



Agenda (Draft v1)

SSPC-34: Designation & Safety Classification of Refrigerants

6:30 – 10:00 PM, June 24, 2024
White River B, JW Marriot, Indianapolis, IN

1. CALL TO ORDER

1.1 ASHRAE Value Statement

In ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, inclusiveness and respect for others, which exemplify our core values of excellence, commitment, integrity, collaboration, volunteerism and diversity, and shall avoid all real or perceived conflicts of interest. Our culture is one of inclusiveness, acknowledging the inherent value and dignity of each individual. We celebrate diverse and inclusive communities, understanding that doing so fuels better, more creative and more thoughtful ideas, solutions and strategies for the Society and the communities our Society serves. We respect and welcome all.

Code of Ethics - <https://www.ashrae.org/about/governance/code-of-ethics>

Core Values - <https://www.ashrae.org/about/ashrae-s-core-values>

Diversity Statement - <https://www.ashrae.org/about/diversity-equity-and-inclusion-dei>

1.2 ASHRAE Commitment to Care

The health and safety of all ASHRAE conference attendees is a top priority. Out of respect for our fellow attendees, monitor our health, seek medical attention if symptoms develop and adhere to all ASHRAE Commitment to Care protocols. We are committed to the well-being of one another.

1.3 Introduction of Members and Guests

1.4 SSPC 34 Roster

SSPC 34 Roster for 2023 – 2024 (12)			
Producer/Refrigerant (2)	User / Systems (4)	User / Components (2)	General (4)
Sarah Kim (2024) Chair	Sivakumar Gopalnarayanan (2027)	Brian Fricke (2025)	Mark Olson (2026)
Ankit Sethi (2025)	Harshad Inamdar (2026) D&N Subcommittee Chair	Sara Kampfe (2027)	Andrew Kusmierz (2027)
	Stephen Kujak (2026)		John Senediak (2026)
	Julie Majurin (2024) Vice Chair / Flammability Subcommittee Chair		Kenji Takizawa (2027)
			Felix Flohr (2024) Consultant (NVM)

			John Scott (2024) Consultant (NVM)
			Asbjorn Vonsild (2024) Consultant (NVM)

1.5 Quorum determination

X out of X voting members present.

1.6 Chair/ASHRAE Announcements (Sarah and Kai)

- Winter meeting application deadline – December 20th, 2024

2. AGENDA REVIEW

Motion: Agenda approved as written / modified

1st : 2nd :

0 / 0 / 0 / 0 (*for / against / abstention / missing*)

3. MINUTES OF THE LAST MEETING / TELECONFERENCES

3.1 Approval / revision to the minutes of the interim meeting (3/1/2024)

Motion: Approve the minutes of the March 2024 interim meeting (as written / as modified)

1st : 2nd :

0 / 0 / 0 / 0 (*for / against / abstention / missing*)

4. ROSTER STATUS

4.1 Current SSPC 34 membership roster for the project committee and associated subcommittees can be found as [ATTACHMENT 2](#).

- Changes to the SSPC 34 roster since March 2024
 - Chris Seeton rolled off from D&N SC
- Recommended roster effective July 1st, 2024 is shown below

PCVMs (13)			
Producer / Refrigerant (3)	User / Systems (4)	User / Components (2)	General (4)
Sarah Kim (2028)	Sivakumar Gopalnarayanan (2027)	Brian Fricke (2025)	Mark Olson (2026)
Mary Koban (2025)	Harshad Inamdar (2026) <i>D&N Subcommittee Chair</i>	Sara Kampfe (2027)	Andrew Kusmierz (2027)
Ankit Sethi (2025)	Stephen Kujak (2026)		John Senediak (2026) <i>Vice Chair /</i>

			<i>Flammability Subcommittee Chair</i>
	Julie Majurin (2026) <i>Chair</i>		Kenji Takizawa (2027)
			John Scott (2026) <i>Consultant (NVM)</i>
			Asbjorn Vonsild (2026) <i>Consultant (NVM)</i>

Designation & Nomenclature Subcommittee (10) [5 PCVM, 5 PSVM]

Producer / Refrigerant (3)	User / Systems (4)	User / Components (1)	General (2)
Felix Flohr (S 2028)	Sivakumar Gopalnarayanan (C 2027)	Brian Fricke (C 2025)	Danny Halel (S 2025)
Joshua Hughes (S 2028)	Harshad Inamdar (C 2026) <i>D&N Subcommittee Chair</i>		Thomas Leck (S 2026)
Sarah Kim (C 2028)	Michael Petersen (S 2025)		
Ankit Sethi (C 2025)	William Walter (S 2028)		

