



# Liquid Chemicals North America TC Chapter

## Meeting Summary and Minutes

SEMI Standards NA Winter Meetings 2025

Tuesday, February 25–Wednesday, February 26, 13:00 – 16:00 Pacific

SEMI Global Headquarters, Milpitas, California, and via Official Virtual TC Chapter Meeting (OVTCCM)

### TC Chapter Announcements

SEMI Standards NA Spring Meeting 2025

Day 1: Tuesday, April 8, 2025, 13:00 – 15:00 Pacific

Official Virtual TC Chapter Meeting (OVTCCM)

### Table 1 Meeting Attendees

*Italics indicate virtual participants*

**Co-Chairs:** Don E. Hadder (Intel), David Kandiyeli (KESG), Laura Ledenbach (Evonik)

**SEMI Staff:** Laura Nguyen

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
<i>Air Liquide</i>	<i>Chen</i>	<i>Allen</i>	<i>Georg Fischer Piping Systems</i>	<i>McIntosh</i>	<i>Bob</i>
<i>Air Liquide</i>	<i>Malibekova</i>	<i>Alma</i>	<i>Intel</i>	<i>Sengupta</i>	<i>Archita</i>
<i>Air Liquide</i>	<i>Sparks</i>	<i>Chris</i>	<i>Kinetics Equipment Solutions Group</i>	<i>Kandiyeli</i>	<i>David</i>
<i>Camenzind Solutions</i>	<i>Camenzind</i>	<i>Mark</i>	<i>Mettler-Toledo Thornton, Inc</i>	<i>Cannon</i>	<i>James</i>
<i>Chemours</i>	<i>McCall</i>	<i>Jenell</i>	<i>Parker Hannifin</i>	<i>Hansen</i>	<i>Glade</i>
<i>CT Associates, Inc</i>	<i>Schooneveld</i>	<i>Gary van</i>	<i>Veolia Water</i>	<i>Dale</i>	<i>Chuck</i>
<i>Daikin America, Inc.</i>	<i>Nelson</i>	<i>Per</i>	<i>Watts Water Technologies</i>	<i>Woodworth</i>	<i>Ashley</i>
<i>Elemental Scientific, Inc.</i>	<i>Ketkar</i>	<i>Suhas</i>			
<i>FTD Solutions LLC</i>	<i>Sullivan</i>	<i>Lindsey</i>	SEMI	Nguyen	Laura

### Table 2 Leadership Changes

<i>WG/TF/SC/TC Name</i>	<i>Previous Leader(s)</i>	<i>New Leader(s)</i>
Liquid Chemicals North America Technical Committee	Steve Rogers (Fujifilm) <b>[stepped down]</b> Don Hadder (Intel) Laura Ledenbach (Evonik) David Kandiyeli (Kinetics)	<b>[Open]</b> Don Hadder (Intel) Laura Ledenbach (Evonik) David Kandiyeli (Kinetics)

### Table 3 Committee Structure Changes

None

### Table 4 Ballot Results

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
6601A	New Standard: Guide to Meet IRDS Yield Table Recommendations for High Purity Polymer Materials and Components Used in Ultrapure Water	<b>Failed</b>

**Table 4 Ballot Results**

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
7091C	Revision to SEMI C90-1015, Test Method and Specification for Testing Perfluoroalkoxy (PFA) Materials Used in Liquid Chemical Distribution Systems (with title change)	<b>Passed</b> , with editorial changes.
7303	Reapproval of SEMI C78-0113 (Reapproved 1218), Test Method for Determining Roughness of Polymer Surfaces Used in Ultrapure Water and Liquid Chemical Distribution Systems by Atomic Force Microscopy	<b>Failed</b>

NOTE 1: **Passed** ballots and line items will be submitted to the ISC Audit & Review Subcommittee for procedural review.

NOTE 2: **Failed** ballots and line items were returned to the originating task forces for re-work and re-balloting or abandoning.

**Table 5 Ratification Ballot Results**

None

**Table 6 Activities Approved by the GCS between meetings of the TC Chapter**

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
7286	Ballot Authorization	Water Management TF	Line-Item Revision to SEMI F98-0923, Guide for Treatment of Reuse Water in Semiconductor Processing – <i>Approved by GCS on 01/22/2025</i>
7292	Send to ISC A&R SC for Procedural Review	Chemical Mechanical Planarization Consumables (CMP-C) TF	New Auxiliary Documents: Report on closing metrologies gaps for CMP pads – <i>Approved by GCS on 12/05/2024</i>
7336	SNARF	Chemical Mechanical Planarization Consumables (CMP-C) TF	New Auxiliary Document: Report on closing metrologies gaps for CMP slurries – <i>Approved by GCS on 01/22/2025</i>

**Table 7 Authorized Activities**

Listing of all revised or new SNARF(s) approved by the Originating TC Chapter.

