



# Gases & Liquid Chemicals Europe Joint TC Chapter

## Meeting Summary and Minutes

SEMICON Europa 2024

Wednesday, November 13, 15:30 – 16:30 CET

International Congress Center Messe München (ICM), München, Germany

### TC Chapter Announcements

*Next TC Chapter Meeting*

SEMICON Europa 2025

ICM, München, Germany

### Table 1 Meeting Attendees

*Italics indicate virtual participants*

**Gases & Liquid Chemicals Co-Chair:** Jochen Ruth (Pall Corporation)

**SEMI Staff:** Laura Nguyen

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
Applied Materials	Neuber	Andreas	Pall Corporation	Ruth	Jochen
Derivados Del Fluor	Saenz	Jose Miguel	Swagelok	Zito	Daniel
Exergy Systems, Inc.	Yazdani	Azita	WIKA Instrument Corporation	Adair	Eric
III Safety LLC	Ko	Kennis	SEMI	Nguyen	Laura

### Table 2 Leadership Changes

None

### Table 3 Committee Structure Changes

<i>Previous WG/TF/SC Name</i>	<i>New WG/TF/SC Name or Status Change</i>
<i>Gases</i>	
None	
<i>Liquid Chemicals</i>	
Precursor Specifications TF <b>[Discharge]</b>	
Solvents in Advanced Processes TF <b>[Discharge]</b>	

### Table 4 Ballot Results

None

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

NOTE 1: **Passed** Ratification ballots will be submitted to SEMI publication for final processing.

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

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

None

**Table 7 Authorized Activities**

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

#	Type	SC/TF/WG	Details
<i>Gases</i>			
None			
<i>Liquid Chemicals</i>			
--	TFOF	Precursor Specifications TF	Discharged Task Force.
--	TFOF	Solvents in Advanced Processes TF	Discharged Task Force.

NOTE 1: SNARFs and TFOFs are available for review on the SEMI Web site at:

<http://downloads.semi.org/web/wstdsbal.nsf/TFOFSNARF>

**Table 8 Authorized Ballots**

None

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

None

**Table 10 SNARF(s) Canceled**

None

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

Standard Designation	Title
<i>Gases</i>	
SEMI C3.56-0312 (Reapproved 0618)	Specification for Diborane Mixtures
SEMI C3.57-0312 (Reapproved 0618)	Specification for Carbon Dioxide, CO <sub>2</sub> , Electronic Grade in Cylinders
SEMI C52-0301 (Reapproved 0618)	Specification for the Shelf Life of a Specialty Gas
SEMI C80-0214	Guide for Tetrakis(Dimethylamino) Silane (TDMAS)
<i>Liquid Chemicals</i>	
SEMI C65-0317	Guide for Trimethylsilane (3MS), 99.995% Quality
SEMI C66-0317	Guide for Trimethylaluminium (TMAI), 99.5% Quality
SEMI C81-0113 (Reapproved 0618)	Guide for Tris(Dimethylamino) Silane (3DMAS)

**Table 12 New Action Items**

None

**Table 13 Previous Meeting Action Items**

None

**1 Welcome, Reminders, and Introductions**

Jochen Ruth (Pall Corporation) called the meeting to order at 15:34. 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 (SEMICON Europa 2023) as written.

**By / 2<sup>nd</sup>:** By: Andreas Neuber / Applied Materials GmbH  
Second: Jose Miguel Saenz / Derivados Del Fluor, S.A.

**Discussion:** None

**Vote:** 4-0 in favor. Motion passed.

**Attachment:** EU Gases & LChem Minutes Europa 2023

**3 Liaison Reports**

3.1 *Gases North America TC Chapter*

Laura Nguyen (SEMI) reported for the Gases North America TC Chapter. Since the North America Fall meetings took place last week, no report was provided. Of note, a CER is available:

**Gases NA Ballot Results**

<i>Document #</i>	<i>Document Title</i>	<i>TC Chapter Action</i>
7202B	Line-Item Revision to SEMI F69-1213E, Test Method for Transport and Shock Testing of Gas Delivery Systems	
L1	Update throughout to comply with SEMI Regulations, Procedural Manual, and Style Manual.	<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.

