



North America Facilities & Gases TC Chapter Meeting Summary and Minutes



NA Standards Fall 2015 Meetings
 Tuesday, November 3, 2015, 0900 – 1200 Pacific Time
 SEMI Headquarters in San Jose, California

TC Chapter Announcements

Next NA TC Chapter Meeting
 NA Standards Spring 2016 Meetings
 Tuesday, April 5, 2016, 0900 – 1200 Pacific Time
 SEMI Headquarters in San Jose, California

Table 1 Meeting Attendees

Italics indicate virtual participants

Gases Cochairs: Tim Volin (Parker Hannifin), Mohamed Saleem (Fujikin)

Facilities Cochair: Steve Lewis (DPS)

SEMI Staff: Laura Nguyen, Kevin Nguyen, James Amano

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
Applied Materials	Mohammed	Bala	UA Associates	Hartsough	Larry
<i>AP Tech</i>	<i>Kiikvee</i>	<i>Bill</i>	Ultra Clean Technology (UCT)	Milburn	Matthew
<i>CONSCI</i>	<i>Ripkowski</i>	<i>Mark</i>	Ultra Clean Technology (UCT)	Chen	Yanli “Joyce”
DPS	Lewis	Steve	WIKA Instrument	Fritz	Thomas
Fujikin of America	Saleem	Mohamed	WIKA Instrument	Christian	Jeffrey
<i>Pall</i>	<i>Wagner</i>	<i>Matt</i>			
Parker Hannifin	Lis	Joseph	SEMI	Amano	James
Parker Hannifin	Volin	Tim	SEMI	Nguyen	Kevin
Rorze Automation	Barbeiro	Jason	SEMI	Nguyen	Laura

Table 2 Leadership Changes

<i>Group</i>	<i>Previous Leader</i>	<i>New Leader</i>
Gases Committee Cochair	Tim Volin - Retired	

Table 3 Ballot Results

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

Failed ballots and line items were returned to the originating task forces for re-work and re-balloting.

<i>Doc #</i>	<i>Committee</i>	<i>Document Title</i>	<i>Committee Action</i>
5876	Gases	New Standard, <i>Test Method for Determining the Critical Pitting Temperature of Stainless Steel Surfaces Used In Corrosive Gas Systems by Use of a Ferric Chloride Solution</i>	Passed with editorial changes

Table 3 Ballot Results

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

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Doc #	Committee	Document Title	Committee Action
5816A	Gases	Line item Revision to SEMI F30-0710, <i>Start-Up and Verification of Purifier Performance Testing for Trace Gas Impurities and Particles at an Installation Site with title change to Test Method for the Start-Up and Verification of Purifier Performance Testing for Trace Gas Impurities and Particles at an Installation Site</i>	Passed with editorial changes

Ratification Ballots

Doc #	Committee	Document Title	Committee Action
R5080B	Facilities	Revision of SEMI F51-0200, <i>Guide for Elastomeric Sealing Technology</i>	No Action , will be review in Spring 2016
R5671C	Gases	Revision of SEMI C3.12-1109, <i>Specification for Ammonia (NH₃) in Cylinders, 99.998% Quality</i>	Passed with editorial change via PIP form
R5673C	Gases	Revision of SEMI C3.34-1109, <i>Specification for Disilane (Si₂H₆) in Cylinders, 97% Quality</i>	Passed with editorial change via PIP form

Table 4 Authorized Activities

#	Type	SC/TF/WG	Details
5964	SNARF	Mass Flow Controller Task Force	Line item revision to SEMI E56-0314, <i>Test Method For Determining Accuracy, Linearity, Repeatability, Short-Term Reproducibility, Hysteresis, And Dead Band Of Thermal Mass Flow Controllers</i>
5963	SNARF	Mass Flow Controller Task Force	Line Item Revision To SEMI F62-0701 (Reapproved 1111) <i>Test Method For Determining Mass Flow Controller Performance Characteristics From Ambient And Gas Temperature Effects</i>
3440B	SNARF	Pressure Measurement Task Force	New Standard: <i>Test Method for Pressure Measurement Devices</i>

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

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

Table 5 Authorized Ballots

#	When	SC/TF/WG	Details
5964	Cycle 9, 2015	Mass Flow Controller Task Force	Line item revision to SEMI E56-0314, <i>Test Method For Determining Accuracy, Linearity, Repeatability, Short-Term Reproducibility, Hysteresis, And Dead Band Of Thermal Mass Flow Controllers</i>
5963	Cycle 2, 2016	Mass Flow Controller Task Force	Line Item Revision to SEMI F62-0701 (Reapproved 1111) <i>Test Method For Determining Mass Flow Controller Performance Characteristics From Ambient And Gas Temperature Effects</i>
3440B	Cycle 2, 2016	Pressure Measurement Task Force	New Standard: <i>Test Method for Pressure Measurement Devices</i>

Table 6 Open Action Items

Item #	Assigned to	Details	Status
None.			



Table 7 New Action Items

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>
2015Nov #01	Laura Nguyen	Create a priority list due for 5 year review and nonconforming titles. Send out to Cochairs and TF leaders. Set up teleconference to go over priority list.
2015Nov #02	Mohamed Saleem	To contact David Colquhoun and make a SNARF with the help of Matt Milburn and Bala Mohammed.
2015Nov #03	Laura Nguyen	Send copies of modified SNARF E56 and F62 to Mohamed Saleem.
2015Nov #04	Laura Nguyen	Send out an email to the members stating that there will be no Surface Mount Sandwich Component Dimensions TF at Spring Meetings 2016.
2015Nov #05	Jeffrey Christian, Bill Kiikvee	Find someone interested from Air Products to help revise SEMI F6, F13, and F14.

