ADDENDA

ANSI/ASHRAE Addendum i to
ANSI/ASHRAE Standard 34-2024

Designation and Safety Classification of Refrigerants

Approved by ASHRAE and the American National Standards Institute on April 30, 2025.

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. Instructions for how to submit a change can be found on the ASHRAE® website (www.ashrae.org/continuous-maintenance).

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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
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FOREWORD

Addendum i removes existing unclassified refrigerants from Table 4-1 and moves them to a new table, Table 4-3, for compounds assigned a number designation but not a safety classification. The addendum also clarifies application instructions for compounds to receive a number designation only (without a safety classification) and details the flammability and toxicity data requirements.

Informative 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 i to Standard 34-2024

Modify Section 4 as shown.

4. NUMBERING OF REFRIGERANTS

An identifying number shall be assigned to each refrigerant. Assigned numbers are shown in Tables 4-1, ~~and~~ 4-2, and 4-3.

[. . .]

Modify Table 4-1 as shown.

Table 4-1 Refrigerant Data and Safety Classifications

Refrigerant Number	Chemical Name[a,b]	Chemical Formula[a]	OEL[f], ppm v/v	Safety Group	RCL[c] (ppm v/v)	RCL[c] (lb/Mcf)	RCL[c] (g/m^3)	Highly Toxic or Toxic[d] Under Code Classification
~~12B1~~	~~bromochlorodifluoromethane~~	~~$CBrClF_2$~~						~~Neither~~
~~31~~	~~chlorofluoromethane~~	~~CH_2ClF~~						~~Neither~~
~~41~~	~~fluoromethane (methyl fluoride)~~	~~CH_3F~~						~~Neither~~
~~141b~~	~~1,1-dichloro-1-fluoroethane~~	~~CH_3CCl_2F~~	~~500~~		~~2600~~	~~0.78~~	~~12~~	~~Neither~~
~~610~~	~~ethoxyethane (ethyl ether)~~	~~$CH_3CH_2OCH_2CH_3$~~	~~400~~					~~Neither~~
~~630~~	~~methanamine (methyl amine)~~	~~CH_3NH_2~~						~~Toxic~~
~~631~~	~~ethanamine (ethyl amine)~~	~~$CH_3CH_2(NH_2)$~~						~~Neither~~
~~732~~	~~oxygen~~	~~O_2~~						~~Neither~~
~~744A~~	~~nitrous oxide~~	~~N_2O~~						~~Neither~~

Add new Table 4-3.

Table 4-3 Compounds Assigned a Number Designation but Not a Safety Classification *

Number Designation	Chemical Name	Chemical Formula	Notes	References
12B1	bromochlorodifluoromethane	$CBrClF_2$	a	
31	chlorofluoromethane	CH_2ClF	a	
41	fluoromethane (methyl fluoride)	CH_3F	a	
141b	1,1-dichloro-1-fluoroethane	CH_3CCl_2F	a	
610	ethoxyethane (ethyl ether)	$CH_3CH_2OCH_2CH_3$	a	
630	methanamine (methyl amine)	CH_3NH_2	a	
631	ethanamine (ethyl amine)	$CH_3CH_2(NH_2)$	a	
732	oxygen	O_2	a	
744A	nitrous oxide	N_2O	a	

*See also the informative note in Section 6.3.
a. Historical fluid that has not been assigned a safety classification per Standard 34.

Add new Section 6.3.

6.3 Molecules Not Assigned a Safety Classification. All molecules must be assigned a number designation but not necessarily a safety classification.

Informative Note: Providing a number designation for unclassified molecules simplifies and standardizes the designation of blend constituents. However, not all molecules are suitable nor intended for use as single-component refrigerants, yet they can be useful in blends. Such molecules might have properties or characteristics that make them unsuitable for use alone. Applicants should be aware of these properties or characteristics. Furthermore, by not assigning a safety classification, such molecules can be left out of other standards and codes by referring only to or extracting Tables 4-1 and 4-2. Additional molecules were included in previous versions of this standard but never assigned a classification; these molecules are included in Table 4-3 with the following note: "Historical fluid that has not been assigned a safety classification per Standard 34."

Modify Section 8 as shown.

8. REFRIGERANT CLASSIFICATIONS

Refrigerants are assigned the classifications indicated in Tables 4-1 and 4-2. Table 4-3 lists molecules that have received a number designation but not a safety classification.

Informative Note: Toxicity and flammability data used to determine RCL values are summarized in Informative Appendix E. Toxicity data described in Sections 9.6, 9.6.1, and 9.6.2 and the occupational exposure limit as defined in Section 3.1 are required regardless of classification.

Modify Section 9 as shown.

9. APPLICATION INSTRUCTIONS

This section identifies requirements to apply for designations and safety group classifications for refrigerants, including blends, in addenda or revisions to the standard.

[. . .]

9.1.6.1 Components. The components of a refrigerant blend~~s~~ must be individually ~~classified~~ assigned a number designation before a number designation and safety classification~~s will be~~ can be assigned to ~~blends containing them~~ said blend. Applications for designation and classification of blends, therefore, shall be accompanied or preceded by applications for all components not yet designated ~~classified~~ in this standard.

[. . .]

9.1.8 Compounds Not Assigned a Safety Classification. The applicant may request the assignment of only a number designation and not a safety classification. Such compounds will be listed in Table 4-3. The reason(s) for this request must be provided for inclusion in Table 4-3 as a footnote. Compounds in this cate-

gory require flammability data requested in Section 9.7, an occupational exposure limit (OEL) as defined in Section 3.1, and the toxicity data identified in Informative Appendix E and Sections 9.6, 9.6.1, and 9.6.2.

9.7 Flammability Information. Applications for single-compounds ~~refrigerants~~ and refrigerant blends shall include flammability test data and information identified in Normative Appendix B, Section B1.9. Applications for refrigerant blends shall also include tabulated fractionation data and information identified in Normative Appendix B, Section B2.6. See Section 9.1.6 regarding blend components.

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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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