**Gases NA Activities Approved by the GCS between meetings of the TC Chapter**

#	Type	SC/TF/WG	Details
7202B	Gases Ballot Authorization	Materials of Construction of Gas Delivery Systems TF	Line-Item Revision to SEMI F69-1213E, Test Method for Transport and Shock Testing of Gas Delivery Systems  – <i>Approved by GCS on 08/30/2024</i>

### Gases NA Authorized Activities

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

#	Type	SC/TF/WG	Details
<i>Gases</i>			
7308	SNARF	Heater Jacket TF	Revision to SEMI F109-0212, Guide for Heater Systems Requirements, with title change to: Guide for Material Selection for Heater Systems
7309	SNARF	Heater Jacket TF	New Standard: Test Method for Surface Heater Particle Generation

NOTE 1: SNARFs and TFOFs are available for review on the SEMI Web site at: <http://downloads.semi.org/web/wstdsbal.nsf/TFOFSNARF>

### Gases NA SNARF(s) Cancelled

#	TF	Title
<i>Gases</i>		
7197	Filters and Purifiers TF	Line-Item Revision to SEMI F28-1103 (Reapproved 0815), Test Method for Measuring Particle Generation from Process Panels
7198	Filters and Purifiers TF	Line-Item Revision to SEMI F43-0308 (Reapproved 0613), Test Method for Determination of Particle Contribution by Point-of-Use Gas Purifiers and Gas Filters
7202	Materials of Construction of Gas Delivery Systems TF	Line-Item Revision to SEMI F69-1213E, Test Method for Transport and Shock Testing of Gas Delivery Systems
7237	Gases Specifications TF	Line-Item Revision to SEMI C70-1116, Specification for Tungsten Hexafluoride
7238	Gases Specifications TF	Line-Item Revision to SEMI F113-1116 Test Method for Pressure Transducers Used in Gas Delivery Systems

### 3.2 Liquid Chemicals North America TC Chapter

Laura Nguyen (SEMI) reported for the Liquid Chemicals NA TC Chapter. Of note:

#### Meeting Information

- Last meeting
  - Tuesday, November 5, 13:00-16:00
  - NA Fall Meetings 2024 at SEMI HQ in Milpitas, CA
- Next meeting
  - Day 1: Tuesday, February 25, 13:00-16:00
  - Day 2: Wednesday, February 26, 13:00-16:00 (tentative)
    - NA Winter Meetings 2024 at SEMI HQ in Milpitas, CA

Organization Chart {refer to attachment for chart}

#### Ballot Results

- 7292, New Auxiliary Document: Report on Closing Metrologies Gaps for CMP Pads
  - Passed, submitted to ISC A&R for Procedural Review

#### Ratification Ballot Results

- R7087: Revision to SEMI F63-0521, Guide for Ultrapure Water Used in Semiconductor Processing
  - Passed, Submitted to ISC A&R for Procedural Review.
- R7006: Revision to SEMI F63-0521, Guide for Ultrapure Water Used in Semiconductor Processing
  - Passed, Submitted to ISC A&R for Procedural Review.

## SNARF(s) Approved by GCS

#	Type	SC/TF/WG	Details
6601A	Ballot Authorization Cycle 7-2024 (contingent on the Minority Report passing)	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 – <b>Approved by GCS on 08/23/2024</b>
7091C	Ballot Authorization Cycle 7-2024 (contingent on the Minority Report passing)	High Purity Polymer Materials and Components TF	Revision to SEMI C90-1015, Test Method and Specification for Testing Perfluoroalkoxy (PFA) Materials Used in Liquid Chemical Distribution Systems, with title change to: Test Method and Specification for Perfluoroalkoxy (PFA) and Other Fluorinated Materials Used in Liquid Chemical Distribution Systems – <b>Approved by GCS on 08/23/2024</b>
--	Minority Report	High Purity Polymer Materials and Components TF	SEMI 6601 and 7091 – <b>Approved by GCS on 09/05/2024</b>
6601A	Ballot Authorization Cycle 8, or 9-2024	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 – <b>Approved by GCS on 09/15/2024</b>
7091C	Ballot Authorization Cycle 8, or 9-2024	High Purity Polymer Materials and Components TF	Revision to SEMI C90-1015, Test Method and Specification for Testing Perfluoroalkoxy (PFA) Materials Used in Liquid Chemical Distribution Systems, with title change to: Test Method and Specification for Perfluoroalkoxy (PFA) and Other Fluorinated Materials Used in Liquid Chemical Distribution Systems – <b>Approved by GCS on 09/15/2024</b>
7292	SNARF/ AUX	CMP-C TF	New Auxiliary Document: Report on closing metrologies gaps for CMP pads – <b>Approved by GCS on 09/15/2024</b>
7293	SNARF/ AUX	CMC-C TF	New Auxiliary Document: Report on closing metrologies gaps for wafer measurements at different stages of CMP process – <b>Approved by GCS on 09/15/2024</b>