1 Welcome, Reminders, and Introductions

Steve Lewis, Facilities TC Chapter cochair, called the meeting to order at 9:00 AM. After welcoming all attendees, a round of introductions followed. The SEMI meeting reminders on program membership requirements, antitrust, intellectual property, and meeting guidelines were presented and explained. Note that this is a joint NA Facilities and Gases TC Chapter meeting.

Attachment: 01, SEMI Standards Required Meeting Elements

2 Review of Previous Meeting Minutes

The TC Chapter reviewed the minutes of the previous meeting held July 14, 2015 in conjunction with SEMICON West 2015 meetings.

- Motion:** Accept the minutes in the previous meeting as written.
- By / 2nd:** Mohamed Saleem (Fujikin) / Tim Volin (Parker Hannifin)
- Discussion:** None
- Vote:** 8-0 in favor, motion passed.

Attachment: 02, NA Gases Minutes 2015 SEMICON West

Attachment: 03, NA Facilities Minutes 2015 SEMICON West

3 Liaison Reports

3.1 Europe Gases and Liquid Chemicals Committee Express Report

Laura Nguyen (SEMI) presented the Europe Committee Express Report since there was no liaison report available when the meeting began. This report is available on the SEMI Standards website. You can also click [here](#).

Leadership Changes in the Committee

None.

Technical Ballot Actions

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
5495	Guide for CycloHexanone	Passed with technical change, ratification ballot required
5656A	Revision to SEMI C65-0308 : Guide for Trimethylsilane (3MS)	Failed
5657A	Revision to SEMI C66-0308: Guide for Trimethylaluminium (TMAI)	Failed
5658A	New Standard: Guide for Pentakis(Dimethylamino) Tantalum (PDMAT)	Passed with technical change, ratification ballot required
5765	Revision to SEMI C15 : Test Method for ppm and ppb humidity standards	Passed with technical change, ratification ballot required



New Task Force Activities

During the three-year SNARF review, the five SNARFs below were abolished by the committee.

#	Type	SC/TF/WG	Details
5325	SNARF	Precursor Specifications Task Force	New Standard: Guide For Dimethyl Dimethoxy Silane (DMDMOS)
5327	SNARF	Precursor Specifications Task Force	New Standard: Guide for Monomethyl Silane
5491	SNARF	Precursor Specifications Task Force	New Standard: Guide for Titanium Tetrachloride (TiCl4)
5493	SNARF	Precursor Specifications Task Force	New Standard: Guide for Octa Methyl Cyclo Tetra Siloxane (OMCTS)
5494	SNARF	Precursor Specifications Task Force	New Standard: Guide for Tetra Methyl Cyclo Tetra Siloxane (TMCTS)

Technical Ballots Expected for Review at the Next Committee Meeting

#	When	SC/TF/WG	Details
5656B	2016	Precursor Specifications TF	Revision to SEMI C65-0308 : Guide for Trimethylsilane (3MS)
5657B	2016	Precursor Specifications TF	Revision to SEMI C66-0308: Guide for Trimethylaluminium (TMAI)
SEMI C72-0811	2016		Reapproval Ballot: Guide for Propylene-Glycol-Mono-Methyl-Ether (PGME), Propylene-Glycol-Mono-Methyl-Ether-Acetate (PGMEA) and the Mixture 70wt% PGME/30wt% PGMEA
SEMI C67-0811	2016		Reapproval Ballot: Guide for Hafnium Amides
SEMI C68-0811	2016		Reapproval Ballot: Guide for Zirconium Amides
SEMI C73-0811	2016		Reapproval Ballot: Guide for Hafnium Chloride
SEMI C74-0811	2016		Reapproval Ballot: Guide for Hafnium Tert-Butoxide
SEMI C75-0811	2016		Reapproval Ballot: Guide for Tetrakis(Dimethylamino)Titanium
SEMI C76-0811	2016		Reapproval Ballot: Guide for Zirconium Tert-Butoxide

The Gases & Liquid Chemicals Committees EU Chapter Report became available after the meeting and will be included in these minutes as Attachment 04. The key items are as follows:

- October 8 TC Chapter Meeting
 - Five ballots adjudicated
 - Technical changes made to address negatives on three ballots which will undergo new ratification ballot process
 - Two other ballots failed and will be revised and reballoted for review at next TC Chapter meeting.
 - Presentations
 - ITRS Update
 - Andreas Neuber/AMAT
 - ElectroStatic Discharge : A Challenge in ultra high purity fluid handling
 - Jochen Ruth/PALL
- New Activity
 - Gas mixtures to replace the PFC's and NF3 as cleaning gases. As one of the mixture is similar to the existing 20%F2in 80% N2.
 - SNARF pending

- SNARF 3 Year Status

Committee	Date SNARF Approved	Doc. #	Title
Liquid Chemicals	10/13/2011	5325	New Standard: Guide For Dimethyl Dimethoxy Silane (DMDMOS)
Liquid Chemicals	10/10/2012	5327	New Standard: Guide for Monomethyl Silane
Liquid Chemicals	10/10/2012	5491	New Standard: Guide for Titanium Tetrachloride (TiCl ₄)
Liquid Chemicals	10/10/2012	5493	New Standard: Guide for Octa Methyl Cyclo Tetra Siloxane (OMCTS)
Liquid Chemicals	10/10/2012	5494	New Standard: Guide for Tetra Methyl Cyclo Tetra Siloxane (TMCTS)

- 5325
- 5327, 5493, 5494 covered by NA document
- 5491 – not relevant to semiconductor industry

