

## APPLICANT CHECKLIST FOR NEW REFRIGERANT APPLICATION SUBMISSION TO ASHRAE SSPC 34

### DESIGNATION AND NOMENCLATURE INFORMATION

June 3<sup>rd</sup>, 2021

#### DISCLAIMER AND GENERAL GUIDANCE:

This checklist has been prepared by ASHRAE SSPC 34 to assist applicant preparation of a new refrigerant application in accordance with the requirements of ANSI/ASHRAE Standard 34, *Designation and Safety Classification of Refrigerants*. While every effort has been made to ensure the accuracy of information, this checklist is provided as guidance to Applicants for informational purposes only. This checklist is intended to highlight the key technical input requirements of ANSI/ASHRAE Standard 34 and published addenda up to the date of this document. The applicant is responsible for accessing the ASHRAE Standards website for the latest published Addenda to Standard 34. ASHRAE and ASHRAE SSPC 34 are not responsible for errors made as a result of using this document. In cases of any discrepancy or omission, the requirements of the most recent edition of ANSI/ASHRAE Standard 34, *Designation and Safety Classification of Refrigerants*, and its published addenda and errata shall prevail.

This checklist is for reference purposes only and is not intended to replace a refrigerant application. Use of this checklist will not guarantee acceptance of a refrigerant application or designation and classification of the refrigerant.

For further assistance or clarification, please contact the SSPC 34 Chairman at [SSPC34Chair@ashrae.net](mailto:SSPC34Chair@ashrae.net).

See also: <http://www.ashrae.org/about>

ASHRAE Standard 34 Designation & Nomenclature Checklist				
ASHRAE Standard Section	Applicant: Refrigerant:	Yes / No	Data/Value	Informative Comments (See referenced Standard Section for Full Detail)
9.1.6.1	<b>Components</b> If a blend – are all components individually classified?			
9.1.6.1	<b>Components</b> If blend components are not classified – are applications for components also submitted?			
4.4.3	<b>Composition Uniqueness</b> – If blend with same components have been designated – Is at least one component range, including tolerances, separated by a minimum of 0.1% m/m?			2019 Addendum k
9.2	<b>Organization and Content</b>			Organization into parts as identified in Sections 9.3 to 9.8
9.3	<b>Cover</b>			Identify applicant, primary contact, refrigerant, and requested actions
9.4	<b>Administrative Information</b>			
9.4.1	<b>Applicant Identification</b>			Names, titles, addresses, phone numbers for primary contact and others. Applicant's interest shall also be stated.
9.4.2	<b>Data Certification</b>			Corporate officer & primary contact data certification signed statement.
9.4.3	<b>Designation &amp; Classification Certification</b>			Corporate officer & primary contact designation & classification certification signed statement.
9.5	<b>Designation Information</b>			
9.5.1	<b>Refrigerant Identification</b> (Section 4 for single component or Section 4.4 for blends)			Identify nature of refrigerant: single compound, zeotropic or azeotropic blend
9.5.2	<b>Refrigerant Data</b> (provide data in both SI and IP)			2013 Addenda o
9.5.2.1	<b>Individual Compounds</b>			For a single-compound refrigerant, include information in this section of 9.5.2 only. For a refrigerant blend, include this section for each component of the blend.
	(a) Chemical name			
	(b) Chemical formula			
	(c) Chemical Abstract Service (CAS) registry number			
	(d) Molecular Mass			

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	(e) Normal boiling point at 101kPa (14.7 psia)			
	(f) Saturation vapor pressure at 20°C & 60°C (68°F and 140°F)			
	(g) Temperature at the critical point			
	(h) Pressure at the critical point			
	(i) Specific volume at the critical point			
	(j) Uses and typical application temperatures			Give typical intended use evaporating and condensing ranges
<b>9.5.2.2</b>	<b>Azeotropic Blends</b>			
	(a) Azeotropic temperature			
	(b) Formulation at Azeotropic Temperature, mass %			
	(c) Molecular mass as formulated			
	(d) Molecular mass of vapor at 60°C (140°F)			
	(e) Normal boiling (bubble) point temp. at 101kPa (14.7 psia) as formulated			
	(f) Normal dew point temperature at 101kPa (14.7 psia) as formulated			
	(g) Maximum temperature glide at normal boiling point and at 20°C (68°F)			
	(h) Saturated vapor pressure at 20°C & 60°C (68°F and 140°F) as formulated			
	(i) Evidence of azeotropy			Include detailed description of testing & vapor-liquid equilibrium diagram plus other supporting information in an appendix
	(j) Latent heat of vaporization at 60°C (140°F)			
	(k) Specific heat ratio of the vapor at 60°C (140°F)			
	(l) Temperature at the critical point			
	(m) Pressure at the critical point			
	(n) Specific volume at the critical point			
	(o) Uses and typical application temperatures			Give typical intended use evaporating and condensing ranges
	(p) Proposed composition tolerances for classification, mass %			
	(q) Worst case of formulation for flammability (WCF) of the blend, mass %			
	(r) Worst case of fractionation for flammability (WCFF) of the blend, mass %			
<b>9.5.2.3</b>	<b>Zeotropic Blends</b>			
	(a) Formulation			

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	(b) Molecular mass as formulated			
	(c) Molecular mass of vapor at 60°C (140°F)			
	(d) Bubble point temperature at 101kPa (14.7 psia)			
	(e) Dew point temperature at 101kPa (14.7 psia)			
	(f) Maximum temperature glide at normal boiling point and at 20°C (68°F)			
	(g) Latent heat of vaporization at 60°C (140°F)			
	(h) Specific heat ratio of the vapor at 60°C (140°F)			
	(i) Temperature at the critical point			
	(j) Pressure at the critical point			
	(k) Specific volume at the critical point			
	(l) Uses and typical application temperatures			Give typical intended use evaporating and condensing ranges
	(m) Proposed composition tolerances for classification, mass %			
	(n) Worst case of formulation for flammability (WCF) of the blend, mass %			
	(o) Worst case of fractionation for flammability (WCFF) of the blend, mass %			
<b>9.5.2.4</b>	<b>Refrigerants with Low Critical Temperature</b>			If critical temp less than temp at which data required in 9.5.2.1, 9.5.2.2, & 9.5.2.3, substitute this data for those requirements.
	(a) For req. data at 20°C (68°F), instead provide data at normal B.P.T or 0°C (32°F), whichever is higher			
	For pressure data, also provide: - Superheated vapor pressure at 20°C (68°F) - Critical density			
	(b) For required data at 60°C (140°F), instead provide data at temp calculated as normal B.P.T + 80% difference between NBPT and critical temp.			
	For pressure data, also provide: - Superheated vapor pressure at 60°C (140°F) - Critical density			
	(c) Indicate applicable temp, or temp and critical density, at which substitute data is provided			

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9.5.2.5	<b>Critical Point for Blends</b>			In the absence of experimental data, the Critical temperature, pressure, and specific volume shall be calculated.
	Critical Temperature of the formulated blend			
	Critical Pressure of the formulated blend			
	Critical Volume of the formulated blend			Currently on in this section
9.8	<b>Contaminants and Impurities</b>			Review whether contaminants affect data supplied by applicant.
9.9.2	<b>Units</b>			Data in the Application shall be provided in both SI and IP.