## Authorized Activities

- SNARF / High Purity Polymer Materials and Components TF
  - 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

## Authorized Ballots

Doc #	When	TF	Document Title/Details
7086	Cycle 1, 2, 3-2025	UPW TF	Revision to SEMI F61-0521, Guide for Design and Operation of a Semiconductor Ultrapure Water System
7091C	Cycle 1-2025	High Purity Polymer Materials and Components TF	Revision to SEMI C90-1015, Test Method and Specification for Testing Perfluoroalkoxy (PFA) Materials Used in Liquid Chemical Distribution Systems, with title change to: Test Method and Specification for Perfluoroalkoxy (PFA) and Other Fluorinated Materials Used in Liquid Chemical Distribution Systems
7146	Cycle 1, or 2-2025	CAM TF	Revision to SEMI C41-0618, Specification and Guide for 2-Propanol
7148	Cycle 1, or 2-2025	CAM TF	Revision to SEMI C62-0309 (Reapproved 0618), Specification for Porogen Precursors Used in Low K CVD Processes
7303	Cycle 9-2024, 1-2025	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

## SNARF(s) Granted One-Year Extension

- 6904: Guide for Reporting Performance Parameters of the Retaining Rings for Chemical Mechanical Planarization (CMP) used in Semiconductor Manufacturing
  - Until Fall 2025

## Task Force Highlights

- UPW TF
  - Ratification Ballot Result(s)
    - R7087: Revision to SEMI F63-0521, Guide for Ultrapure Water Used in Semiconductor Processing [Passed]
  - Authorized Ballot(s)
    - 7086: Revision to SEMI F61-0521, Guide for Design and Operation of a Semiconductor Ultrapure Water System

- Upcoming Activities
  - Focus on Proactive Yield management from UPW IRDS to SEMI UPW TF
  - Measurement and management of particle precursors
  - New Particle Precursor Retention Document
  - 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
- Water Management TF
  - Drafting 7285: Line-Item to SEMI F980923, Guide for Treatment of Reuse Water in Semiconductor Processing (*ongoing*)
- CAM TF
  - Authorized Ballots
    - 7146: Revision to SEMI C41-0618, Specification and Guide for 2-Propanol
    - 7148: Revision to SEMI C62-0309 (Reapproved 0618), Specification for Porogen Precursors Used in Low K CVD Processes
  - Open SNARFs: SEMI C21, C28, C29, C35, C40, C45, C63
- Statistical Methods TF – *Did not meet*
- HPLAS TF
  - Drafting 7214: Revision of SEMI F41-1116, Guide for Qualification of a Bulk Chemical Distribution System Used in Semiconductor Processing
    - Completed outlines for Rinse in UPW, Rinse in Chemical for Special Contaminant Removal, Pre-Rinse in UPW, Particle Analysis, and Local Rinse in Final Chemical sections
    - Began generation of the Metallic Cations outline sections
    - Time to completion TBD
- CMP-C TF
  - 7292: New AUX Doc, Report on Closing Metrologies Gaps for CMP Pads
    - TC Chapter approved at NA Fall meetings; forward to GCS then ISA A&R for final procedural review
  - Open SNARFs
    - 6904, New Standard: Guide for Reporting Performance Parameters of the Retaining Rings for Chemical Mechanical Planarization (CMP) used in Semiconductor Manufacturing
      - Granted One-Year Extension till Fall 2025
    - 6970, Guide for Reporting Performance Parameters of Pressure Sensitive Adhesives (PSA) for Chemical Mechanical Planarization (CMP) pads used in Semiconductor Manufacturing
  - Currently working on CMP consumables metrology roadmap for slurries, and metrology roadmap for CMP brushes
  - Upcoming Activities
    - 7293: New AUX Doc, Report on closing metrologies gaps for wafer measurements at different stages of CMP process
      - Submit for TC review prior to NA Spring Meetings in February 2025
    - Submit SNARF for the new guide related to reporting performance parameters for post CMP brushes
- HPPMC TF
  - Ratification Ballot Result(s)
    - 7006: Revision to SEMI C69-1015 (Reapproved 1220), Test Method for the Determination of Surface Areas of Polymer Pellets [**Passed**]
  - Minority Reports were submitted and voted ‘In Favor’ resulting in returning docs to TH for rework
    - 6601: New Standard: Guide to Meet IRDS Yield Table Recommendations for High Purity Polymer Materials and Components Used in Ultrapure Water
    - 7091B: Revision to SEMI C90-1015, Test Method and Specification for Testing Perfluoroalkoxy (PFA) Materials Used in Liquid Chemical Distribution Systems
  - Authorized Activities & Ballots
    - 7091C: Revision to SEMI C90-1015, Test Method and Specification for Testing Perfluoroalkoxy (PFA) Materials Used in Liquid Chemical Distribution Systems, with title