- 5 Year Review

Committee		Title
Liquid Chemicals	SEMI C72-0811	Guide for Propylene-Glycol-Mono-Methyl-Ether (PGME), Propylene-Glycol-Mono-Methyl-Ether-Acetate (PGMEA) and the Mixture 70wt% PGME/30wt% PGMEA
Liquid Chemicals	SEMI C67-0811	Guide for Hafnium Amides
Liquid Chemicals	SEMI C68-0811	Guide for Zirconium Amides
Liquid Chemicals	SEMI C73-0811	Guide for Hafnium Chloride
Liquid Chemicals	SEMI C74-0811	Guide for Hafnium Tert-Butoxide
Liquid Chemicals	SEMI C75-0811	Guide for Tetrakis(Dimethylamino)Titanium
Liquid Chemicals	SEMI C76-0811	Guide for Zirconium Tert-Butoxide

- Reapproval ballots to be issued for all of the above

Attachment: 04, Gases & LiqChem Update to ERSC

3.2 Japan Gases Liaison Report

Laura Nguyen (SEMI) presented the Japan Gases liaison report. The key items were as follows:

- TC Chapter Cochairs
 - Hiromichi Enami/ Hitachi-High Technologies
 - Isao Suzuki/ MKS Japan
- Changes of Task Force
 - Task Force Leadership
 - Live Gas Flow Rate Task Force
 - Was newly set up at the previous TC Chapter meeting in September.
 - Moriya Shuji (Tokyo Electron Yamanashi), Ishihara Seiji (Flow Techno Service), Shimizu Tetsuo (Horiba STEC) were appointed as the leaders.
 - Standardization of Live Gas Flow Rate SG
 - Will be disbanded
- Last Meeting: September 18, 2015 during Japan Autumn Meetings 2015 at SEMI Japan, Tokyo, Japan
- Next Meeting; December 15, 2015 during SEMICON Japan Meeting 2015 at SEMI Japan, Tokyo, Japan
- No ballot review/results
- No upcoming ballots

- New TFOFs or SNARFs
 - New TFOF
 - Live Gas Flow Rate TF was newly set up to develop standard of test method(s) for live gas flow rate of mass flow controllers.
 - TFOF was approved at the previous meeting in September.
- Task Force Reports
 - Gas Panel Test Method TF – no activity
 - 5-year-review TF – no activity
 - Live Gas Flow Rate Task Force
 - The proposal of “Standardization of the process gas flow rates used in the semiconductor manufacturing process” was explained by AIST and discussed.
 - It was agreed to work together for developing standard documents.
 - Study Group was transferred to Task Force and TFOF was submitted to the previous TC Chapter meeting in September.
- Staff Contact: Naoko Tejima (ntejima@semi.org)

3.3 Japan Facilities Liaison Report

The Japan Facilities Liaison Report is combined with the Japan Gases Facilities Liaison report in Attachment 05 of these minutes.

- Committee Co-chairs
 - Hiromichi Enami/ Hitachi High Technologies
 - Isao Suzuki/ MKS Japan
- Current Committee Structure
 - **F1 Revision TF Leaders**
 - Shuji Moriya/ TEL Yamanashi
 - Yoshifumi Machii/ Fujikin
- Meeting Information
 - Facilities Japan TC’s were held in conjunction with Gases Japan TC’s but there was no Major activities.
- Staff Contact: Naoko Tejima (ntejima@semi.org)

Attachment: 05, Japan Gases & Facilities Liaison Report

3.4 Korea Liaison Report

Laura Nguyen (SEMI) presented the Korea liaison report. At this time only the Korea Liaison Report to the ISC was available. The key items were as follows:

- Major Activities
 - Translation
 - 6 standards were translated into Korean and published on Oct 5, 2015
 - E-series (E120.1 and E125.1)
 - S series (S6, S10, S14 and S21)
 - Education program
 - SEMI Equipment Automation (Software)
 - Date/Venue: Sept 19, 2015 at Gyeonggi-do (1 day)
 - Attendee: 55
 - Instructor: Hyungsu Kim (Doople/I&C Korea TC chapter co-chair)



- Upcoming Events
 - Korea Fall meetings 2015
 - FPD Metrology: November 5
 - HB LED CFG: November 15 (tentative)
 - Gas & Chemical CFG: TBD
 - SEMICON Korea 2016
 - I&C: January 27
 - HB-LED: January 28 (Draft)
 - FPD Metrology: January 29 (Draft)
- Staff Contact: Natalie Shim (eshim@semi.org)

Attachment: 06, Korea Liaison Report to ISC, RSC 2015Oct

4 SEMI Staff Report

Laura Nguyen (SEMI) gave the SEMI Staff Report. The key items were as follows:

- 2015/2016 Global Calendar of Events
 - SEMICON Japan (December 16-18, 2015, Tokyo, Japan)
 - European 3D Summit (Jan 18-20, 2016, Grenoble, France)
 - SEMICON Korea (January 27-29, 2016, Seoul, Korea)
 - ISS Europe (March 6-8, 2016, Nice, France)
 - Solarcon China/SEMICON China (March 15-17, 2016)
 - Advanced Semiconductor Manufacturing Conference [ASMC] (May 16-19, 2016, Saratoga Spring, New York, USA)
 - SEMICON West (July 12-14, 2016, San Francisco, California, USA)
 - SEMICON Taiwan (September 7-9, 2016, Taipei, Taiwan)
 - SEMICON Europa (October 25-27, 2016, Grenoble, France)
- Upcoming North America Standards Meetings
 - NA Standards Spring 2016 Meetings (April 4-7, SEMI HQ, San Jose, California)
 - SEMICON West (July 11-14, 2016, San Francisco, California)
 - NA Standards Fall 2016 Meetings (November 7-10, 2016 [tentative] SEMI HQ, San Jose, California)
- Letter Ballot Critical Dates for 2015 & 2016
 - 2015
 - Cycle 8: ballot submission due: October 16
Voting Period: October 23 – November 23
 - Cycle 9: ballot submission due: November 16
Voting Period: December 1 – December 31
 - 2016
 - Cycle 1: ballot submission due: January 4
Voting Period: January 12-February 12
 - Cycle 2: ballot submission due: February 2
Voting Period: February 16-March 17
 - <http://www.semi.org/Standards/Ballots>