Toxicity Subcommittee (6) [0 PCVM, 6 PSVM]

Producer / Refrigerant (3)	User / Systems (2)	User / Components (0)	General (1)
Paul Dugard (S 2027)	Morgan Leehey (S 2026)		George Rusch (S 2026)
Christine Glatt (S 2027)	Ivan Rydkin (S 2026) <i>Toxicity Subcommittee Chair</i>		
Bennett Varsho (S 2027)			

Flammability Subcommittee (12) [7 PCVM, 5 PSVM]

Producer / Refrigerant (4)	User / Systems (2)	User / Components (1)	General (5)
Mary Koban (C 2025)	Arif Rokoni (S 2027)	Sara Kampfe (C 2027)	Andrew Kusmierz (C 2027)
Evan Laganis (S 2027)	Casey Scruggs (S 2028)		Mark Olson (C 2026)
Bob Low (S 2028)			John Senediak (C 2026) <i>Flammability Subcommittee Chair</i>
Ankit Sethi (C 2025)			Kenji Takizawa (C 2027)
			Samuel Yana-Motta (S 2025)

- Interested guests of SSPC 34 can apply through the ASHRAE website

5. PUBLICATIONS

- 5.1 The following addenda were approved by the Standards Committee and the Board of Directors (BoD) and are posted on the ASHRAE website since the Chicago SSPC meeting.

Addendum	Date	Section	Summary
i	3/29/2024	New Refrigerant	R-475B (A2L)
x	3/29/2024	New Refrigerant	R-490A (A3)
y	3/29/2024	New Refrigerant	R-491A (A2)
z	3/29/2024	4.1.9 & 10	Editorial
u	4/24/2024	4.1.1 Designation	Designation numbering of zeotropic blends following R-499A
ae	6/3/2024	4.1 & B2.1	Identifying number clarification and cleans up language leftover after addendum g

➤ *NO ACTION: Information only*

6. APPLICATIONS FOR REFRIGERANT DESIGNATION AND SAFETY CLASSIFICATION

SSPC 34 reviews new and amended refrigerant applications that are received by SSPC 34 members at least 30 days prior to the first scheduled SSPC 34 subcommittee meeting (Section 9.1.3, "Timing"). Applications are reviewed in the order in which they are received (Section 9.1.4, "Precedence"). The last distributed amendment or supplement to an application is used to determine review precedence.

- 6.1 Amendment to R0154-23-12 (received 2/20/2024) for Zeotropic Refrigerant Blend R-1270/290 (35.0/65.0) with composition tolerances of (± 0.5 , ± 0.5) by mass % from YMLEMY Corporation.

Discussion:

VOTE: 0 / 0 / 0 / 0 (*for / against / abstention / missing*)

Abstentions:

- 6.2 Amendment to R0145-23-05 (received 3/5/2024) for Zeotropic Refrigerant Blend R-290/600a/600 (9.4/30.9/59.7) with composition tolerances of (+ 0.8/ + 2.0/+ 2.0) by mass % from Cia Ultragaz S/A for your consideration.

Discussion:

VOTE: 0 / 0 / 0 / 0 (for / against / abstention / missing)

Abstentions:

- 6.3 Amendment to R0146-23-05 (received 3/5/2024) for Zeotropic Refrigerant Blend R-290/600a/600 (11.8/29.1/59.1) with composition tolerances of ($\pm 0.8 / \pm 2.0 / \pm 2.0$) by mass % from Cia Ultrazgaz S/A.

Discussion:

VOTE: 0 / 0 / 0 / 0 (for / against / abstention / missing)

Abstentions:

- 6.4 Amendment to R0147-23-05 (received 3/5/2024) for Zeotropic Refrigerant Blend R-290/600a/600 (15.1/28.3/56.6) with composition tolerances of ($\pm 0.8 / \pm 2.0 / \pm 2.0$) by mass % from Cia Ultrazgaz S/A.

Discussion:

VOTE: 0 / 0 / 0 / 0 (for / against / abstention / missing)

Abstentions:

- 6.5 R0157-24-05 for Zeotropic Refrigerant Blend R-744 / 152a / 131i (4.0 / 60.0 / 36.0) with composition tolerances of ($\pm 0.5 / \pm 1.0 / \pm 1.0$) by mass % from SK Enmove.

