

**ANSI/ASHRAE Addenda and Additions to
ANSI/ASHRAE Standard 34-2007**



ASHRAE STANDARD

Designation and Safety Classification of Refrigerants

Approved by the ASHRAE Standards Committee on June 20, 2009; by the ASHRAE Board of Directors on June 24, 2009; and by the American National Standards Institute on June 25, 2009.

This standard is under continuous maintenance by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the standard. The change submittal form, instructions, and deadlines may be obtained in electronic form from the ASHRAE Web site, <http://www.ashrae.org>, or in paper form from the Manager of Standards. The latest edition of an ASHRAE Standard may be purchased from ASHRAE Customer Service, 1791 Tullie Circle, NE, Atlanta, GA 30329-2305. E-mail: orders@ashrae.org. Fax: 404-321-5478. Telephone: 404-636-8400 (worldwide), or toll free 1-800-527-4723 (for orders in US and Canada).

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ASHRAE obtains consensus through participation of its national and international members, associated societies, and public review.

ASHRAE Standards are prepared by a Project Committee appointed specifically for the purpose of writing the Standard. The Project Committee Chair and Vice-Chair must be members of ASHRAE; while other committee members may or may not be ASHRAE members, all must be technically qualified in the subject area of the Standard. Every effort is made to balance the concerned interests on all Project Committees.

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- a. interpretation of the contents of this Standard,
- b. participation in the next review of the Standard,
- c. offering constructive criticism for improving the Standard, or
- d. permission to reprint portions of the Standard.

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ASHRAE uses its best efforts to promulgate Standards and Guidelines for the benefit of the public in light of available information and accepted industry practices. However, ASHRAE does not guarantee, certify, or assure the safety or performance of any products, components, or systems tested, installed, or operated in accordance with ASHRAE's Standards or Guidelines or that any tests conducted under its Standards or Guidelines will be nonhazardous or free from risk.

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ASHRAE Standards and Guidelines are established to assist industry and the public by offering a uniform method of testing for rating purposes, by suggesting safe practices in designing and installing equipment, by providing proper definitions of this equipment, and by providing other information that may serve to guide the industry. The creation of ASHRAE Standards and Guidelines is determined by the need for them, and conformance to them is completely voluntary.

In referring to this Standard or Guideline and in marking of equipment and in advertising, no claim shall be made, either stated or implied, that the product has been approved by ASHRAE.

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

This addendum adds new refrigerant 438A to Table 2 and Table D2.

Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~strike through~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

Addendum af to ASHRAE Standard 34-2007

Add the following to Table 2 and Table D2 in the columns indicated:

TABLE 1 Data and Safety Classifications for Refrigerant Blends

Refrigerant Number = 438A
Composition (Mass %) = R-32/125/134a/600/601a
(8.5/45.0/44.2/1.7/0.6)^{ai}
OEL = 990
Safety Group = A1
RCL = 19,000 ppm v/v; 79 g/m³; 4.9 lb/Mcf
Highly Toxic or Toxic Under Code Classification = Neither

^{ai}Composition tolerances are: (+0.5, -1.5 / ±1.5 / ±1.5 / +0.1, -0.2 / +0.1, -0.2)

TABLE D2 Data for Refrigerant Blends

Refrigerant Number = 438A
Composition (Mass %) = R-32/125/134a/600/601a
(8.5/45.0/44.2/1.7/0.6)^v
Average Molecular Mass = 99.1
Bubble Point (°C) = -43.0
Dew Point (°C) = -36.4
Bubble Point (°F) = -45.4
Dew Point (°F) = -33.5

^vComposition tolerances are: (+0.5, -1.5 / ±1.5 / ±1.5 / +0.1, -0.2 / +0.1, -0.2)

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

This addendum changes the safety classification of R-403A from A1 to A2. This refrigerant was added to the standard before there was a requirement for flammability testing at elevated temperatures. Although non-flammable at 23°C, as part of ASHRAE research project 1073RP, R-403A was shown to have an elevated temperature flammability limit of 13.1% by volume when the worst case fractionated formulation (WCFF) for flammability was tested at 60°C.

Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~striking through~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

Addendum ag to ASHRAE Standard 34-2007

Make the following change to the safety classification of R-403A:

**TABLE 3 Data and Safety Classifications
for Refrigerant Blends**

Refrigerant Number = R-403A

Safety Group = ~~A1~~ A2

All other entries for this refrigerant remain unchanged.

**POLICY STATEMENT DEFINING ASHRAE'S CONCERN
FOR THE ENVIRONMENTAL IMPACT OF ITS ACTIVITIES**

ASHRAE is concerned with the impact of its members' activities on both the indoor and outdoor environment. ASHRAE's members will strive to minimize any possible deleterious effect on the indoor and outdoor environment of the systems and components in their responsibility while maximizing the beneficial effects these systems provide, consistent with accepted standards and the practical state of the art.

ASHRAE's short-range goal is to ensure that the systems and components within its scope do not impact the indoor and outdoor environment to a greater extent than specified by the standards and guidelines as established by itself and other responsible bodies.

As an ongoing goal, ASHRAE will, through its Standards Committee and extensive technical committee structure, continue to generate up-to-date standards and guidelines where appropriate and adopt, recommend, and promote those new and revised standards developed by other responsible organizations.

Through its *Handbook*, appropriate chapters will contain up-to-date standards and design considerations as the material is systematically revised.

ASHRAE will take the lead with respect to dissemination of environmental information of its primary interest and will seek out and disseminate information from other responsible organizations that is pertinent, as guides to updating standards and guidelines.

The effects of the design and selection of equipment and systems will be considered within the scope of the system's intended use and expected misuse. The disposal of hazardous materials, if any, will also be considered.

ASHRAE's primary concern for environmental impact will be at the site where equipment within ASHRAE's scope operates. However, energy source selection and the possible environmental impact due to the energy source and energy transportation will be considered where possible. Recommendations concerning energy source selection should be made by its members.