- Standards Publications Report

<i>Cycle</i>	<i>New</i>	<i>Revised</i>	<i>Reapproved</i>	<i>Withdrawn</i>
<i>March 2015</i>	4	0	0	0
<i>April 2015</i>	3	9	8	0
<i>May 2015</i>	3	8	2	0
<i>June 2015</i>	2	13	5	1

- Total in portfolio – 949 (includes 113 Inactive Standards)
- New Requirements/Process Reminders for TC Chapter Meetings
 - Standards Document Development Project Period
 - Project period shall not exceed three years (*Regulations* ¶ 8.3.2).
 - SNARF approval to TC Chapter approval
 - If Document development activity is found to be continuing, but cannot completed within the project period, TC Chapter may grant one-year extension at a time, as many times as necessary.
 - SNARF Review Period
 - A submitted SNARF for a new, or for a major revision to an existing, Standard or Safety Guideline is made available to all members of a TC Chapter’s parent global technical committee for two weeks for their review and comment. (*Regulations* ¶ 8.2.1).
 - If the SNARF is submitted at a TC Chapter meeting, the TC Chapter can review and approve, but the SNARF will need to be distributed for two weeks and then approved via GCS.
 - New SNARF & TFOF forms *{embedded in Staff Report, see Attachment 07 of these minutes}*
- Procedures for Correcting Nonconforming Titles of Published Standards Document (*Procedure Manual* Appendix 4)
 - Some Standards qualify for a special procedure where a line-item change can be used to correct the titles. Otherwise, the corrective action will likely require a major revision.
 - List of Nonconforming Titles in Staff Report *{see Attachment 07 of these minutes}*

Action Item: 2015Nov#1, Laura Nguyen to create a priority list due for 5 year review (one for each task force and copy the committee)

- Standards needing Five-Year Review *{embedded in Staff Report, see Attachment 07 of these minutes}*
- SNARF 3 Year Status
 - Facilities
 - Reapproval of SEMI E51-0200, Guide for Typical Facilities Services and Termination Matrix
 - Reapproval of SEMI E6-0303, Guide for Semiconductor Equipment Installation Documentation
 - SNARFs were approved on 4/2/2013

Motion: Grant one-year extension for SEMI E51 SNARF
By / 2nd: Tim Volin (Parker Hannifin) / Bala Mohammed (Applied Materials)
Discussion: None.
Vote: 12-0 in favor, motion passed.

Motion: Grant one-year extension for SEMI E6 SNARF
By / 2nd: Mohamed Saleem (Fujikin) / Tim Volin (Parker Hannifin)
Discussion: None.
Vote: 11-0 in favor, motion passed.

- Gases
 - 3440, New Standard: Test Method for Pressure Measurement Devices
 - SNARF was approved on 8/22/2001



- 5244, Reapproval of SEMI F21-1102, Classification of Airborne Molecular Contaminant Levels in Clean Environments
 - SNARF was approved on 7/12/2011
- Both SNARFs were granted 1 year extension at West
 - TC Chapter may grant a one-year extension
- Staff Contact: Laura Nguyen (lnguyen@semi.org)

Attachment: 07, SEMI Standards Staff Report

5 Ballot Review

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

Failed ballots and line items were returned to the originating task forces for re-work and re-balloting.

NOTE 1: TC Chapter adjudication is detailed in the Audits & Reviews (A&R) Subcommittee Forms for procedural review. The A&R form is available as an attachment to these minutes. The attachment number for each document is provided below the summary tables.

5.1 Facilities Ballots

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
R5080B	Revision of SEMI F51-0200, <i>Guide for Elastomeric Sealing Technology</i>	No Action , will be review in Spring 2016

Email F51 Revision TF Update from Paul Trio; dated 11/2/2015. The key items are as follows:

- Ballot 5080B (F51 revision, *Guide for Elastomeric Sealing Technology*) passed at SEMICON West 2015 last July with both technical and editorial changes. The Ratification Ballot was issued shortly thereafter where it ultimately achieved the criteria for passing. This document also passed A&R procedural reviews where it will now go into final publication processing.
- The Ratification Ballot received only one reject vote (from Eric Sklar). Eric provided 6 reasons for why he objected. Three (3) of those reasons turned out to be ballot prep/formatting error that will be addressed during publication processing. The other three (3) were found by the TF to helpful in making the updated F51 Standard even better.
- Therefore, the TF plans to work on a follow-on ballot and will prepare a F51 line-item-revision SNARF to be submitted for approval ASAP. If the TF is unable to prepare a SNARF this week, it will be submitted for GCS approval after the meetings.

F51 Task Force report will be reported in Section 6 of these minutes.

5.2 Gases Ballots

Cycle 6, 2015 Ballots

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
5876	New Standard, <i>Test Method for Determining the Critical Pitting Temperature of Stainless Steel Surfaces Used In Corrosive Gas Systems by Use of a Ferric Chloride Solution</i>	Passed with editorial changes

Tim Volin presented the Ballot Review for Doc 5876.

Motion: To find the negatives Number SG 01-06, 09, 11, 12, 14, 16, 18, 19 not technically persuasive, editorial changes.

By / 2nd: Tim Volin (Parker Hannifin) / Bala Mohammed (Applied Materials)

Discussion: None.

Vote: 9-0 in favor, motion passed.

Motion: To find the negative Number SG 13 non persuasive, no changes made and will be addressed in the future by line item ballot.

By / 2nd: Tim Volin (Parker Hannifin) / Mohamed Saleem (Fujikin)

Discussion: None.