Discussion:

VOTE: 0 / 0 / 0 / 0 (for / against / abstention / missing)

Abstentions:

- 6.6 R0158-24-05 for Zeotropic Refrigerant Blend R-32 / 1234yf / 134a / 1234ze(E) (4.5 / 76.0 / 9.0 / 10.5) with composition tolerances of ($\pm 0.5 / \pm 2.0 / \pm 1.0 / \pm 0.5$) by mass % from Zhejiang Quhua Fluor-Chemistry Co.

Discussion:

VOTE: 0 / 0 / 0 / 0 (for / against / abstention / missing)

Abstentions:

- 6.7 Amendment to R0153-23-12 (received 2/1/2024 & 5/30/2024) for Zeotropic Refrigerant Blend R-170 / 1270 (17.0 / 83.0) with composition tolerances of (+1.0, -2.0 / +2.0, -1.0) by mass % from Huazhong University of Science and Technology.

Discussion:

VOTE: 0 / 0 / 0 / 0 (for / against / abstention / missing)

Abstentions:

7. RECIRCULATION

7.1 Addendum n – Adds LFL and BV values that are missing for flammable refrigerants in Table 4-2

- Final vote tally after letter ballot; 9 / 1 / 1 / 1 (for / against / abstention - CNV / missing). Reason for negative vote – RCL should be updated along with the LFL data.
- Note: R-467A's RCL needs correction as the LFL is based on WCFF and corresponding MW of WCFF formulation is needed for unit conversion.

Table 4-2 Data and Safety Classifications for Refrigerant Blends

Refrigerant Number	RCL ^a			LFL ^j			BV ^p (cm/s)	Highly Toxic or Toxic ^f Under Code Classification
	(ppm v/v)	(lb/1000 ft ³)	(g/m ³)	(ppm v/v)	(lb/1000 ft ³)	(g/m ³)		
				[...]				
457B	19,000	3.7	59	76,000	14.9	239	<u>4.9</u>	Neither
457C	13,800	3.4	54	55,000	13.6	215	<u>5.6</u>	
				[...]				
467A	31,000	6.7 <u>5.7</u>	110 <u>92</u>	<u>125,000^m</u>	<u>22.9^m</u>	<u>367^m</u>	<u><4</u>	Neither
468A	18,000	4.1 <u>4.2</u>	66 <u>68</u>	<u>73,000</u>	<u>16.9</u>	<u>270</u>	<u>2.1</u>	Neither
468B	18,000	4.4 <u>4.3</u>	70	<u>72,000</u>	<u>17.3</u>	<u>278</u>	<u>7.3^q</u>	Neither
468C	23,000	4.3	69	<u>92,000</u>	<u>17.2</u>	<u>276</u>	<u>7.6</u>	Neither
				[...]				
474A	13,000	3.3	53	53,000	13	209	<u>3.3</u>	Neither
				[...]				

- Due to publication timing, errors in 460 series refrigerants were not caught in addendum a. R-465A's LFL (ppm v/v) also needs correction.

Table 4-2 Data and Safety Classifications for Refrigerant Blends (Continued)

Refrigerant Number	Composition (Mass%) (Composition Tolerances)	OEL ^h , ppm v/v	Safety Group	RCL ^a			LFL ^j			Highly Toxic or Toxic ^f Under Code Classification
				ppm v/v	lb/1000 ft ³	g/m ³	ppm v/v	lb/1000 ft ³	g/m ³	
Zeotropes (continued)										
464A	R-32/125/1234ze(E)/227ea (27.0/27.0/40.0/6.0) (±1.0/±1.0/±1.0/±0.5)	930	A1	120,000	27	430				Neither
465A	R-32/290/1234yf (21.0/7.9/71.1) (+0.5, -1.5/+0.1, -0.9/±1.0)	660	A2	12,000	2.5	40	98,000	10.0	160.9	Neither

- Action: vote to accept revised addendum *n* as shown below for publication public review.