None

**Table 8 Authorized Ballots**

<i>#</i>	<i>When</i>	<i>TF</i>	<i>Details</i>
6601B	Cycle 3, or 4-2025	High Purity Polymer Materials and Components TF	New Standard: Guide to Meet IRDS Yield Table Recommendations for High Purity Polymer Materials and Components Used in Ultrapure Water

**Table 9 SNARF(s) Granted a One-Year Extension**

None

**Table 10 SNARF(s) Cancelled**

#	TF	Title
7141	Chemical Analytical Methods (CAM) TF	Revision to SEMI C21-0618, Specification and Guide for Ammonium Hydroxide
7142	CAM TF	Revision to SEMI C28-0618, Specification and Guide for Hydrofluoric Acid
7143	CAM TF	Revision to SEMI C29-0618, Specification and Guide for 4.9% Hydrofluoric Acid (10:1 v/v)
7144	CAM TF	Revision to SEMI C35-0118, Specification and Guide for Nitric Acid
7145	CAM TF	Revision to SEMI C40-1110 (Reapproved 0618), Specification for Potassium Hydroxide, 45% Solution
7147	CAM TF	Revision to SEMI C45-0518, Specification and Guide for Tetraethylorthosilicate (TEOS)
7303	High Purity Polymer Materials and Components TF	Reapproval of SEMI C78-0113 (Reapproved 1218), Test Method for Determining Roughness of Polymer Surfaces Used in Ultrapure Water and Liquid Chemical Distribution Systems by Atomic Force Microscopy

**Table 11 Standard(s) to receive Inactive Status**

Standard Designation	Title
SEMI C18-0714 (Reapproved 0620)	Specification for Acetic Acid
SEMI C19-0514 (Reapproved 1119)	Specification for Acetone
SEMI C20-0213 (Reapproved 1218)	Specification and Guide for Ammonium Fluoride 40%
SEMI C21-0618	Specification and Guide for Ammonium Hydroxide
SEMI C27-0918	Specification and Guide for Hydrochloric Acid
SEMI C28-0618	Specification and Guide for Hydrofluoric Acid
SEMI C29-0618	Specification and Guide for 4.9% Hydrofluoric Acid (10:1 v/v)
SEMI C34- 0113 (Reapproved 0219)	Specification and Guide for Mixed Acid Etchants
SEMI C35-0118	Specification and Guide for Nitric Acid
SEMI C40-1110 (Reapproved 0618)	Specification for Potassium Hydroxide, 45% Solution
SEMI C45-0518	Specification and Guide for Tetraethylorthosilicate (TEOS)
SEMI C48-0812	Specification and Guide for 1,1,1-Trichloroethane, Furnace Grade
SEMI C51-0114 (Reapproved 1119)	Specification for Xylenes
SEMI C84-0214 (Reapproved 1119)	Guide for Cyclopentanone
SEMI C85-0214 (Reapproved 1119)	Guide for Methyl Isobutyl Carbinol (MIBC)

NOTE 1: *Inactive, adj.* — Status of a Standard or Safety Guideline that is not currently supported by the GTC. [Regulations ¶ 4.2.19]

**Table 12 New Action Items**

None

**Table 13 Previous Meeting Action Items**

None

## 1 Welcome, Reminders, and Introductions

David Kandiyeli (Kinetics) called the meeting to order at 13:12. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

**Attachment:** SEMI Standards Required Meetings Elements



## 2 Review of Previous Meeting Minutes

The TC Chapter reviewed the minutes of the previous meeting.

**Motion:** To accept the previous meeting minutes as written.

**By / 2<sup>nd</sup>:** By: Per Nelson / Daikin America, Inc.  
Second: Bob McIntosh / GF Piping Systems

**Discussion:** None

**Vote:** 9-0 in favor. Motion passed.

**Attachment:** [2024Fall] Liquid Chemicals NA TC Chapter Meeting Minutes

## 3 Liaison Reports

### 3.1 Gases & Liquid Chemicals Europe TC Chapter

#### Last meeting

- November 13, 2024
- SEMICON Europa
- Munich, Germany

#### Next meeting

- SEMICON Europa, 2025
- Munich, Germany

#### Organization Chart {refer to attachment for details}

- Changes:
  - Liquid Chemicals TFs discharged: Precursor Specifications TF and Solvents in Advanced Processes TF

#### Task Force Highlights

- All TFs are not active at this time.
- Will discuss at the next meeting for revitalization plans

#### Five-Year Review of Standards

- TC Chapter agreed to let all the below standards move to Inactive Status:
  - SEMI C81-0113 (Reapproved 0618), Guide for Tris(Dimethylamino) Silane (3DMAS)
  - SEMI C80-0214, Guide for Tetrakis(Dimethylamino) Silane (TDMAS)
  - SEMI C66-0317, Guide for Trimethylaluminium (TMAI), 99.5% Quality
  - SEMI C65-0317, Guide for Trimethylsilane (3MS), 99.995% Quality
  - SEMI C52-0301 (Reapproved 0618), Specification for the Shelf Life of a Specialty Gas
  - SEMI C3.57-0312 (Reapproved 0618), Specification for Carbon Dioxide, CO<sub>2</sub>, Electronic Grade in Cylinders
  - SEMI C3.56-0312 (Reapproved 0618), Specification for Diborane Mixtures

