Designation and Safety Classification of Refrigerants

Approved by the ASHRAE Standards Committee on January 12, 2019; by the ASHRAE Technology Council on January 16, 2019; and by the American National Standards Institute on January 17, 2019.

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 (https://www.ashrae.org/continuous-maintenance).

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b. participation in the next review of the Standard,
c. offering constructive criticism for improving the Standard, or
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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.
Addendum s to Standard 34-2016

Add the following to Table 4-1 as shown.

<table>
<thead>
<tr>
<th>Table 4-1 Refrigerant Data and Safety Classifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerant Number = R-1336mzz(E)</td>
</tr>
<tr>
<td>Chemical Name = trans-1,1,1,4,4,4-hexafluoro-2-butene</td>
</tr>
<tr>
<td>Chemical Formula = CF₃CH=CHCF₃</td>
</tr>
<tr>
<td>OEL = 400 ppm v/v</td>
</tr>
<tr>
<td>Safety Group = A1</td>
</tr>
<tr>
<td>RCL = 7200 ppm v/v; 3.0 lb/Mcf; 48 g/m³</td>
</tr>
<tr>
<td>Highly Toxic or Toxic Under Code Classification = Neither</td>
</tr>
</tbody>
</table>

Add the following to Table D-1 as shown.

<table>
<thead>
<tr>
<th>Table D-1 Refrigerant Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerant Number = R-1336mzz(E)</td>
</tr>
<tr>
<td>Chemical Name = trans-1,1,1,4,4,4-hexafluoro-2-butene</td>
</tr>
<tr>
<td>Molecular Mass = 164.1 g/mol</td>
</tr>
<tr>
<td>Normal Boiling Point (°F) = 45.3</td>
</tr>
<tr>
<td>Normal Boiling Point (°C) = 7.4</td>
</tr>
</tbody>
</table>

Add the following to Table E-1 as shown.

<table>
<thead>
<tr>
<th>Table E-1 Toxicity Table for Standard 34</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerant R- = 1336mzz(E)</td>
</tr>
<tr>
<td>Chemical Name = trans-1,1,1,4,4,4-hexafluoro-2-butene</td>
</tr>
<tr>
<td>LC₅₀ = 25,400</td>
</tr>
<tr>
<td>Cardiac Sensitization LOEL = ND</td>
</tr>
<tr>
<td>Cardiac Sensitization NOEL = 70,000</td>
</tr>
<tr>
<td>Anesthesia EC₅₀ = ND</td>
</tr>
<tr>
<td>Anesthesia LOEL = ND</td>
</tr>
<tr>
<td>Anesthesia NOEL = 14,600</td>
</tr>
<tr>
<td>Other = ND</td>
</tr>
<tr>
<td>ATEL = 7190</td>
</tr>
<tr>
<td>ODL = 140,000</td>
</tr>
<tr>
<td>FCL = ND</td>
</tr>
<tr>
<td>RCL = 7,200</td>
</tr>
<tr>
<td>LFL = ND</td>
</tr>
<tr>
<td>ATEL Source = Mortality</td>
</tr>
<tr>
<td>RCL Source = ATEL</td>
</tr>
</tbody>
</table>
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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