change to: Test Method and Specification for Perfluoroalkoxy (PFA) and Other Fluorinated Materials Used in Liquid Chemical Distribution Systems

- 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
- Open SNARFs: SEMI C87

5-Year Review {refer to attachment for full list}

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

**Attachment:** NA LChem Liaison Report Nov2024 v1

### 3.3 Gases Japan TC Chapter

Laura Nguyen (SEMI) reported for the Gases Japan TC Chapter. Of note:

Meeting Information (Gases & Facilities meet jointly)

- Last meeting
  - Thursday, October 24, 2024
  - SEMI Japan Office + OVTCCM (Hybrid)
- Next meeting
  - Friday, April 25, 2025
  - SEMI Japan Office + OVTCCM (Hybrid)

Gases & Facilities TC Leadership

- Hiromichi Enami/ iZOOM
  - GCS voting member
- Isao Suzuki/ Consultant
  - GCS voting member
- Masafumi Kitano/ Fujikin

Organization Chart {refer to attachment for chart}

Ballot Results: None

Authorized Activities: None

Five-Year Review: None

Task Force Highlights: None

Staff Contact: Akiko Yoshida, [ayoshida@semi.org](mailto:ayoshida@semi.org)

**Attachment:** G+F\_JA TC Chapter Liaison Report\_October 2024\_R0\_distr

{Attachment included Japan Facilities Chapter}

### 3.4 Liquid Chemicals Japan TC Chapter

Laura Nguyen (SEMI) reported for the Liquid Chemicals Japan TC Chapter. Of note:

Meeting Information

- Last meeting
  - Friday May 24, 2024
  - SEMI Japan Office / Official Virtual TC Chapter Meeting (Hybrid)

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

#### Committee Structure and Leadership Changes

- New TFOF
  - Valve & Fitting Task Force
    - L : Kimihito Sasao – Advance Electric Co.
    - L : Yoji Minato – PILLAR Corporation
    - L : Hiroto Yasue – CKD Corporation

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

#### Ballot Results: None

#### Authorized Activities & Ballots

- SNARF / Liquid Filter TF
  - 7254: Revision of F110-0712 (Reapproved 0618), Test Method for Mono-Dispersed Polystyrene Latex (PSL) Challenge of Liquid Filters
  - 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)
    - Authorized for Cycle 6-2025 and beyond

#### Task Force Highlights

- Liquid Filter Task Force
  - Doc. 7255, 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)", the Task Force have prepared the draft of the current revised background and methods based on comments and asked for comments, but there were no particular opinions so the Task Force will ballot in Cycle 6, beyond.
  - Doc. 7254, Revision of SEMI F110-0712: TEST METHOD FOR MONODISPERSED POLYSTYRENE LATEX (PSL) CHALLENGE OF LIQUID FILTERS, the Task Force added to the scope on comments that were in the SNARF review for the F110 revision last year.
- Liquid-Borne Particle Counter Task Force
  - With respect to the 5-year review of C77-0818 TEST METHOD FOR DETERMINING THE COUNTING EFFICIENCY OF LIQUIDBORNE PARTICLE COUNTERS FOR WHICH THE MINIMUM DETECTABLE PARTICLE SIZE IS BETWEEN 30 NM AND 100 NM., the Task Force are addressing and improving upon the negative comments that arose during the last ballot, and are aiming to introduce a ballot for Cycle 7.
- 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

- 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\_June 2024\_R0

### 3.5 SEMI Staff Report

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

#### SEMI Global 2024 Calendar of Events

- SEMCON West (July 9-11; San Francisco, CA)
- SEMICON Taiwan (Sept 4-6; Taipei, Taiwan)
- SEMICON India (Sept 11-13; New Delhi, India)
- Energy Taiwan/X Net-Zero Taiwan (Oct 2-4; Taipei, Taiwan)
- SEMICON Europa (Nov 12-15; Munich, Germany)
- SEMICON Japan (December 11-13; Tokyo, Japan)