**Staff Contact:** Kevin Nguyen ([knguyen@semi.org](mailto:knguyen@semi.org))

**Attachment:** EU Gases & Liquid Chemicals Liaison Report Nov2024 v1

### 3.2 Liquid Chemicals Japan TC Chapter

#### Last meeting

- Friday, December 6, 2024
- SEMI Japan Office / Official Virtual TC Chapter Meeting (Hybrid)



#### Next meeting

- Friday, May 16, 2025
- SEMI Japan Office / Official Virtual TC Chapter Meeting (Hybrid)

#### Organization Chart {refer to attachment for details}

#### Ballot Results

- 7255: Revision of SEMI C89, Test Method for Particle Removal Performance of Liquid Filter Rated Below 30 nm with Inductively Coupled Plasma – Mass Spectroscopy (ICP-MS)
- Type of Document: Major revision to an existing Standard or Safety Guideline
- Failed and returned to TF for rework and reballot

#### Activities Approved via GCS between Meetings

- Liquid-Borne Particle Counter Task Force
  - 7267: Revision to C77-0818, *Test Method for Determining the Counting Efficiency of Liquid-Borne Particle Counters for Which the Minimum Detectable Particle Size is Between 30 nm and 100 nm*, with title change to: *Test Method for Determining the Counting Efficiency of Liquid-Borne Particle Counters for Which the Minimum Detectable Particle Size is Between 20 nm and 100 nm*
  - Type of Document: SNARF approval and Ballot Authorization

#### Task Force Highlights

- Liquid Filter Task Force
  - Doc. 7255A: Revision of SEMI C89-0116, Test Method for Measuring Particle Removal Performance of Liquid Filters Rated Below 30 nm by Inductively Coupled Plasma – Mass
    - Regarding “SPECTROSCOPY (ICP-MS)”
    - TF for rework and reballot
  - Doc. 7254: Revision of SEMI F110-0712, Test Method for Monodispersed Polystyrene Latex (PSL) Challenge of Liquid Filters
    - 2024/12 1st Draft to be prepared: Postponed to align with #7255 negative comment.
    - 2025 Draft review to global followed by ballot
  - Doc. 6911, New Standard: Test Method for Metal Removal Performance of Liquid Filter
    - 2025/1H 1st Draft to be prepared followed by Draft review to global
    - 2025/2H Ballot
- Liquid-Borne Particle Counter Task Force
  - Doc. 7267 will be balloted in Cycle 2, 2025.
- Trace Metal Analysis for High Pure IPA Task Force
  - None
- Valve & Fitting Task Force *[New]*
  - Conduct all 5 year review Standards of Valve & Fitting for liquid chemical and liquid chemical distribution systems

#### Five-Year Review of Standards

- Status : on-going discussion
- SEMI C77-0818, Test Method for Determining the Counting Efficiency of Liquid-Borne Particle Counters for Which the Minimum Detectable Particle Size is Between 30 nm and 100 nm: to be submitted for cycle 7

Staff Contact: Hiroshi Sato | [hsato@semi.org](mailto:hsato@semi.org)

**Attachment:** LC\_JA\_Liaison Report\_Feb 2025\_R0.1



### 3.3 SEMI Staff Report

Laura Nguyen (SEMI) gave the SEMI Staff Report. Of note:

#### SEMI Global 2025 Calendar of Events

- SEMICON China (March 26-28; Shanghai)
- SEMICON SEA (May 20-22; Singapore)
- SEMICON India (Sept 1-3; New Delhi, India)
- SEMICON Taiwan (Sept 10-12; Taipei, Taiwan)
- SEMCON West (Oct 7-9; Phoenix, Arizona)
- SEMICON Europa (Nov 18-21; Munich, Germany)
- SEMICON Japan (December 17-19; Tokyo, Japan)

#### SEMICON West 2025-2030 ← **NEW!**

- **2025—October 7-9 | Phoenix Convention Center | Phoenix, AZ**
- 2026—October 13-15 | Moscone Center | San Francisco, CA
- **2027—October 12-14 | Phoenix Convention Center | Phoenix, AZ**
- 2028—October 10-12 | Moscone Center | San Francisco, CA
- **2029—October 9-11 | Phoenix Convention Center | Phoenix, AZ**
- 2030—October 29-31 | Moscone Center | San Francisco, CA

#### Upcoming NA Meetings 2025

- NA Standards Summer Meetings: June 2-5, 2025, at SEMI HQ, Milpitas, California/USA
- SEMICON West: Oct 6-9, 2025, at Phoenix Convention Center, Phoenix, Arizona/USA

