1-trifluoroethane (HFC-143a)	EH2
3827.62.0000	Mixtures containing halogenated derivatives of methane, ethane or propane, containing other HFCs but not containing CFCs or HCFCs: Other, not included above, containing 55 percent or more by mass of pentafluoroethane (HFC- 125) but not containing unsaturated fluorinated derivatives of acyclichydrocarbons (HFOs)	EH2
3827.63.0000	Mixtures containing halogenated derivatives of methane, ethane or propane, containing other HFCs but not containing CFCs or HCFCs: Other, not included above, containing 40 percent or more by mass of pentafluoroethane (HFC-125)	EH2
3827.64.0000	Mixtures containing halogenated derivatives of methane, ethane or propane, containing other HFCs but not containing CFCs or HCFCs: Other, not included above, containing 30 percent or more by mass of 1,1,1,2-tetrafluoroethane (HFC-134a) but not containing unsaturated fluorinated derivatives of acyclic hydrocarbons (HFOs)	EH2
3827.65.0000	Mixtures containing halogenated derivatives of methane, ethane or propane, containing other HFCs but not containing CFCs or HCFCs: Other, not included above, containing 20 percent or more by mass of difluoromethane (HFC-32) and 20 percent or more by mass of pentafluoroethane (HFC-125)	EH2
3827.68.0000	Mixtures containing halogenated derivatives of methane, ethane or propane, containing other HFCs but not containing CFCs or HCFCs: Other, not included above, containing substances of subheadings 2903.41 to 2903.48	EH2
3827.69.00.00	Containing other hydrofluorocarbons (HFCs) but not containing chlorofluorocarbons (CFCs) or hydrochlorofluorocarbons (HCFCs): Other	EH1
3827.90.90.00	Containing other hydrofluorocarbons (HFCs) but not containing chlorofluorocarbons (CFCs) or hydrochlorofluorocarbons (HCFCs): Other	EH1

## Tips when Filing an HFC Import in ACE

### Determining Filing Requirements:

If you import bulk HFCs, including HFCs in blends, you will need to file in ACE. If you have questions about whether the HFCs you are importing are bulk HFCs, please contact EPA at [HFCAllocation@epa.gov](mailto:HFCAllocation@epa.gov). Information on filing in ACE when HFCs enter an FTZ or are being transhipped through the United States is provided in Appendix A (see page 6). Under EPA’s HFC requirements, all imports, regardless of value, must be reported no later than 5 days before the date of importation for truck, rail, air, and other non-sea arrivals and 10 days before the date of importation for arrivals by sea. Filers who are importing low value goods are not exempt from these requirements and can report this information by participating in and filing Type 86 entries with the required information for HFC filings.<sup>4</sup>

### Filing in ACE for Bulk HFCs:

The table above lists the “neat” (single component) regulated HFCs and their HTS codes, as well as the HTS codes for blended HFCs. A list of common HFC blends and their HTS codes is included in Appendix B of this tip sheet. The data that EPA requires importers to submit with each import must be submitted electronically as a part of the Partner Government

<sup>4</sup> For more information about the ACE Entry Type 86 Test, see the Federal Register Notice, “[Test Concerning Entry of Section 321 Low-Valued Shipments Through Automated Commercial Environment \(ACE\)](#)” (84 FR 40079, August 13, 2019) and [Entry Type 86 Frequently Asked Questions](#).

Agency (PGA) Message Set system. EPA and CBP have created a new “HFC” PGA Message Set, which covers the HTS codes listed in the table above. **You will need to file a Partner Government Agency (PGA) Message Set as described in steps 1-6. File the PGA Message Set electronically by typing into existing screens in your software and transmit to ACE.**