Vote: 9-0 in favor, motion passed.



Motion: To find the negatives Number SG 07, 10, 15, 17 not technically persuasive, no change was made.
Reason: Already addressed in the document elsewhere
By / 2nd: Mohamed Saleem (Fujikin) / Tim Volin (Parker Hannifin)
Discussion: None.
Vote: 9-0 in favor, motion passed.

Motion: To find the negative Number SG 08 technically not relevant persuasive.
By / 2nd: Mohamed Saleem (Fujikin) / Bala Mohammed (Applied Materials)
Discussion: None.
Vote: 9-0 in favor, motion passed.

The committee found the comment “In subsections 3.2, 7.3 and 8.1.2 is necessary separate values of units” made by Rafael Vargas-Bernal (ITS) strictly editorial and changes will be made by publications.

Motion: Doc 5876 is not a Safety Document, when all safety-related information is removed, the Document is still technically sound and complete.
By / 2nd: Mohamed Saleem (Fujikin) / Tim Volin (Parker Hannifin)
Discussion: None.
Vote: 9-0 in favor, motion passed.

No potentially material patented technology or reproduction of copyrighted items is known for Doc 5876.

Motion: Send Doc 5876 to A&R for publications
By / 2nd: Tim Volin (Parker Hannifin) / Mohamed Saleem (Fujikin)
Discussion: None.
Vote: 7-0 in favor, motion passed.

Attachments: 08, Doc 5876 rejects Final rev20151117
09, 5876ProceduralReview

Cycle 7, 2015 Ballots

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
5816A	Line item Revision to SEMI F30-0710, <i>Start-Up and Verification of Purifier Performance Testing for Trace Gas Impurities and Particles at an Installation Site with title change to Test Method for the Start-Up and Verification of Purifier Performance Testing for Trace Gas Impurities and Particles at an Installation Site</i>	Passed with editorial changes

Mohamed Saleem (Fujikin) presented the Ballot Review for Doc 5816A.

Motion: To find the negative Number SG 01 persuasive with editorial changes to drop “testing.”
By / 2nd: Mohamed Saleem (Fujikin) / Yanli Joyce Chen (UCT)
Discussion: None.
Vote: 7-0 in favor, motion passed.

Motion: To find the negative Number SG 02 editorial. {See Attachment 09 for further details}
By / 2nd: Mohamed Saleem (Fujikin) / Matt Milburn (UCT)
Discussion: None.
Vote: 6-0 in favor, motion passed.



- Motion:** To find the negative Number SG 03 non persuasive.
By / 2nd: Mohamed Saleem (Fujikin) / Thomas Fritz (WIKA)
Discussion: None.
Vote: 6-0 in favor, motion passed.
- Motion:** To find the negatives Number SG 04 not technically persuasive, editorial. {*See Attachment 09 for further details*}
By / 2nd: Mohamed Saleem (Fujikin) / Jeffrey Christian (WIKA)
Discussion: None.
Vote: 6-0 in favor, motion passed.
- Motion:** To find the negatives Number SG 05 not related to the line item balloted.
By / 2nd: Mohamed Saleem (Fujikin) / Thomas Fritz (WIKA)
Discussion: None.
Vote: 7-0 in favor, motion passed.
- Motion:** To find the negatives Number SG 06 not related to the line item balloted.
By / 2nd: Mohamed Saleem (Fujikin) / Yanli Joyce Chen (UCT)
Discussion: None.
Vote: 7-0 in favor, motion passed.
- Motion:** To find Matthew Milburn's (UCT) reject not related to line item balloted. Will be addressed later.
By / 2nd: Mohamed Saleem (Fujikin) / Jeffrey Christian (WIKA)
Discussion: None.
Vote: 7-0 in favor, motion passed.
- Motion:** To find Yanli Chen's (UCT) reject not related to line item balloted. Will be addressed later.
By / 2nd: Mohamed Saleem (Fujikin) / Jeffrey Christian (WIKA)
Discussion: None.
Vote: 7-0 in favor, motion passed.
- Motion:** Doc 5816A is not a Safety Document, when all safety-related information is removed, the Document is still technically sound and complete.
By / 2nd: Mohamed Saleem (Fujikin) / Thomas Fritz (WIKA)
Discussion: None.
Vote: 7-0 in favor, motion passed.
- No potentially material patented technology or reproduction of copyrighted items is known for Doc 5876.
- Motion:** Send Doc 5876 to A&R for publications.
By / 2nd: Mohamed Saleem (Fujikin) / Tim Volin (Parker Hannifin)
Discussion: None.
Vote: 7-0 in favor, motion passed.

Attachments: 10, Task Force Report FP 11_02_2015
11, 5816A Procedural Review



Ratification Ballots

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
R5671C	Revision of SEMI C3.12-1109, <i>Specification for Ammonia (NH3) in Cylinders, 99.998% Quality</i>	Passed with editorial change via a PIP form

Mark Ripkowski (CONSCI) presented the Ballot Review for Doc R5671C and R5673C.

Motion: To find negative SG 01 and SG 02, Section 8.3.3.2 editorial by nature, non persuasive.
By / 2nd: Mohamed Saleem (Fujikin) / Bala Mohammed (Applied Materials)
Discussion: None.
Vote: 8-0 in favor, motion passed.

Attachments: 12, Draft Document based on R5671C

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
R5673C	Revision of SEMI C3.34-1109, <i>Specification for Disilane (Si2H6) in Cylinders, 97% Quality</i>	Passed with editorial change via a PIP form

Motion: To find negative Number SG 01, Section 8.1.4.5 editorial in nature.
By / 2nd: Mohamed Saleem (Fujikin) / Bala Mohammed (Applied Materials)
Discussion: None.
Vote: 8-0 in favor, motion passed.