#### Global Standards Summit 2024: *Innovating Tomorrow: Standards for Future Factories*

- Inaugural SEMI Event @ SEMICON Japan 2024
  - Thursday, December 12 | 10:30 AM to 4:30 PM, Tokyo Big Sight, Conference Tower, Room 606
- Objective: Identify standards-critical areas and work towards an industry
- standardization strategy for the next 3- and 7-year time horizons.
- Session Topics:
  - Smart Manufacturing for Future Factories
  - Packaging Architectures & Materials
  - Environmental Sustainability
- Why Attend?
  - Learn – Hear issues critical to the future advancements of semiconductor manufacturing, what’s happening to address them, as well as the standards needed to help enable.
  - Influence – Contribute to the direction of standards development by providing inputs to help optimize future factories.
  - Network – Organized networking events with other stakeholders from suppliers to solution providers to end customers.
  - Discover – Explore what SEMICON Japan has to offer (e.g., Sessions on AI & Data, Sustainability, Manufacturing, Integration of Front & Back-end; Standards Meetings)

#### 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

#### Europe Standards Meetings @ SEMICON Europa 2024

- November 12-14, 2024
- ICM (Internationales Congress Center München)
  - Meeting Room: Staffelsee (Mezzanine Level)
- TCs: Silicon Wafer, Gases, Liquid Chemicals, Compound Semiconductor Materials, ERSC

#### Critical Dates for SEMI Standards Ballots

- Cycle 8-2024: Ballot Submission Due: Oct 1/Voting Period: Oct 15 – Nov 14
- Cycle 9-2024: Ballot Submission Due: Nov 8/Voting Period: Nov 22 – Dec 23
- Cycle 1-2025: Ballot Submission Due: Dec 17, 2024/Voting Period: Jan 8 – Feb 7



- 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

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

### Standards Publications Report

Cycle	New	Revised	Reapproved	Withdrawn
July 2024	2	5	0	0
August 2024	0	5	4	0
September 2024	0	9	5	0
October 2024	2	1	0	0

Total in portfolio – 1,092 (includes 349 Inactive Standards)

### New Standards

Cycle	Designation	Title	Committee	Region
July 2024	SEMI D85	Guide for the Tone Reproduction Curves for Transparent Displays	FPD - Metrology	TW
July 2024	SEMI FH4	Test Method and Guide for the Tactile Characteristics of Flexible Hybrid Electronics Materials and Products	Flexible Hybrid Electronics	JA
October 2024	SEMI E191	Specification for Computing Device Cybersecurity Status Reporting	Information & Control	NA
October 2024	SEMI E191.1	Specification for SECS-II Protocol for Computing Device Cybersecurity Status Reporting to Specification for Computing Device Cybersecurity Status Reporting	Information & Control	NA

### Regulations & Procedure Manual Updates

- *Regulations* (Feb 20, 2024)
  - New definition of “Standards Document”
  - Clarification of confidential presentation materials
    - <https://www.semi.org/sites/semi.org/files/2024-02/Standards%20Regulations%20February%202024.pdf>
- *Procedure Manual* (Feb 20, 2024)
  - The use of Connect@SEMI for TF management and document development depository (next slide)
- *Procedure Manual* (Sept 27, 2024) **New!**
  - Clarification of § 6.4.5.10 for discharging of a TF
  - New ¶ 6.4.5.11 Designation of a TF as Dormant.
    - <https://www.semi.org/sites/semi.org/files/2024-09/Procedure%20Manual%20September%2027%2C%202024.pdf>

### Connect@SEMI Communities for all SEMI Standards Task Forces

- By Feb 2025, all Standards Task Forces shall use Connect@SEMI to host documents that are currently in development.
- Each Standards Task Force will have its own Community Page on Connect@SEMI.
- All program members may log in at: <https://connect.semi.org>
  - Enter their username and password (same as program membership log-in)
  - Contact staff if questions.



- Training materials are available at: <https://www.semi.org/standards>
  - Under Standards Developer Resources → Collaboration Tools (scroll to the bottom)

#### SEMIViews 4.0 – Available Now! {refer to attachment graphics}

- New SEMIViews platform launched on August 19, 2024.
- SEMIViews 4.0 Features include:
  - Upgraded user interface, Improved company user administration functions
  - Dynamic landing page, including feeds for new and revised Standards, upcoming meetings & events, and a reference center
  - Enhanced search functionality and navigation panel, New SEMI Volumes Library, User defined shortcuts via Collections, Favorites, and now, Bookmarks
- Additional features planned in the pipeline.