1. Use HFC Government Agency Program Code within the PG01 record and the electronic image indicator.
2. File imports of bulk HFC using one of the HTS codes listed in this fact sheet. These HTS codes have either EH1 or EH2 tariff flag codes, which are being used for HFCs; see section above titled “HTS codes” for more details on tariff flag codes.
  - a. Note that you must report each specific bulk HFC that is being imported. You can do this using Chemical Abstracts Service Registry numbers (CAS numbers) or American Society of Heating, Refrigerating and Air-Conditioning Engineers numbers (ASHRAE numbers). For imports of HFC blends, you can report using the ASHRAE number if the HFC blend’s component percentages exactly match the ASHRAE-defined component percentages. If you are importing a blend that does not exactly adhere to the ASHRAE-defined component percentages, you should report the blend using CAS numbers. To report a blend using CAS numbers, list the CAS number of each component of the blend (regulated HFC components only) and then list the percentage of the total mass that component represents. The percentages may not add up to 100%, if the blend contains components that are not regulated HFCs.
  - b. Note that you also need to report the net weight of the HFC or HFC blend. In addition, importers must report the container IDs (if applicable), certain contact information, a commercial description, and a few additional data elements. Please see the [CATAIR document](#) for more details.
3. File with Entry (Cargo Release) or Entry Summary Certified for Cargo Release. This must be done 10 days before arrival for ocean shipments and 5 days before arrival for all other modes of transportation.
4. If you filed correctly using the HFC program code for one of the listed tariff codes and you have allowances, you will receive a “may proceed.” The data is automatically validated. Your filing may be rejected if (1) you do not completely file, (2) you do not correctly identify the specific HFC(s) being imported, or (3) the importer does not have sufficient allowances for the HFC(s) that would be imported. Note: EPA may manually review these filings to ensure that *all* filing and import requirements have been met, and if not, take action.
5. If your filing is rejected there may be one or more issues with your entry potentially including:
  - a. You may have entered insufficient or invalid data. Please see appendix D for lists of valid CAS numbers and ASHRAE numbers. These numbers identify neat HFCs and HFC blends. See the [CATAIR document](#) for additional details.
  - b. You may not have sufficient allowances to allow for the import.
  - c. You may not have provided the appropriate reports or information to EPA and therefore you must correct your EPA message set by following steps 7-9 below.
  - d. You may have chosen the wrong program code and therefore you must make a correction to use the HFC program code.
6. If not physically accompanying the shipment, also upload a certificate of analysis in the DIS and label the image as “EPA\_CERTIFICATE\_OF\_ANALYSIS”. Link the DIS filing to the bill on file.

### HFC Allowance Calculator

EPA has developed an HFC allowance calculator to determine how many allowances are needed for an import, as well as the CAS numbers and HTS code for each HFC or HFC blend. The calculator is provided as a downloadable file at <https://go.usa.gov/xt67S>.

### Additional Steps for Filing in ACE for (1) imports of HFCs that will be transformed or destroyed or (2) transshipments:

7. File the PGA Message Set for the PG01 record that has the HFC Government Agency Program code and the electronic image indicator (which is a mandatory field).

8. For imports for destruction or transformation, in addition to the HFC filing described in steps 1-3, upload a copy of the non-objection notice issued under 40 CFR 84.25 and label the image as "EPA\_NON\_OBJECTION\_NOTICE". Link the DIS filing to the bill on file
9. For transshipments, in addition to the HFC filing described in steps 1-3, upload an image to DIS of the transshipment notice issued under 40 CFR 84.31(c)(3) and label the image "EPA\_CONFIRMATION\_NOTICE\_TRANSHIPMENT." Link the DIS filing to the bill on file

Examples of document uploads are provided below.

**Tips for Filing the PGA Message Set:**

Reminder, make sure you are using the correct Government Program Agency Code for EPA: "HFC" for filing HFCs.

Examples of Documents to Upload in the DIS

Example Non-Objection Notice Received from EPA (Step 9); Label the image uploaded to the DIS as "EPA\_NON\_OBJECTION\_NOTICE"

John Smith  
 AIM UAT ICF Company 10  
 6572 Arlington Blvd  
 Suite 407  
 Falls Church, Virginia 22045

February 18, 2022

Dear Mr. Smith,

This letter serves as a "non-objection notice" by the U.S. Environmental Protection Agency (EPA) in response to your petition received on February 8, 2022 to import regulated hydrofluorocarbons (HFCs) for use in a process resulting in transformation or destruction (Report ID: TDPET\_2022\_00083\_01, Alias: Test100), consistent with the information in the enclosed table (see attached list).

Please inform the EPA of the exact date of the shipment and the name of the vessel once they have been determined. Also, please be advised that this non-objection notice permits AIM UAT ICF Company 10 to import the undermentioned quantity of HFCs as one individual shipment only.

This letter confirms the EPA's receipt of the information required in a petition to import regulated substances, as outlined in 40 CFR 84.25(a)(1). A copy of your petition and this non-objection notice must accompany the shipment through U.S. Customs and Border Protection. In addition, AIM UAT ICF Company 10 must submit a quarterly importer report to EPA, as required per 40 CFR 84.31(c)(1), to report the amounts and types of HFCs imported into the United States.

If new information is brought to the EPA's attention which shows that this non-objection notice was issued based on false or misleading information, the agency has the right to revoke and void the non-objection notice, pursue all means to ensure that the regulated substance is not imported into the United States, take appropriate enforcement actions, and apply administrative consequences.