Motion: To find negative Number SG 02, Section 8.5.2.4 editorial in nature.
By / 2nd: Mohamed Saleem (Fujikin) / Jeffrey Christian (WIKA)
Discussion: None.
Vote: 8-0 in favor, motion passed.

Attachments: 13, Draft Document based on R5673C

Steve Lewis (DPS Engineering) made a motion to take a 10 minute break from 11:00 AM to 11:10 AM.

6 Facilities Task Force Reports

6.1 F51 Elastomeric Sealing Revision Task Force

Steve Lewis (DPS Engineering) presented the F51 TF Report. The key items are as follow:

- Document 5080: Revision of SEMI F51-0200, Guide for Elastomeric Sealing Technology
 - July 2015: Ballot 5080B passed technical committee review with technical and editorial changes
 - July 2015: Ratification Ballot 5080B issued for Cycle 6 voting period
 - August 2015: Document 5080B passed procedural review of technical committee adjudication
 - September 2015: Ratification Ballot 5080B meets acceptance conditions
 - Approve Votes = 32.39% (target: ≥ 30%)
 - Disapprove Votes = 1.04% (target: <10%)
 - October 2015: Ratification
- R5080 Ratification Ballot Results
 - Ratification Ballot only received one (1) Disapprove Vote.

- Six (6) reasons were provided with the Disapprove Vote.
 - Three of the reasons pointed out staff formatting errors that will be fixed by SEMI Publications.
 - The other three reasons provided inputs that can help improve the readability of the updated F51 standard.
- R5080 voter Inputs to be addressed in a follow-on ballot

<i>Number</i>	<i>Location</i>	<i>Comment/Negative</i>
SG01	5.2.6	Negative: Proposed TC does not address the Negative on 5080B ballot. Reason/Justification: Negative pertaining to this paragraph in 5080B was claimed to have been addressed by a Technical Change, but the TC shown in this ballot does not address all of the points in the Negative, such as the specificity of this definition to "a glass surface" but usage for elastomers.
SG03	7	Negative: Proposed TC does not address the Negative on 5080B ballot. Reason/Justification: Negative pertaining to this Section in 5080B was claimed to have been addressed by a Technical Change, but the TC shown in this ballot does not address the key point of the Negative: There is no obvious connection between PFOA and the subject of this document. If this Section was included because PFOA is a material for which elastomeric seals are used or from which elastomeric seals are made, that connection should be stated. If there is no connection between PFOA and the subject of this document, the Section should be deleted.
SG05	9.3	Negative: Proposed TC does not address the Negative on 5080B ballot. Reason/Justification: Negative pertaining to this paragraph in 5080B was claimed to have been addressed by a Technical Change, and the TC described in the adjudication record does address it reasonably. However, the TC shown in this ballot does not match the adjudication record and does not address one of the points in the Negative: Neither of those substances is an example of thermal degradation.

- F51 Revision TF found voter inputs helpful in improving the readability and use of the F51 standard.
- The task force will develop a SNARF for F51 line item revisions and will submit for either GCS or committee approval as soon as possible.
- The proposed F51 line item changes are detailed in the following slides:

(1) Proposed F51 line item revision

Change from:

Chemical property — chemical durability is a measure of corrosion or attack of a glass surface when subjected to a specific reagent, such as acid, base, or water at a specific concentration for a specific time and temperature. [SEMI D9]

To:

Chemical property — chemical durability is a measure of corrosion or attack of a glass smooth and unattached surface when subjected to a specific reagent, such as acid, base, or water at a specific concentration for a specific time and temperature.

(2) Proposed F51 line item revision

Change from:

7 Consideration for Perfluorooctanoic Acid (PFOA) and Fluorinated Telomers

7.1 EPA has been investigating PFOA. Refer to the EPA PFOA website <http://www.epa.gov/oppt/pfoa/index.html>

To:

7 Consideration for Perfluorooctanoic Acid (PFOA) and Fluorinated Telomers

7.1 **Perfluorooctanoic acid (PFOA), a perfluorinated material, is widely used in Semiconductor industry. One commonly known application is the manufacturing of PTFE, which is a widely used filler for compounding semiconductor seal materials**

EPA has been investigating PFOA. Refer to the EPA PFOA Web site <http://www.epa.gov/oppt/pfoa/index.html>

(3) Proposed F51 line item revision

Change from:

9.3 Chemically Assisted Elastomeric and Thermal Elastomeric Degradation involve the loss of seal chemical compatibility to the process chemistries. An example is Hydrofluoric Acid (HF) dissolves silicone elastomers. The same is true of thermal degradation (e.g., Piranha or Phosphoric Acids) where the process temperature causes thermally and chemically induced effects on the seal that can also contribute to the mechanical failure of the seal.

To:

9.3 Chemically Assisted Elastomeric and Thermal Elastomeric Degradation involve the loss of seal chemical compatibility to the process chemistries. An example is Hydrofluoric Acid (HF) dissolves silicone elastomers. The same is true of thermal degradation (e.g., **process involves** Piranha or Phosphoric Acids) where the process temperature causes thermally and chemically induced effects on the seal that can also contribute to the mechanical failure of the seal.

- F51 Revision TF found voter inputs helpful in improving the recently updated F51 standard and will plan to submit a follow-on ballot.
- The task force will develop a SNARF for F51 line item revisions and will submit for either GCS or committee approval as early as possible.

Attachments: 14, F51 Revision T Report (Fall 2015)

6.2 Building Information Modeling (BIM) Task Force

The BIM TF did not meet so there is no update at this time. Mohamed Saleem reported that David Bouldin was in contact with Ben Bruce. They are currently working on a draft document for SNARF 5155. There are no new activities at this time.