Refrigerant	RCL ^a			LFL ^j			BV ^p (cm/s)
	ppm v/v	lb/1000 ft ³	g/m ³	ppm v/v	lb/1000 ft ³	g/m ³	
				[...]			
457B							<u>4.9</u>
457C							<u>5.6</u>
[...]							
465A	12,000	2.5	40	<u>98,000</u>	10.0	160.9	
				<u>48,000</u>			
[...]							
467A	31,000	6.7 <u>5.7</u>	110 <u>92</u>	<u>125,000^m</u>	<u>22.9^m</u>	<u>367^m</u>	<u><4</u>

468A	18,000	4.1 <u>4.2</u>	66 <u>68</u>	<u>73,000</u>	<u>16.9</u>	<u>270</u>	<u>2.1</u>
468B	18,000	4.4 <u>4.3</u>	70	<u>72,000</u>	<u>17.3</u>	<u>278</u>	<u>7.3^a</u>
468C	23,000	4.3	69	<u>92,000</u>	<u>17.2</u>	<u>276</u>	<u>7.6</u>
[...]							
474A							<u>3.3</u>
[...]							

8. PUBLICATION PUBLIC REVIEW DRAFTS

8.1 Addendum *ab* – adds additional chemical families to designation prefixes

Note: Motion passed during the interim meeting on March 1st, 8 / 1 / 1 / 2 (for / against / abstention - CNV / missing). There were no comments received during PPR. In order to proceed to publication, the committee needs to approve “publication with knowledge of unresolved objectors”.

Addendum *ab* to Standard 34-2022

Modify Section 5 as follows. The remainder of Section 5 remains unchanged.

5. DESIGNATION

[...]

5.2.2 Composition Designation Prefixes. The identifying number, as determined by Section 4, shall be prefixed by the letter “C” for carbon and preceded by “B,” “C,” “F,” or “I”—or a combination thereof in this sequence—to signify the presence of bromine, chlorine, fluorine, or iodine, respectively. Compounds that also contain hydrogen shall be further preceded by the letter “H” to signify the increased deterioration potential before reaching the stratosphere. The compositional designating prefixes for ether shall substitute an “E” for “C,” such that “HFE,” “HCFE,” and “CFE” refer to hydrofluoroethers, hydrochlorofluoroethers, and chlorofluoroethers, respectively. The composition designating prefixes for halogenated olefins shall be either “CFC,” “HCFC,” “HCC,” or “HFC” to refer to chlorofluorocarbon, hydrochlorofluorocarbon, hydrochlorocarbon or hydrofluorocarbon, respectively, or with substitution of an “O” for the carbon “C” as “CFO,” “HCFO,” “HCO,” or “HFO” to refer to chlorofluoro-olefin, hydrochlorofluoro-olefin, hydrochloro-olefin or hydrofluoro-olefin, respectively.

[...]

➤ **ACTION:** Vote to approve publication as-is/as modified.

8.2 Addendum *ad* – revises Table E-1 to use lethality (acute toxicity) value (50% of lethality ATEL) as the basis for the R-1270 anesthetic value.

Note: Motion passed during the interim meeting on March 1st, 8 / 1 / 1 / 2 (for / against / abstention - CNV / missing). There were no comments received during PPR. In order to proceed to publication, the committee needs to approve “publication with knowledge of unresolved objectors”.

Background: ATEL is driven by cardiac and adds a conservative anesthesia LOEL of 69,000 ppm based on lethality instead of the current 10,000 ppm, which has no reference or source to be found.

Table E-1 Toxicity Table for Standard 34—ATEL, ODL, FCL, and RCL Values for Single-Compound Refrigerants^a (ppm v/v)

Refrigerant R ^b	Chemical Name	Cardiac Sensitization			Anesthesia			Other ^h	ATEL	ODL	FCL	RCL	LFL	ATEL Source	RCL Source
		LC ₅₀ ^{b,c}	LOEL ^d	NOEL ^d	EC ₅₀ ^e	LOEL ^f	NOEL ^g								
[...]	1270 propene (propylene)	>490,000 ^g	ND	ND	ND	ND-69,000	10,000-ND	ND	1000	140,000	6700	1000	27,000	Sect 7.1.1 (b)	ATEL

ND: None determined or not adequately defined according to criteria of this standard.
NA: Not applicable.

➤ **ACTION:** Vote to approve publication as-is/as modified.

8.3 Addendum aa – changes A/B safety class boundary to include both acute and chronic toxicity

Note: Motion passed during the Winter Chicago 2024 meeting & subsequent letter ballot, 8 / 2 / 2 / 0 (for / against / abstention - CNV / missing). 14 comments were received during PPR.



SSPC34_addendum-aa_OCD_Comments_PC

9. CONTINUOUS MAINTENANCE PROPOSALS

There are 7 open CMPs (+1 pre-online system CMP) that requires committee response. Proposals have been assigned to respective subcommittees or group of experts where appropriate. See attached.