Non-Objection Notice Attachment		
U.S. Environmental Protection Agency		
Importer:	AIM UAT ICF Company 10	
Report ID:	TDPET_2022_00083_01	
Regulated Substance	HTS Code	Quantity Approved (kg)
HFC-134a	2903.45.1000	234.0
HFC-32	2903.42.1000	468.0
<b>Total Weight of Regulated HFCs in Shipment:</b>		<b>702.0</b>
Unique Container ID(s):	0023423, 234234	
Country of Export:	Canada	
Port of Entry into the United States:	Worcester, Massachusetts - 0403	
Customs Entry Number(s):	abc123456789	
Shipment must arrive before:	February 18, 2023	

Example of a Certificate of Analysis; Label the image uploaded to the DIS as "EPA\_CERTIFICATE\_OF\_ANALYSIS"



**CERTIFICATE OF ANALYSIS**

**R134A**

To: [Redacted]

By Vessel: [Redacted] Sales Contract No.: [Redacted]  
From: [Redacted] To: [Redacted]

PRODUCT NAME: REFRIGERANT GAS  
200 CYLINDERS R134A  
10 CARTONS(200 CANS) R134A  
QUANTITY: 210 PCS

SAMPLE DATE: 20180706  
INSPECTION DATE: 20180706  
EXPIRE DATE: 20190705  
PRODUCTION LOT NUMBER: [Redacted]

WE HERE BY CERTIFY THAT THE ABOVE PRODUCT WAS TESTED AND FOLLOWING RESULTS HAVE BEEN OBTAINED.

TEST ITEMS	SPEC.	RESULTS
Appearance	Bright & Clear Liquid.	Bright & Clear Liquid.
Purity (% by weight)	99.90 min	99.96
Water (% by weight)	0.0010 max.	0.0001
Acidity (% by weight)	0.0001 max.	NONE
Non Condensables (% by volume)	1.0 max	0.31
High Boiling Residue (% by weight)	0.0100 max.	0.01
Chloride (pass/fail)	pass	pass
Total Chlorofluoro Unsaturates (% by weight)	0.0040 max	0.001

CONCLUSION: CONFORMITY.

For more information on the phasedown of HFCs, visit <https://www.epa.gov/climate-hfcs-reduction>.



## Appendix A: Tips when Filing for Entering a Foreign Trade Zone (FTZ) or a Transshipment in ACE

If you intend to import HFCs through FTZs, please take two actions. First, contact EPA at [HFCAllocation@epa.gov](mailto:HFCAllocation@epa.gov) for further guidance. The Agency is in the process of refining the way it screens HFC entries through FTZs. Second, please file the PGA message set information (described above) when the bulk HFCs enter commerce via CBP’s type 06 entry.

If you intend to tranship bulk HFCs through the United States, you will need to file in ACE no later than 10 days if arriving by marine vessel or 5 days if arriving by a non-marine vessel prior to the shipment arriving for in-bond entry/transshipment.

Then take the following actions:

1. Upload an image to the DIS that contains the information listed in 40 CFR 84.31(c)(7) including a copy of the confirmation documenting the importer reported the transshipment consistent with 40 CFR 84.31(c)(3)(i), if applicable. An example confirmation notification is provided below.
2. Label the image uploaded to the DIS as “EPA\_CONFIRMATION\_NOTICE\_TRANSshipment” so EPA can view it.
3. Link the DIS filing to the bill on file.
4. Notify EPA at [HFCAllocation@epa.gov](mailto:HFCAllocation@epa.gov) when filing transshipments through the DIS.

### Example Transshipment Confirmation Notification Received from EPA; Label the image uploaded to the DIS as “EPA\_CONFIRMATION\_NOTICE\_TRANSshipment”

John Smith  
 AIM UAT ICF Company 10  
 6572 Arlington Blvd  
 Suite 407  
 Falls Church, Virginia 22045

March 1, 2022

Dear Mr. Smith,

This letter serves as a "confirmation notice" by the U.S. Environmental Protection Agency (EPA) in response to your notification of intent to tranship hydrofluorocarbons (HFCs) through the United States received on March 1, 2022 (Report ID: HSHIP\_2022\_00062\_01), consistent with the information below.

Importer:	AIM UAT ICF Company 10
<b>Regulated Substance</b>	<b>Quantity (kg)</b>
HFC-134a	25
<b>Total Weight of Regulated HFCs in Shipment:</b>	25
Source Country:	Canada
Intended Port of Entry into the United States:	Worcester, Massachusetts - 0403
<b>Expected Year of Import:</b>	<b>2022</b>

This letter confirms EPA's receipt of the information required in a notification of transshipment of regulated substances, as outlined in 40 CFR 84.31(c)(3)(i). The regulated substances must be exported within six months of import, and you must notify EPA that the shipment was exported from the United States within 10 working days of the export, per 40 CFR 84.31(c)(3)(ii).