7 Gases Task Force Reports

7.1 Heater Jacket Task Force

Mohamed Saleem had an action to contact David Colquhoun, who is the leader of this task force. He reported that David is planning to work on a Materials and Recommendations document. An outline is done and needs the support of the committee to push through for the next meeting.

Action Item: 2015Nov#2, Mohamed Saleem will contact David Colquhoun and make a SNARF with the help of Matt Milburn (UCT) and Bala Mohammed (Applied Materials).

7.2 Mass Flow Controller Task Force

Mohamed Saleem reported for the MFC TF. The key items, including SNARFs, being worked on are as follows:

- Proposed correction items for SEMI E56-0815, *Test Method for Determining Accuracy, Linearity, Repeatability, Short-Term Reproducibility, Hysteresis, and Deadband of Thermal Mass Flow Controllers* to formulas 1, 2, 6, and 16. {See Attachment 15 of these minutes for SNARF Line Item Revision to SEMI E56}

Motion: To accept SNARF Line Item Revision E56 as written and modified.
By / 2nd: Bala Mohammed (Applied Materials) / Thomas Fritz (WIKA)
Discussion: None.
Vote: 8-0 in favor, motion passed.

Motion: To forward Line Item Revision SEMI E56 to committee for Cycle 9, 2015.
By / 2nd: Mohamed Saleem (Fujikin) / Matt Milburn (UCT)
Discussion: None.
Vote: 9-0 in favor, motion passed.

Action Item: 2015Nov#3, Laura Nguyen to send copies of modified SNARF E56 and F62 to Mohamed Saleem.

- Proposed correction items for SEMI F62-0701 (Reapproved 1111), *Test Method for Determining Mass Flow Controller Performance Characteristics for Ambient and Gas Temperature Effects* to formulas 1, 2, and 4 and to paragraphs 2.2, 2.3, and 2.4. {See Attachment 16 of these minutes for SNARF Line Item Revision to SEMI F62}

Motion: To accept SNARF Line Item Revision F62 as written and modified.

By / 2nd: Mohamed Saleem (Fujikin) / Yanli Chen (UCT)

Discussion: None.

Vote: 7-0 in favor, motion passed.

Motion: To forward Line Item Revision SEMI F62 to committee for Cycle 2, 2016.

By / 2nd: Mohamed Saleem (Fujikin) / Bala Mohammed (Applied Materials)

Discussion: None.

Vote: 8-0 in favor, motion passed.

Attachment: 15, SNARF Line Item Revision to SEMI E56 rev20151103
16, SNARF Line Item Revision to SEMI F62 rev20151103
17, Task Force Report MFC 11_03_2015

7.3 Pressure Measurement Task Force

Joyce Chen reported for the Pressure Measurement Task Force. The key items were as follows:

- Task Force Meeting Summary:

Inputs:

- Reviewed prior meeting minutes and activities.
- Presented SEMI Draft 3440 proposed “test method” to the Task Force.
- Task Force reviewed test method, recently added definitions and formulas and made suggestions for improvements.

- Task Force Agreements:

a. Continue with the “test method” standard (SEMI Draft 3440) through the incorporation of IEC 61298-2 as presented.

- Task Force Action Items

- Add definition for Accuracy RSS
- Review Temperature Coefficients and references to EN/3 Norm
 - Determine how many pressure ranges should be tested?
- Review Test Method “draft” to ensure REFERENCES are documented and un-used references are removed.
 - i.e., F28/E28, F4, F19, F20
- Submit for balloting 2016, Cycle 2: Feb 2nd
- Review balloting results at Spring Meeting: April 4th – 5th
- Send for publication in-time for Semicon West: July 11th – 12th

Motion: To send Doc 3440 to ballot for Cycle 2, 2016.

By / 2nd: Jeffrey Christian (WIKA) / Yanli Chen (UCT)

Discussion: None.

Vote: 9-0 in favor, motion passed.

Attachments: 18, Pressure Measurement Task Force Report
19, SEMI Draft Doc 3440

7.4 Surface Mount Sandwich Component Dimensions Task Force

Matt Milburn reported that the task force has had no new activity since the Surface Mount Sandwich Component Dimensions Standard has been published. The Committee discussed of possibly disbanding this task force. Instead, the Committee will make this TF inactive until further notice.

Action Item: 2015Nov#4, Laura Nguyen to send out an email to the members stating that there will be no Surface Mount Sandwich Component Dimensions TF meeting at Spring Meetings 2016.

7.5 Filters & Purifiers Task Force

Mohamed Saleem reported for the Filters & Purifiers TF. The key items were as follows:

- Doc. #5667, New Standard: Test Method for Determination of Moisture Dry-Down Characteristics of Gas Delivery Components
 - SEMI is in the final stages of publishing this as a standard C91. However, need the quality of one figure to improve (the lines appear too faint). TF will work on it.
- Ballot Review for Doc 5816A
{See Section 5; 5.2 Gases Ballot Review of these minutes for the details of Doc 5816}
- Doc. 5244B, Revision of SEMI F21-1102, Classification of Airborne Molecular Contaminant Levels in Clean Environments – Douglas Barth/Pall and M. Saleem/Fujikin
 - No further activity, follow up with Douglas Barth.
 - TF Action: Douglas indicated he will be unable to spend time on this document due to changes at his company. TF leader (M. Saleem) to attempt to work on this document and send it for balloting by cycle 2, 2016.

