

ANSI/ASHRAE Addendum *m* to
ANSI/ASHRAE Standard 34-2001



ASHRAE[®] STANDARD

Designation and Safety Classification of Refrigerants

Approved by the ASHRAE Standards Committee on June 26, 2004;
by the ASHRAE Board of Directors on July 1, 2004; and by the
American National Standards Institute on July 1, 2004.

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ISSN 1041-2336



**AMERICAN SOCIETY OF HEATING,
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1791 Tullie Circle, NE • Atlanta, GA 30329

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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.

The Manager of Standards of ASHRAE should be contacted for:

- 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,
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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.)

FOREWORD

This addendum deletes Table B1 from Appendix B. The deleted material is informative in nature and compares the current safety classifications of refrigerants to those used in the 1989 version of the standard. Although this information had value when the current safety classification system was first introduced in the 1992 edition of the standard, it has little relevance today.

Additions are shown in this addendum by underlining; deletions are shown by strikethrough.

ADDENDUM *m* TO ANSI/ASHRAE STANDARD 34-2001

Make the following revisions to the Table of Contents:

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Delete without substitution the struck through text in Section 6.1.4:

6.1.4 Matrix Diagram of Safety Group Classification System The toxicity and flammability classifications described in 6.1.1, 6.1.2, and 6.1.3 yield six separate safety group classifications (A1, A2, A3, B1, B2, and B3) for refrigerants. These classifications are represented by the matrix shown in Figure 1. ~~Appendix B is included to provide conversions from the previous safety group classifications (ANSI/ASHRAE 34-1989) to the current ones.~~

Delete, without substitution, Table B1 of Appendix B (and associated text), and add the underlined text under the appendix heading:

(This appendix is not part of this standard but is included for information purposes only.)

APPENDIX B
(Intentionally blank)

Comparison of Previous and Current Safety Classifications

A comparison of the current refrigerant classification system with its predecessor is summarized in Table B1:

TABLE B1
Comparison of Safety Group Classifications to
Those under ASHRAE Standard 34-1989

Refrigerant Number	Chemical Formula	Safety Group	
		1989	2001
10	CCl ₄	2	-
11	CCl ₃ F	+	A1
12	CCl ₂ F ₂	+	A1
13	CClF ₃	+	A1
13B1	CBrF ₃	+	A1
14	CF ₄	+	A1
21	CHCl ₂ F	2	B1
22	CHClF ₂	+	A1
23	CHF ₃	-	A1
30	CH ₂ Cl ₂	2	B2
32	CH ₂ F ₂	-	A2
40	CH ₃ Cl	2	B2
50	CH ₄	3a	A3
113	CCl ₂ FCClF ₂	+	A1
114	CClF ₂ CClF ₂	+	A1
115	CClF ₂ CF ₃	+	A1
116	CF ₃ CF ₃	-	A1
123	CHCl ₂ CF ₃	-	B1
124	CHClFCF ₃	-	A1
125	CHF ₂ CF ₃	-	A1
134a	CH ₂ FCECF ₃	-	A1
142b	CH ₃ CClF ₂	3b	A2
143a	CH ₃ CF ₃	-	A2
152a	CH ₃ CHF ₂	3b	A2
170	CH ₃ CH ₃	3a	A3
218	CF ₃ CF ₂ CF ₃	-	A1
245fa	CHF ₂ CH ₂ CF ₃	-	B1
290	CH ₃ CH ₂ CH ₃	3a	A3
C318	-(CF ₂) ₄ -	+	A1
400	R-12/114	+	A1
401A	R-22/152a/124	-	A1
401B	R-22/152a/124	-	A1
401C	R-22/152a/124	-	A1
402A	R-125/290/22	-	A1
402B	R-125/290/22	-	A1
403A	R-290/22/218	-	A1

TABLE B1
Comparison of Safety Group Classifications to
Those under ASHRAE Standard 34-1989

403B	R-290/22/218	-	A1
404A	R-125/143a/134a	-	A1
405A	R-22/152a/142b/C318	-	NC
406A	R-22/600a/142b	-	A2
407A	R-32/125/134a	-	A1
407B	R-32/125/134a	-	A1
407C	R-32/125/134a	-	A1
407D	R-32/125/134a	-	A1
407E	R-32/125/134a	-	A1
408A	R125/143a/22	-	A1
409A	R-22/124/142b	-	A1
410A	R-32/125	-	A1
410B	R-32/125	-	A1
411A	R-1270/22/152a	-	A2
411B	R-1270/22/152a	-	A2
412A	R-22/218/142b	-	A2
413A	R-218/134a/600a	-	A2
414A	R-22/124/600a/142b	-	A1
414B	R-22/124/600a/142b	-	A1
415A	R-22/152a (82.0/18.0)	-	A2
416A	R-134a/124/600	-	A1
417A	R-125/134a/600	-	A1
500	R-12/152a	+	A1
501	R-22/12	+	A1
502	R-22/115	+	A1
507A	R-125/143a	-	A1
508A	R-23/116	-	A1
508B	R-23/116	-	A1
509A	R-22/218	-	A1
600	CH ₃ CH ₂ CH ₂ CH ₃	3a	A3
600a	CH(CH ₃) ₂ CH ₃	3a	A3
611	CHOOCH ₃	2	B2
702	H ₂	-	A3
704	He	-	A1
717	NH ₃	2	B2
718	H ₂ O	-	A1
720	Ne	-	A1
728	N ₂	-	A1
740	Ar	-	A1
744	CO ₂	+	A1
764	SO ₂	2	B1
1140	CH ₂ =CHCl	-	NC
1150	CH ₂ =CH ₂	3a	A3
1270	CH ₃ CH=CH ₂	3a	A3

- Not listed in standard.
 NC Listed, but with no safety classification

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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.