## Appendix B: Common HFC Blends and HTS Codes

HTS Code	HTS Code Description	ASHRAE No.
<b>Chapter 38 – HFC Blends</b>		
Mixtures containing halogenated derivatives of methane, ethane or propane not elsewhere specified or included:		
3827.51.0000	Containing trifluoromethane (HFC-23) or perfluorocarbons (PFCs) but not containing chlorofluorocarbons (CFCs) or hydrochlorofluorocarbons (HCFCs):	R-508A
Containing other hydrofluorocarbons (HFCs) but not containing chlorofluorocarbons (CFCs) or hydrochlorofluorocarbons (HCFCs):		
3827.61.0000	Containing 15 percent or more by mass of 1,1,1-trifluoroethane (HFC-143a)	R-404A
		R-507A
3827.62.0000	Other, not included in the subheading above, containing 55 percent or more by mass of pentafluoroethane (HFC- 125) but not containing unsaturated fluorinated derivatives of acyclic hydrocarbons (HFOs)	R-421A
		R-422D
3827.63.0000	Other, not included in the subheadings above, containing 40 percent or more by mass of pentafluoroethane (HFC-125)	R-407A
		R-410A
		R-452A
3827.64.0000	Other, not included in the subheadings above, containing 30 percent or more by mass of 1,1,1,2-tetrafluoroethane (HFC-134a) but not containing unsaturated fluorinated derivatives of acyclic hydrocarbons (HFOs)	R-407C
3827.65.0000	Other, not included in the subheadings above, containing 20 percent or more by mass of difluoromethane (HFC-32) and 20 percent or more by mass of pentafluoroethane (HFC-125)	R-448A
		R-449A
3827.68.0000	Other, not included in the subheadings above, containing substances of subheadings 2903.41 to 2903.48	R-450A
		R-452B
		R-454B
		R-513A

For a more exhaustive list of HFC blends and their HTS codes, download the [HFC Allowance Calculator](#).

## Appendix C: Additional Resources

See the following resources for more information related to imports of HFCs under the AIM Act:

- [Final Rule – Phasedown of Hydrofluorocarbons: Allowance Allocation Methodology for 2024 and Later Years](#)
- [Final Rule – Phasedown of Hydrofluorocarbons: Establishing the Allowance Allocation and Trading Program Under the American Innovation and Manufacturing Act](#)
- [Frequently Asked Questions – Phasedown of Hydrofluorocarbons Final Rule](#)
- [HFC Allowance Allocations](#)
- [HFC Allowance Calculator](#) (provided as a downloadable file)
- [Fact Sheet – Overview of Requirements for Importers of HFCs](#)
- [HFC Allocation Rule Reporting and Recordkeeping](#)

## Appendix D: Valid CAS & ASHRAE Numbers

### Valid CAS Numbers

CAS Number	Chemical Name
354-33-6	HFC-125
359-35-3	HFC-134
811-97-2	HFC-134a
430-66-0	HFC-143
420-46-2	HFC-143a
624-72-6	HFC-152

CAS Number	Chemical Name
75-37-6	HFC-152a
431-89-0	HFC-227ea
75-46-7	HFC-23
677-56-5	HFC-236cb
431-63-0	HFC-236ea
690-39-1	HFC-236fa

CAS Number	Chemical Name
679-86-7	HFC-245ca
460-73-1	HFC-245fa
75-10-5	HFC-32
406-58-6	HFC-365mfc
593-53-3	HFC-41
138495-42-8	HFC-43-10mee

### Valid ASHRAE Numbers

R-125	R-402B	R-410B	R-421A	R-429A	R-447A	R-454A	R-462A	R-503
R-134a	R-404A	R-411A	R-421B	R-430A	R-447B	R-454B	R-463A	R-504
R-143a	R-405A	R-411B	R-422A	R-431A	R-448A	R-454C	R-464A	R-507
R-152a	R-407A	R-413A	R-422B	R-434A	R-448B	R-455A	R-465A	R-507A
R-227ea	R-407B	R-415A	R-422C	R-435A	R-449A	R-456A	R-466A	R-508A
R-23	R-407C	R-415B	R-422D	R-437A	R-449B	R-457A	R-467A	R-508B
R-236fa	R-407D	R-416A	R-422E	R-438A	R-449C	R-457B	R-468A	R-512A
R-245fa	R-407E	R-417A	R-423A	R-439A	R-450A	R-458A	R-469A	R-513A
R-32	R-407F	R-417B	R-424A	R-440A	R-451A	R-459A	R-470A	R-513B
R-41	R-407G	R-417C	R-425A	R-442A	R-451B	R-459B	R-470B	R-515A
R-401A	R-407H	R-418A	R-426A	R-444A	R-452A	R-460A	R-471A	R-515B
R-401B	R-407I	R-419A	R-427A	R-444B	R-452B	R-460B	R-472A	R-516A
R-401C	R-408A	R-419B	R-427C	R-445A	R-452C	R-460C	R-473A	
R-402A	R-410A	R-420A	R-428A	R-446A	R-453A	R-461A	R-500	