Attachments: 10, Filters and Purifiers Task Force Report

7.6 Materials of Construction of Gas Delivery System Task Force

Tim Volin presented the Materials Task Force report. The key items are as follows:

- New Standard Draft Doc 5876, *Test Method for Determining the Critical Pitting Temperature Of Stainless Steel Surfaces Used In Corrosive Gas Systems By Use Of A Ferric Chloride Solution.*
 - Doc 5876 was balloted and received one reject (Eric Sklar, 19 items) and one comment (Rafael Vargas-Bernal, ITS).
 - The 19 items cited in the reject were discussed by the TF and unanimously determined to be either not persuasive (no change) or editorial (editorial change).
 - The comment was determined not to have merit.
 - The TF voted unanimously to recommend to the Gases Committee that the Doc be forwarded for A&R review and publication.
 - See Section 5 of these minutes for details of the Ballot Review on Doc 5876.

Attachment: 21, Report of the Materials Task Force Fall 2015

7.7 Gases Specification Task Force

Mark Ripkowski reported for the Gases Specification TF. There is currently no old business or new business. See Section 5 of these minutes for the ratification ballot review on Doc R5671C and R5673C.

Attachment: 22, Gas Specification TF Minutes 11_02_2015

8 Old Business

8.1 Standards due for Five-Year Review

This item has been reviewed in the beginning of these minutes and an action item has been issued for further review (2015Nov#01).

8.2 SNARFs approaching Three-Year Document Development Period

This item has been reviewed in the beginning of these minutes during the SEMI Standards Staff Report.

9 New Business

9.1 New TFOF(s) and SNARF(s)

#	Type	SC/TF/WG	Details
5964	SNARF	Mass Flow Controller Task Force	Line item revision to SEMI E56-0314, <i>Test Method For Determining Accuracy, Linearity, Repeatability, Short-Term Reproducibility, Hysteresis, And Dead Band Of Thermal Mass Flow Controllers</i>
5963	SNARF	Mass Flow Controller Task Force	Line Item Revision To SEMI F62-0701 (Reapproved 1111) <i>Test Method For Determining Mass Flow Controller Performance Characteristics From Ambient And Gas Temperature Effects</i>
3440B	SNARF	Pressure Measurement Task Force	New Standard: <i>Test Method for Pressure Measurement Devices</i>

9.2 Authorizations for Ballot Submission

#	When	SC/TF/WG	Details
5964	Cycle 9, 2015	Mass Flow Controller Task Force	Line item revision to SEMI E56-0314, <i>Test Method For Determining Accuracy, Linearity, Repeatability, Short-Term Reproducibility, Hysteresis, And Dead Band Of Thermal Mass Flow Controllers</i>
5963	Cycle 2, 2016	Mass Flow Controller Task Force	Line Item Revision to SEMI F62-0701 (Reapproved 1111) <i>Test Method For Determining Mass Flow Controller Performance Characteristics From Ambient And Gas Temperature Effects</i>
3440B	Cycle 2, 2016	Pressure Measurement Task Force	New Standard: <i>Test Method for Pressure Measurement Devices</i>

10 Action Item Review

10.1 Open Action Items

Laura Nguyen (SEMI) reviewed the open action items. These can be found in the Open Action Items table at the beginning of these minutes.

10.2 New Action Items

Laura Nguyen (SEMI) reviewed the new action items. These can be found in the New Action Items table at the beginning of these minutes.

11 Adjournment

The next NA Facilities & Gases TC Joint Chapter meeting is scheduled for April 5 in conjunction with the NA Standards Spring 2016 Meetings at SEMI Headquarters in San Jose, California. The tentative schedule is provided below:

Monday, April 4

- Gases Task Force Meetings
 - Materials of Construction of Gas Delivery Systems TF (8:00 AM to 9:30 AM)
 - Filters and Purifiers TF (9:30 AM to 11:00 AM)
 - Mass Flow Controller TF (11:00 AM to 12:00 Noon)
 - Gas Specifications TF (1:00 PM to 2:00 PM)
 - Pressure Measurement TF (2:00 PM to 4:00 PM)
- Facilities Task Force Meetings
 - SEMI F51 (Perfluoroelastomer) TF (12:30 PM to 2:30 PM)
 - Building Information Modeling (BIM) for Semiconductor Capital Equipment TF (3:00 PM to 5:00 PM)

Tuesday, November 3

- Joint Facilities & Gases TC Chapter Meeting (9:00 AM to 12:00 Noon)



Having no further business, a motion was made to adjourn the NA Facilities & Gases TC Joint Chapter meeting on November 3 in conjunction with the NA Standards Fall 2015 Meetings. Adjournment was at 12:00 Noon.

Respectfully submitted by:

Laura Nguyen
Standards Project Coordinator
SEMI North America
Phone: +1.408.943.7019
Email: lnguyen@semi.org

Minutes approved by:

Steve Lewis (DPS Engineering)	<Date Approved>
Tim Volin (Parker Hannifin)	March 10, 2016
Mohamed Saleem (Fujikin)	03-15-2016

Table 8 Index of Available Attachments #1

#	Title	#	Title
1	SEMI Standards Required Meeting Elements	12	Draft Document based on R5671C
2	NA Gases Minutes 2015 SEMICON West	13	Draft Document based on R5673C
3	NA Facilities Minutes 2015 SEMICON West	14	F51 Revision T Report (Fall 2015)
4	Gases & LiqChem Update to ERSC	15	SNARF Line Item Revision to SEMI E56 rev20151103
5	Japan Gases & Facilities Liaison Report	16	SNARF Line Item Revision to SEMI F62 rev20151103
6	Korea Liaison Report to ISC, RSC 2015Oct	17	MFC Task Force Report
7	SEMI Standards Staff Report	18	Pressure Measurement Task Force Report
8	Doc 5876 rejects Final rev20151117	19	SEMI Draft Doc 3440
9	5876ProceduralReview	20	Report of the Materials Task Force Fall 2015
10	Task Force Report FP 11_02_2015	21	Gas Specification TF Minutes 11_02_2015
11	5816A Procedural Review		

#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. For additional information or to obtain individual attachments, please contact Laura Nguyen at the contact information above.