#### Five-Year Review {refer to attachment for details}

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

**Attachment:** Staff Report November 2024 v4-EU

## 4 Ballot Review

None

## 5 Subcommittee and Task Force Reports

None

## 6 IRDS YE Overview

6.1 Andreas Neuber (Applied Materials) gave an overview of the IRDS YE updates. Of note:

### SEMI Gas / IRDS Gas Team Alignment

- IRDS Status – *refer to attachment for more details and images*
- Team Charter & Documents
  - General Approach
    - Cooperate with other technical working groups, e.g. More Moore, Beyond CMOS, Lithography, etc. to understand future requirements and translate this for bulk and specialty gases as well as CVD/ALD precursors and compare to current status quo
  - Objectives
    - Communicate these requirements to the public together with a status assessment as colored tables (white, yellow, orange, red) to the supply chain, universities, researchers
    - Identify potential solutions in special tables
    - Summarize the status and the changes needed in a text
    - Kick-off and help to introduce required SEMI standards
- Example of IRDS Table (WIP) – *refer to attachment for more details*
- CPC based nanoparticle qualification, approach for hardware cleanliness validation
  - Using CPC, hardware internal gas channels can successfully be qualified for particle cleanliness in single-digit nanometer range
  - Convenient if future particle counters could allow for measurement
    - at higher or lower than atmospheric pressure
    - at other than current fixed flow rate



- Particle generation during operation – *refer to attachment for more details and images*
- Contamination control CO<sub>2</sub> (WIP) – *refer to attachment for more details and images*
- Specialty gases: Contamination concerns
  - New architectures for logic and memory are 3-dimensional
  - This enhances the importance of contamination for deposition, implant and etch gases
  - Particles, metals, but more and more different organics are relevant
- *Refer to attachment for more details and images*

**Attachment:** Semi\_IRDS\_2024\_241113

## 7 Old Business

### 7.1 Standards Due for Five-Year Review

Kevin Nguyen (SEMI) addressed the committee on this topic at the last meeting (SEMICON Europa 2023). Jochen Ruth (Pall Corporation) gave a brief update:

- These documents have not been updated for some time, so the committee is recommending to put these Inactive.
- Discussion:
  - RE: SEMI C3.57, There is a need for CO<sub>2</sub> standards in the future, but not for cylinders. So Inactive Status is appropriate.

**Motion:** Send the following Standards 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

**By / 2<sup>nd</sup>:** By: Andreas Neuber / Applied Materials GmbH  
Second: Jose Miguel Saenz / Derivados Del Fluor, S.A.

**Discussion:** None.

**Vote:** 3-0 in favor. Motion passed.

## 8 New Business

### 8.1 Discharge of TFOFs

#### 8.1.1 Liquid Chemicals

Laura Nguyen (SEMI) addressed the committee on this topic. Of note, the committee made a motion to discharge Task Forces per new rules in the *Regulations* and *Procedural Manual*.

**Motion:** Discharge the below TFs:  
-- Precursor Specifications TF  
-- Solvents in Advanced Processes TF

**By / 2<sup>nd</sup>:** By: Andreas Neuber / Applied Materials GmbH  
Second: kennis ko / iii safety llc

**Discussion:** None.

**Vote:** 4-0 in favor. Motion passed.



## 9 Next Meeting and Adjournment

9.1 The next meeting is scheduled for SEMICON Europa 2025, date and time to be determined. Refer to <http://www.semi.org/standards-events> for the current list of events.

Adjournment: 16:40.

Respectfully submitted by:

Laura Nguyen

Sr. Coordinator, International Standards

SEMI Global Headquarters

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Minutes tentatively approved by:

Jochen Ruth (Pall Corporation), Gases & Liquid Chemicals Co-chair	<Date approved>
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**Table 14 Index of Available Attachments<sup>#1</sup>**

<i>Title</i>	<i>Title</i>
SEMI Standards Required Meetings Elements	LC_JA_Liaison Report_June 2024_R0
EU Gases & LChem Minutes Europa 2023	Staff Report November 2024 v4-EU
NA LChem Liaison Report Nov2024 v1	Semi_IRDS_2024_241113
G+F_JA TC Chapter Liaison Report_October 2024_R0_distr	

<sup>#1</sup> 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.