



# ADDENDA

**ANSI/ASHRAE Addendum f to  
ANSI/ASHRAE Standard 34-2016**

# Designation and Safety Classification of Refrigerants

Approved by the ASHRAE Standards Committee on October 3, 2017; by the ASHRAE Technology Council on October 9, 2017; and by the American National Standards Institute on October 10, 2017.

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ISSN 1041-2336



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## FOREWORD

*This addendum adds the single-component refrigerant R-1132a to Tables 4-1, D-1, and E-1.*

**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 f to Standard 34-2016

*Add the following underlined data to Tables 4-1, D-1, and E-1 in the columns indicated.*

#### TABLE 4-1 Refrigerant Data and Safety Classifications

Refrigerant Number = R-1132a  
Chemical Name = 1,1-difluoroethylene  
Chemical Formula = CF<sub>2</sub>=CH<sub>2</sub>  
OEL = 500 ppm v/v  
Safety Group = A2  
RCL = 13,000 ppm v/v; 2.0 lb/Mcf; 33 g/m<sup>3</sup>  
Highly Toxic or Toxic Under Code Classification = Neither

#### TABLE D-1 Refrigerant Data

Refrigerant Number = R-1132a  
Chemical Name = 1,1-difluoroethylene  
Chemical Formula = CF<sub>2</sub>=CH<sub>2</sub>  
Molecular Mass = 64.0 g/mol  
Normal Boiling Point (°F) = -122.5  
Normal Boiling Point (°C) = -86.7

#### TABLE E-1 Toxicity Table for Standard 34—ATEL, ODL, FCL, and RCL Values for Single-Compound Refrigerants (ppm v/v)

Refrigerant R- = R-1132a  
Chemical Name = 1,1-difluoroethylene  
LC<sub>50</sub> = 100,000 ppm  
Cardiac Sensitization  
    LOEL = ND  
    NOEL = 50,000 ppm  
Anesthesia  
    EC<sub>50</sub> = ND  
    LOEL = ND  
    NOEL = 200,000 ppm  
Other = ND  
ATEL = 28,000 ppm  
ODL = ND  
FCL = 13,000 ppm  
RCL = 13,000  
LFL = 50,000 ppm  
ATEL Source = 28.3% LC<sub>50</sub>  
RCL Source = 25% LFL



## **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.

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