#### Critical Dates for SEMI Standards Ballots

- Cycle 2-2025: Ballot Submission Due: Jan 23/Voting Period: Feb 11 – Mar 13
- Cycle 3-2025: Ballot Submission Due: Mar 5/Voting Period: Mar 19 – Apr 18
- Cycle 4-2025: Ballot Submission Due: Mar 20/Voting Period: Apr 9 – May 9
- Cycle 5-2025: Ballot Submission Due: May 8/Voting Period: May 28 – June 27
- Cycle 6-2025: Ballot Submission Due: June 19/Voting Period: July 9 – Aug 8
- Cycle 7-2025: Ballot Submission Due: July 24/Voting Period: Aug 13 – Sep 12
- Cycle 8-2025: Ballot Submission Due: Sept 3/Voting Period: Sept 24 – Oct 24
- Cycle 9-2025: Ballot Submission Due: Oct 1/Voting Period: Oct 21 – Nov 20

<https://www.semi.org/en/collaborate/standards/ballots>

#### Standards Publications Report

<i>Cycle</i>	<i>New</i>	<i>Revised</i>	<i>Reapproved</i>	<i>Withdrawn</i>
November 2024	2	0	0	0
December 2024	0	11	6	0
January 2025	3	2	4	0

Total in portfolio – 1,098 (includes 356 Inactive Standards)

#### New Standards

<i>Cycle</i>	<i>Designation</i>	<i>Title</i>	<i>Committee</i>	<i>Region</i>
November 2024	SEMI E190	Specification for Equipment Data Publication (EDP)	Information & Control	NA
November 2024	SEMI E190.1	Specification for Common Data for Etch Components	Information & Control	NA



January 2025	SEMI E192	Guide for Equipment Adoption Criteria for GEM and GEM-related Standards	Information & Control	NA
January 2025	SEMI D87	Test Method for Response Time Evaluation of Displays with Variable Refresh Rate	FPD – Metrology	KO
January 2025	SEMI PV102	Guide for Tube PECVD Graphite Boat Materials for Solar Cell Production	Photovoltaic	CH

Connect@SEMI Communities for all SEMI Standards Task Forces {update}

- By Feb 2025, all Standards Task Forces shall use Connect@SEMI to host documents that are currently in development.
  - **The ISC Regulations SC recommends to postpone enforcement of implementation until next Regs/PM revision (which is currently aimed to become effective by NA Summer meeting in June)**
  - **Regs SC is working with SEMI to Update both Connect@SEMI and rules so that they are aligned each other**
- Each Standards Task Force will have its own Community Page on Connect@SEMI.
- All program members may log in at: <https://connect.semi.org> (username and password is same as program membership log-in)

Staff Contact: Laura Nguyen, [Lnguyen@semi.org](mailto:Lnguyen@semi.org)

**Attachment:** Staff Report Feb 2025 v3

#### 4 Ballot Review

NOTE 3: TC Chapter adjudication on ballots reviewed is detailed in the Audits & Review (A&R) Subcommittee Forms for procedural review. The A&R forms are available as attachments to these minutes. The attachment file name for each balloted document is provided under each ballot review section below.

##### 4.1 Document # 6601A, New Standard: Guide to Meet IRDS Yield Table Recommendations for High Purity Polymer Materials and Components Used in Ultrapure Water

- The committee found the negative related and technically persuasive. The ballot failed and returned to the task force for re-work and re-ballot.

**Motion:** Negative SG14 is related and persuasive.

**By / 2<sup>nd</sup>:** By: Chuck Dale / Veolia Water  
Second: Per Nelson / Daikin America, Inc.

**Discussion:** None

**Vote:** 7-0 in favor. Motion passed.

**Motion:** This Document failed TC Chapter review and will be returned to the TF for rework.

**By / 2<sup>nd</sup>:** By: Per Nelson / Daikin America, Inc.  
Second: Bob McIntosh / GF Piping Systems

**Discussion:** None

**Vote:** 8-0 in favor. Motion passed.

**Attachment:** 08-24-Liquid Chemicals Ballot Results

##### 4.2 Document # 7091C, Revision to SEMI C90-1015, Test Method and Specification for Testing Perfluoroalkoxy (PFA) Materials Used in Liquid Chemical Distribution Systems (with title change)

- The Document passed TC Chapter review with Editorial Changes.
- Refer to attachment for ballot adjudication.

**Attachment:** 7091C\_ProceduralReview



#### 4.3 Document # 7303, Reapproval of SEMI C78-0113 (Reapproved 1218), Test Method for Determining Roughness of Polymer Surfaces Used in Ultrapure Water and Liquid Chemical Distribution Systems by Atomic Force Microscopy

- The committee found the negative related and technically persuasive. The ballot failed and returned to the task force for re-work and re-ballot.

**Motion:** Negative SG03 is related and persuasive.  
**By / 2<sup>nd</sup>:** By: Per Nelson / Daikin America, Inc.  
Second: Bob McIntosh / GF Piping Systems  
**Discussion:** None  
**Vote:** 10-0 in favor. Motion passed.