JAN_2024_Open_CMPs.docx

9.1 Continuous Maintenance Proposal (CM 34-15-12-0002/001-003)



CM 34-15-12-0002.pdf



CMP%20-%20SC%20approved%20unclassified

➤ **Action:** Review and vote on PPR

10. SUBCOMMITTEE REPORTS

10.1 Designation and Nomenclature (D&N)

10.2 Flammability

10.3 Toxicity

11. OTHER BUSINESS

11.1 Equation (7-3) RCL Unit Conversion factor Inquiry

$$RCL_M = RCL \times a \times M \quad (7-3)$$

where

RCL_M = RCL expressed as lb/1000 ft³ (g/m³)

RCL = RCL expressed as ppm v/v

$a = 1.160 \times 10^{-3}$ for lb/1000 ft³ (4.096×10^{-5} for g/m³)

M = relative molar mass of the refrigerant, **lb/mol** (g/mol)

- Action: Review Michael, Mary and Clare's recommendation and vote on proposed changes.



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C34_Request_rev03%2

11.2 Review of SSPC 34 Calculator (Michael Petersen)

- Action: No actions, just a verbal report out in this area.

11.3 ISO817 / SSPC34 alignment (Bill Walter, Asbjorn Vonsild)

- Action: No actions, just a verbal report out in this area.

12. REFRIGERANTS AND RCL VALUES IN THE CODES (M. Koban)

12.1 Uniform Mechanical Code (UMC)

12.2 International Mechanical Code (IMC & IFC)

12.3 Any other information from the CIS (Code Interaction Subcommittee).

- Action: No actions, just a verbal report in this area.

13. NEXT MEETINGS – ASHRAE 2025 Winter Conference, Orlando, FL – Saturday, February 8th to Wednesday, February 12th, 2025, as noted below (subject to change). Refer to <https://ashrae.org/conferences/2025-winter-conference-orlando> for full meeting schedule and details.

Committee Name	Tentative Day/Date	Start Time (ET)	End Time (ET)
SSPC 34 D&N Subcommittee	Saturday, February 8 th , 2025	8:00 AM	11:00 AM
SSPC 34 Flammability Subcommittee	Saturday, February 8 th , 2025	12:00 PM	4:00 PM
SSPC 34 Toxicity Subcommittee/ISO 817 MA Toxicity Task Force (Joint Meeting)	Monday, February 10 th , 2025	8:00 AM	10:30 AM
SSPC 34 (Project Committee)	Monday, February 10 th , 2025	6:30 PM	10:00 PM

14. ADJOURNMENT

ATTACHMENT 1

PC Chairs' Meeting Deadlines through 2024

**Please note that some dates are tentatively scheduled a year in advance and are subject to change. If you intend to try to meet one of these deadlines, please confirm the meeting dates and deadlines with Staff well in advance, or agenda items may be moved to the next meeting.*

	2024 Winter Meeting Jan 20 – Jan 24, 2024	SPLS Spring Meeting 2024*	Annual Meeting June 22 – 26, 2024	Fall Meetings 2024*
SPLS Meeting/Conference Call dates	Jan 10, 2024* Feb 1, 2024	Mar 18, 2024*	June 22 & June 26 2024	Oct 2024*
StdC Meeting/Conference Call dates	Jan 15, 2024* Jan 25, 2024	N/A	June 25-June 29, 2024	Oct 2024*
Membership				
New PC member applications & existing member changes (Bio/Bias/Applications** due)	Oct 20, 2023	N/A	April 5, 2024	Aug 2, 2024
PC Chair's Membership Recommendation Form** due	Nov 17, 2023	N/A	May 3 2024	Sep 6, 2024
Publication Public Review Packages				
PC Chairs Publication Public Review Submittal Form** deadline for Normal Track PPR packages (see Note below for Fast Track Process)	Dec 11, 2023	March 1, 2024	May 18, 2024	July 31, 2024
SPLS approval of Normal Track PPRs	Jan 10, 2024	Mar 18, 2024*	June 24, 2024	Oct 13, 2024*
Public Review Starts for 30 and 45 day PRs	Jan 22, 2024	Mar 25, 2024	July 8, 2024	Oct 25, 2024
30-day Public Review ends	Feb 20, 2024	Apr 24, 2024	Aug 7, 2024	Nov 27, 2024
45-day Public Review ends	Mar 7, 2024	May 9, 2024	Aug 22, 2024	Dec 12, 2024
Publication Packages				
PC Chairs' Final Publication Submittal Form deadline (for policy level and documents with unresolved commenters)	Dec 13, 2023	N/A	May 5, 2024	Sep 8, 2024
PC Chairs' Galley Sign-off deadline	Jan 12, 2024	N/A	June 12, 2024	Oct 25, 2024
Other				
TPS Changes and other items**	Dec 20, 2023	Feb 19, 2024	Jun 3, 2024	Sep 15, 2024

* Dates are TBD.

