ADDENDA

ANSI/ASHRAE Addendum e to
ANSI/ASHRAE Standard 34-2016

Designation and Safety Classification of Refrigerants

Approved by the ASHRAE Standards Committee on June 23, 2017; by the ASHRAE Tech Council on June 28, 2017; and by the American National Standards Institute on June 29, 2017.

This addendum was approved 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 website (www.ashrae.org) or in paper form from the Senior Manager of Standards.

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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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FOREWORD

Addendum e makes several changes with the intent to harmonize verbiage in ASHRAE Standard 34 and ISO 817, "Refrigerants—Designation and Classification," specifically in the use of "molar mass" versus "molecular mass."

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

Addendum e to Standard 34-2016

Modify Section 3 as shown.

3. DEFINITIONS AND TERMS

relative ~~molecular~~ molar mass: the ratio of the mass of a molecule to 1/12 of that of carbon-12. The relative ~~molecular~~ molar mass is numerically equivalent to the molecular weight expressed in g/mol, but it is dimensionless.

Modify Section 4.6 as shown.

4.6.1 For compounds with relative ~~molecular~~ molar masses less than 100, the number shall be the sum of 700 and the relative ~~molecular~~ molar mass, rounded to the nearest integer.

4.6.2 For compounds with relative ~~molecular~~ molar masses equal to or greater than 100, the number shall be the sum of 7000 and the relative ~~molecular~~ molar mass, rounded to the nearest integer.

4.6.3 When two or more inorganic refrigerants have the same relative ~~molecular~~ molar masses, uppercase letters (i.e., "A," "B," "C," etc.) shall be added, in serial order of designation, to distinguish among them.

Modify Section 7.4.1 as shown.

7.4 Units Conversion

7.4.1 Mass per Unit Volume. [. . .]

M = the ~~molecular~~ relative molar mass of the refrigerant in lb/mol (g/mol)

9.5.2 Refrigerant Data

Modify Section 9.5.2 as shown.

9.5.2.1 Individual Compounds

[. . .]

d. ~~Molecular~~ Relative molar mass

[. . .]

9.5.2.2 Azeotropic Blends

[. . .]

c. ~~Molecular~~ Relative molar mass as formulated

d. ~~Molecular~~ Relative molar mass of the saturated vapor at 140°F (60°C)

[. . .]

9.5.2.3 Zeotropic Blends

[. . .]

b. ~~Molecular~~ Relative molar mass as formulated

c. ~~Molecular~~ Relative molar mass of the vapor at 140°F (60°C)

[. . .]

Modify Section B1.1 as shown.

B1.1 Test Conditions

[. . .]

c. For those refrigerants that show flame propagation in accordance with step (a) or (b), flammability testing shall also be conducted at 73.4°F (23.0°C) and 14.7 psia (101.3 kPa) to determine the LFL. The LFL normally is expressed as refrigerant percentage by volume percent; multiply this by 0.00041 × ~~molecular~~ relative molar mass (g·mol) to obtain kg/m^3, or by 0.000026 × ~~molecular~~ relative molar mass (g·mol) to obtain lb/ft^3. For refrigerant blends, these tests shall be conducted on the WCF and the WCFF.

Modify Informative Appendix D as shown.

INFORMATIVE APPENDIX D REFRIGERANT DATA

This appendix provides refrigerant data such as ~~molecular~~ relative molar mass and normal boiling point for the refrigerants listed. It also provides bubble points and dew points for zeotropic blends.

[. . .]

TABLE D-1 TABLE D-1 Refrigerant Data ~~Molecular~~ Relative Molar Mass

TABLE D-2 TABLE D-2 Data for Refrigerant Blends ~~Molecular~~ Relative Molar Mass

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.

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7/17