**Motion:** This Document failed TC Chapter review and will be returned to the TF for rework.  
**By / 2<sup>nd</sup>:** By: Bob McIntosh / GF Piping Systems  
Second: Per Nelson / Daikin America, Inc.  
**Discussion:** None  
**Vote:** 10-0 in favor. Motion passed.

**Attachment:** 09-24-Liquid Chemicals Ballot Results

## 5 Subcommittee and Task Force Reports

### 5.1 High Purity Polymer Materials & Components Task Force

Bob McIntosh (GF Piping Systems) reported on the High Purity Polymer Materials and Components Task Force. This report contained information on the below.

Task Force Roster {See attachment for full list}

TF Meeting Summary

- Date and Event
  - SEMI F57++ even WWs Weds at 0800 ballot Cycle 8 ← **Failed**
  - SEMI C90 (7091) rev weekly Tues 0700 re-balloted Cycle 9 or Cycle 1 ← **Passed**
  - SEMI C69 (7006) – plan to ballot 2024 status of ratification? ← **Passed (last year)**
- TF Leadership & changes (if any):
  - TF F57 Bob McIntosh GF and Archita Sengupta Intel, Per Nelson
  - TF C90 Bob McIntosh GF and Per Nelson
  - TF C69 Per Nelson

TFOF

- Resubmitted with expanded scope
- No changes past that

SNARFs

- 7303 C78 surface roughness testing us AFM “PFA”
- 7090 C87 surface roughness testing using surface profilometry “piping” (PVDF or PP) inactive valid but not supported
- F104 create a SNARF line item revision modify table X

Meeting Results (Technical Summary)

- SEMI F57++ (6601)
  - Will submit for ratification ballot in next cycle. **FAILED**
  - **Re balloted and failed again**
  - **We will re ballot for next cycle. All of the fails have been addressed and reviewed with Safety Guru and we think we are ready.**



- SEMI C90 (7091)
  - Passed with 10 comments the reviewer judged as editorial
  - In reviewing the revised document (with editorial comments addressed) the group today made the following comments
  - test event — a batch of testing that can include more than one sample, but only one batch of extractant and only one cleaning batch .
    - Leave as voted on. Do not strike thru
  - Table 3 do not change the heading in column 3 - Containment
  - Keep Note 2
  - Make no changes to Note 6
  - All other editorial changes allowed

#### Upcoming Activities

- Review SEMI F48 to confirm it is aligned with the just revised SEMI F40 prior to opening SNARF for either revision or reapproval. It was due in 2019. I will ask the same members for F40 to participate.
  - Not yet started
- C78 We will do an informal review (no SNARF) and if it does not require any changes then either reapprove (if allowed) or allow to go dormant.
- Create a SNARF for F104 line-item revision.

#### Next Task Force Meeting Schedule

- **6601**
  - Next meeting: 3/5/2025
  - Date bi weekly Weds even WW's
  - Time 0730 US west coast time
  - Location/teleconferencing information Team mtg
  - Contact Bob McIntosh [bob@enviro-e.com](mailto:bob@enviro-e.com)
- **7091 (C90)**
  - Meeting 'as needed' only
  - Location/teleconferencing information Teams mtg
  - Contact: Per Nelson [pnelson@daikin-america.com](mailto:pnelson@daikin-america.com) Bob McIntosh [bob@enviro-e.com](mailto:bob@enviro-e.com)

#### Next Task Force Meeting Schedule

- F48 generate a SNARF
- C87 informal review to determine state of applicability
- C78 change from line item to full revision
- Proposed SNARF from SEMI Korea on pipe surface finish needs to be modified in section 2

**Attachment:** High Purity Polymers Report 2 2025 r0

#### 5.2 *Chemical Analytical Methods (CAM) Task Force*

David Kandiyeli (KESG) reported for the CAM Task Force. This report contained information on the below.

Task Force Roster {refer to attachment for full list}

#### TF Meeting Summary

- 11/26/2024 CAM TF Meeting
  - 5 attendees (Suhas Ketkar, David Kandiyeli, Don Hadder Jr., Archita Sengupta, Chris Sparks)
  - Reviewed current standards up for 5 year review and those which had been added during 5 year review meeting.



- Selected standards to render inactive in next technical committee meeting.
- Selected C41, C62(review complete), C63, & C98 for review.
- 12/10/2024, CAM TF Meeting: Ballot 7146 (SEMI C41-IPA)
  - 2 attendees (Chris Sparks, David Kandiyeli)
  - Continued addressing Cycle 2-2024 ballot rejections common to Ballot 7146
- 12/20/2024 CAM TF Meeting: Meeting cancelled due to holiday
- 1/7/2025 CAM TF Meeting: Ballot 7146 (SEMI C41-IPA)
  - 3 attendees (Chris Sparks, Alma Malibekova, David Kandiyeli)
  - Reviewed SEMI C41 to address Cycle 2 2024 ballot rejections
- 1/21/2025 CAM TF Meeting: Ballot 7149 (SEMI C63-Organosilicate Precursors)
  - 3 attendees (Suhas Ketkar, David Kandiyeli, Chris Sparks)
  - Reviewed SEMI C63 to address Cycle 2 2024 ballot rejections
- 2/4/2024, CAM TF Meeting: Ballot 7146 (SEMI C41-IPA)
  - 3 attendees (Chris Sparks, David Kandiyeli, Alma Malibekova)
  - Continued addressing Cycle 2-2024 ballot rejections common to Ballot 7146
- 2/18/2025, CAM TF Meeting: Ballot 7149 (SEMI C63-Organosilicate Precursors)
  - 4 attendees (Chris Sparks, Suhas Ketkar, David Kandiyeli, Alma Malibekova)
  - Continued addressing Cycle 2-2024 ballot rejections common to Ballot 7149