** Membership, TPS Changes, Publication Submittal and other forms can be found on ASHRAE's PC Toolkit page.

Note: Public Review packages that meet the Fast Track criteria noted in PASA Clause 7.2.1.3, *Fast Track Public Review (FTPR)*, may be submitted for public review at any time.

ATTACHMENT 2

SSPC 34 Membership Roster 2023-2024

Interest Categories:

Producer / Refrigerant: an individual who represents a company that produces or sells refrigerants used in air conditioning and refrigeration systems

User / Systems: an individual who represents a company that manufactures, assembles or sells air conditioning and refrigeration systems that make use of refrigerants

User / Components: an individual who represents a company that manufactures or sells components that are used in air conditioning and refrigeration systems that use refrigerants

General: A member who cannot be categorized in any other approved interest category covered in the project scope.

PCVMs (12)			
Producer / Refrigerant (2)	User / Systems (4)	User / Components (2)	General (4)
Sarah Kim (2024) Chair	Sivakumar Gopalnarayanan (2027)	Brian Fricke (2025)	Mark Olson (2026)
Ankit Sethi (2025)	Harshad Inamdar (2026) D&N Subcommittee Chair	Sara Kampfe (2027)	Andrew Kusmierz (2027)
	Stephen Kujak (2026)		John Senediak (2026)
	Julie Majurin (2024) Vice Chair / Flammability Subcommittee Chair		Kenji Takizawa (2027)

PSVMs (17)			
Producer / Refrigerant (7)	User / Systems (5)	User / Components (0)	General (5)
Paul Dugard (2027)	Morgan Leehey (2026)		Danny Halel (2025)
Christine Glatt (2027)	Michael Petersen (2025)		Thomas Leck (2026)
Joshua Hughes (2024)	Arif Rokoni (S 2027)		Wenbin Ng (2024)
Mary Koban (2025)	Ivan Rydkin (2026)		George Rusch (2026)
Evan Laganis (2027)	William Walter (2024)		Samuel Yana-Motta (2025)
Bob Low (2024)			
Bennett Varsho (2027)			

Consultants (3)
Felix Flohr (2024)
John Scott (2024)
Asbjørn Vonsild (2024)

By Subcommittee

(C = PCVM, S = PSVM, year indicates end of term after the June Conference meeting)

Designation & Nomenclature Subcommittee (9) [4 PCVM, 5 PSVM]

<i>Producer / Refrigerant</i> (3)	<i>User / Systems</i> (4)	<i>User / Components</i> (1)	<i>General</i> (2)
Joshua Hughes (S 2024)	Sivakumar Gopalnarayanan (C 2027)	Brian Fricke (C 2025)	Danny Halel (S 2025)
Ankit Sethi (C 2025)	Harshad Inamdar (C 2026) <i>D&N Subcommittee Chair</i>		Thomas Leck (S 2026)
	Michael Petersen (S 2025)		
	William Walter (S 2024)		

Toxicity Subcommittee (6) [0 PCVM, 6 PSVM]

<i>Producer / Refrigerant</i> (3)	<i>User / Systems</i> (2)	<i>User / Components</i> (0)	<i>General</i> (1)
Paul Dugard (S 2027)	Morgan Leehey (S 2026)		George Rusch (S 2026)
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Bennett Varsho (S 2027)			

Flammability Subcommittee (13) [7 PCVM, 6 PSVM]

<i>Producer / Refrigerant</i> (4)	<i>User / Systems</i> (2)	<i>User / Components</i> (1)	<i>General</i> (6)
Mary Koban (S 2025)	Arif Rokoni (S 2027)	Sara Kampfe (C 2027)	Andrew Kusmierz (C 2027)
Evan Laganis (S 2027)	Julie Majurin (C 2024) <i>Flammability Subcommittee Chair</i>		Wenbin Ng (S 2024)
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