#### New SNARF Proposals

- None needed (Title changes to Ballots 7148 & 7149 do not change scope, so new SNARFs not required)

#### Ballot Activity Summary & Upcoming Activities

- Ballot Adjudication: None
- New Ballots and ballot plans :
  - Complete changes to Ballot 7148 and submit in 2025
  - Complete list of changes to Ballot 7146, and prepare ballot for submittal in 2025
  - Complete list of changes to Ballot 7149, and prepare ballot for submittal in 2025
  - Vote to render Ballots 7141 (C21 –NH<sub>4</sub>OH), 7142 (C28 – HF), 7143 (C29 – 4.9% HF), 7144 (C35- Nitric Acid), 7145 (C40-45% KOH), and 7147 (C45 – TEOS)

#### Next TF Meeting Schedule

- Next Meeting by Teams Web Conference; 3/4/2025 (8:00AM to 9:00AM PST) and Biweekly Thereafter
- Currently scheduled meetings are established via Teams invitation. Notify David Kandiyeli at [D.Kandiyeli@kinetics.net](mailto:D.Kandiyeli@kinetics.net) if you would like to join the meetings.

**Attachment:** CAM Winter NALCC Meeting Report DDK 2-25-2025 REVP01

### 5.3 High Purity Liquid Assemblies & Systems Task Force

David Kandiyeli (Kinetics) reported for the High Purity Liquid Assemblies & Systems Task Force. This report contained information on the below.

Task Force Roster {refer to attachment for full list}

### TF Meeting Summary

- 12/27/24 Task Force Meeting Cancelled Due to Holiday
- 1/10/25 & 1/24/2025 Task Force Meetings
  - Continued work on the outline for the SEMI F41 rewrite
  - Attendees: Jim Pedersen, David Kandiyeli, also Ashley Woodworth for some
  - All subsection outlines complete
  - Subsections will be stitched together and merged with the existing document
- 2/27/25 & 2/21/25 Task Force Meetings Cancelled

### Ballot Activity Summary

- New Ballots and ballot plans
  - Rewrite of SEMI F41 (7214) Guide for Qualification of a Bulk Chemical Distribution System Used in Semiconductor Processing; time to completion TBD

### Next TF Meeting Schedule

- Next Meeting by Web Conference; 3/7/2025 (8:00AM to 9:00AM PST) and Biweekly Thereafter
- Teleconferencing information – Teams Mtg.
- Contact – D. Kandiyeli

**Attachment:** HPLAS Winter 2025 NALCC Meeting Report DDK 12-25-2025 REVP01

### 5.4 *Ultrapure Water Task Force*

Lindsey Sullivan (FTD solutions) reported for the UPW Task Force. Of note:

Task Force Roster *{refer to attachment for full list}*

Yield and Reliability Related SEMI Standards for UPW *{refer to attachment for diagram}*

SEMI UPW TF Roadmap *{refer to attachment for diagram}*

### SNARFs

- Revisions to:
  - SEMI F61-0521 (UPW System Design & Operation) → Targeting Cycle 3
  - SEMI F63-0521 (UPW Quality) → Balloted
  - SEMI F75-0521 (UPW Metrology)
  - Particle precursor retention in UPW
- Rationale:
  - Alignment with UPW IRDS
  - 3-year revision cycle

### UPW TF Ballot Activity Summary

- Ballot Plans:
  - Revisions to SEMI F61 – Goal – Cycle 3, 2025
  - Revisions to SEMI F75 – Target not set
  - New Standards Document: Guide to Evaluate the Efficacy of Particle Precursor Reduction Devices Used in Ultrapure Water (UPW) Systems – Goal – Cycle 9, 2025

## Upcoming Activities

- Main themes:
  - Focus on Proactive Yield management from UPW IRDS to SEMI UPW TF
  - Measurement and management of particle precursors
- Major Revisions of SEMI F61 (on-going), F75 (not started)
- New Particle Precursor Retention Document
  - Creation of a new test method to evaluate retention of a particle precursor challenge material by “PP reduction devices”
  - Ion exchange resin extract used for the development work
  - Experimental work is completed
  - Gary Van Schooneveld (CTA) leading document creation effort (On-hold)



- Development of Auxiliary Information Document to explain the differences and applications of SEMI Standards or Guides on filter performance evaluation
  - SEMI C79, C82 and C89
  - Planned for 2025

## Task Force Meeting Schedule

- Date: Weekly meetings on Thursdays, alternating between Regular TF meeting and a Subgroup dedicated to new particle precursor retention document (on-hold)
- Next UPW TF meeting = Feb 27, 2025
- Time: 8am-9am PDT
- Location/teleconferencing information – Microsoft Teams link to be provided
- Contact: Lindsey Sullivan, [lsullivan@ftdsolutions.net](mailto:lsullivan@ftdsolutions.net); Gary Van Schooneveld, [gary@ctassociatesinc.com](mailto:gary@ctassociatesinc.com)

**Attachment:** 2025-02-25\_SEMI Stds UPW TF Meeting

### 5.5 Water Management Task Force

Lindsey Sullivan (FTD solutions) reported for the Water Management Task Force verbally. Of note:

- No update since Document 7285, Line-Item Revision to SEMI F98-0923, *Guide for Treatment of Reuse Water in Semiconductor Processing*, is out for voting in Cycle 2-2025.

### 5.6 Chemical Mechanical Planarization Consumables (CMP-C) Task Force

Alex Tregub (Intel) was not at the meeting to present for the Chemical Mechanical Planarization Consumables (CMP-C) Task Force, but a presentation was provided after the meeting concluded. Of note:

Task Force Roster *{See attachment for full list}*

## Agenda

- Membership
  - Serena Stephenson\*, DuPont representative, stepped out of the TF due to the internal promotion.
  - Ravi Palaparthi, DuPont, took out Serena’s responsibilities in the TF.
  - Paul Kerr\*, Intel - left Intel and the TF.



- Reports on closing metrologies gaps for CMP consumables
  - New Auxiliary Document 7292 : Report on Closing Metrologies Gaps for CMP Pad is published, passed AnR review
  - <https://www.semi.org/sites/semi.org/files/2024-12/ISCA%26RSC%20Dec%2009%202024%20WebVotingSummaryv1.pdf>
  - New Auxiliary Document 7293, Report on Closing Metrologies Gaps for Wafer Measurements at Different Stages of CMP Process, SNARF approved
  - <https://downloads.semi.org/web/wstdsbal.nsf/b8865fa87d9e7b57882579fb005c3cd7/a1c2422239e6f0c288258b9e005dc1fa!OpenDocument>
  - New Auxiliary Document, Report on closing metrologies gaps for CMP slurries: SNARF prepared, work on the document is in progress
- \*THANK YOU, Serena and Paul, for your great contributions to this TF!
  - Reports on closing metrologies gaps for CMP slurries: 90% completed.
  - Reports on closing metrologies gaps for wafers: Rev 0 prepared
  - Reports on closing metrologies gaps for CMP brushes: started

#### Ongoing and Completed Activities

- New Auxiliary Document 7292 : Report on Closing Metrologies Gaps for CMP Pad is published, passed AnR review
- New Auxiliary Document 7293, Report on Closing Metrologies Gaps for Wafer Measurements at Different Stages of CMP Process, SNARF approved
- New Auxiliary Document, Report on closing metrologies gaps for CMP slurries: SNARF submitted, work on the document is in progress
- Submit SNARF and Prepare Report on New Auxiliary Document, Report on closing metrologies gaps for CMP brushes: started
- Submit SNARF and Prepare Report on New Auxiliary Document, Report on CMP cleans, started

#### Upcoming Activities

- New Auxiliary Document 7292 : Report on Closing Metrologies Gaps for CMP Pad is published, passed AnR review
- New Auxiliary Document 7293, Report on Closing Metrologies Gaps for Wafer Measurements at Different Stages of CMP Process, SNARF approved
- New Auxiliary Document, Report on closing metrologies gaps for CMP slurries: SNARF submitted, work on the document is in progress
- Submit SNARF and Prepare Report on New Auxiliary Document, Report on closing metrologies gaps for CMP brushes: started
- Submit SNARF and Prepare Report on New Auxiliary Document, Report on CMP cleans, started

#### Next TF Meeting Schedule

- **Date:** recurring biweekly meetings of the TF members
- **Time:** Every Thursday of the even week, 10 to 11 am PST
- **Contact:** [a.tregub@yahoo.com](mailto:a.tregub@yahoo.com)

**Attachment:** CMP-C TF Leaders TF Report February 2025

#### *5.7 Statistical Methods Task Force (did not meet)*

Tom Bzik is no longer with EMD Electronics and Meg Cromley is no longer with Intel, therefore both TF leaders have stepped back on SEMI Standards activities until further notice.

## 6 Old Business

### 6.1 Standards Due for Five-year Review

None

### 6.2 Previous Action Items

None

## 7 New Business

### 7.1 North America TC Chapter Chair Nomination

Steve Rogers (Fujifilm) stepped down as chair and Bob McIntosh nominated Per Nelson (Daikin) to take his place; to be voted on at the Summer NARSC Meeting in June 2025.

### 7.2 Authorized Activities/Ballots

Regarding C78

**Motion:** Cancel SNARF Document #7303, Reapproval of SEMI C78-0113 (Reapproved 1218), Test Method for Determining Roughness of Polymer Surfaces Used in Ultrapure Water and Liquid Chemical Distribution Systems by Atomic Force Microscopy

**By / 2<sup>nd</sup>:** By: Bob McIntosh / GF Piping Systems  
Second: Per Nelson / Daikin America, Inc.

**Discussion:** None

**Vote:** 6-0 in favor. Motion passed.

Ballot Authorization(s):

**Motion:** Authorize the Document for Letter Ballot 6601B, *New Standard: Guide to Meet IRDS Yield Table Recommendations for High Purity Polymer Materials and Components Used in Ultrapure Water*, In Cycle 3, or 4-2025

**By / 2<sup>nd</sup>:** By: Bob McIntosh / GF Piping Systems  
Second: Per Nelson / Daikin America, Inc.

**Discussion:** None.

**Vote:** 6-0 in favor. Motion passed.

Send to Inactive and Cancel SNARF(s):

**Motion:** To move standards below to Inactive Status and cancel SNARFs as indicated below:

- SEMI C21 (Also SNARF)
- SEMI C28 (Also SNARF)
- SEMI C29 (Also SNARF)
- SEMI C35 (Also SNARF)
- SEMI C40 (Also SNARF)
- SEMI C45 (Also SNARF)
- SEMI C27, C2, C84, C34, C19, C85, C51, C48, and SEMI C18

**By / 2<sup>nd</sup>:** By: Bob McIntosh / GF Piping Systems  
Second: Per Nelson / Daikin America, Inc.

**Discussion:** None.

**Vote:** 6-0 in favor. Motion passed.



## 8 Next Meeting and Adjournment

8.1 The next meeting OVTCCM is tentatively scheduled for April 8, 2025, from 13:00-15:00 Pacific Time to review the ballot out of the Water Management TF and the Auxiliary Document from the CMP-C TF, to be sent out next month. Any summary updates to TFs may also be presented at this meeting.

8.2 The SEMI Standards NA Summer Meetings 2025 are tentatively scheduled for June 2-5, 2025, at SEMI HQ in Milpitas, California. Schedule details TBD. Please check [www.semi.org/standards](http://www.semi.org/standards) for updates.

### Tentative Schedule for NA Summer Meetings:

Task Forces will continue to meet on their weekly/bi-weekly cadence. Subject to change.

- Monday, June 2
  - (Open for meetings)
- Tuesday, June 3
  - 08:00-09:00, UPW TF
  - 09:00-10:30, High Purity Polymer Material & Components TF
  - 12:30-13:00, NA LChem Leadership Meeting
  - 13:00-16:00, Liquid Chemicals NA TC Chapter Meeting (Day 1 – traditional reports and voting)
- Wednesday, June 4
  - 13:00-16:00 Liquid Chemicals NA TC Chapter Meeting (Day 2 – voting and authorizations)
- Suggestion for NA LChem leadership to meet virtually prior to the meeting set
- Suggestion: PM webinar-type report out of TFs to the industry vs formal

Adjournment: 16:06.

Respectfully submitted by:

Laura Nguyen

Sr. Coordinator, International Standards

SEMI Global Headquarters

Phone: +1.408.943.7019

Email: [lnguyen@semi.org](mailto:lnguyen@semi.org)

Minutes tentatively approved by:

Don Hadder (Intel), Co-chair	<Date approved>
David Kandiyeli (KESG), Co-chair	<Date approved>
Laura Ledenbach (Evonik), Co-chair	<Date approved>

**Minutes approved by: LChem NA OVTCCM on April 8, 2025.**



**Table 14 Index of Available Attachments#1**

<i>Title</i>	<i>Title</i>
SEMI Standards Required Meetings Elements	09-24-Liquid Chemicals Ballot Results
[2024Fall] LChem NA TC Chapter Meeting Minutes	High Purity Polymers Report 2 2025 r0
EU Gases & Liquid Chemicals Liaison Report Nov2024 v1	CAM Winter NALCC Meeting Report DDK 2-25-2025 REVP01
LC_JA_Liaison Report_Feb 2025_R0.1	HPLAS Winter 2025 NALCC Meeting Report DDK 12-25-2025 REVP01
Staff Report Feb 2025 v3	2025-02-25_SEMI Stds UPW TF Meeting
08-24-Liquid Chemicals Ballot Results	CMP-C TF Leaders TF Report February 2025
7091C_ProceduralReview	

#1 Due to file size and delivery issues, attachments must be downloaded separately. A .zip file containing all attachments for these minutes is available at [www.semi.org](http://www.semi.org). For additional information or to obtain individual attachments, please contact Laura Nguyen at the contact information above.