



EU Gases and Liquid Chemicals C Chapters Meeting Summary and Minutes

SEMICON Europa 2015

Oct. 7, 2015

Dresden, Germany

Table 1 Meeting Attendees

Italics indicate virtual participants

Co-Chairs: Gordon Ferrier (Gordon F Consulting), Jean-Marie Collard (Solvay Chemicals)

SEMI Staff: John Doe

| <i>Company</i> | <i>Last</i> | <i>First</i> | <i>Company</i> | <i>Last</i> | <i>First</i> |
|---------------------|-------------|--------------|-------------------------------|-------------|--------------|
| Air Products | Buchanan | Iain | M+W Products Gmbh | Otto | Michael |
| Entegris | Lundgren | Jorgen | Pall Gmbh | Ruth | Jochen |
| Eco Scientific | Durrant | Stephen | Sitex 45 | Ulieru | Dumitru |
| Gordon F Consulting | Ferrier | Gordon | Solvay Chemicals | Dabrunz | Matthias |
| Honeywell | Blodorn | Wilhelm | Technologies Consulting Wolke | Wolke | Klaus |

Table 2 Leadership Changes

| <i>Group</i> | <i>Previous Leader</i> | <i>New Leader</i> |
|--------------|------------------------|-------------------|
| None | | |

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>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 |

Table 4 Authorized Activities

| # | Type | SC/TF/WG | Details |
|------|-------|-------------------------------------|---|
| 5325 | SNARF | Precursor Specifications Task Force | New Standard: Guide For Dimethyl Dimethoxy Silane (DMDMOS) ABOLISHED |
| 5327 | SNARF | Precursor Specifications Task Force | New Standard: Guide for Monomethyl Silane ABOLISHED |
| 5491 | SNARF | Precursor Specifications Task Force | New Standard: Guide for Titanium Tetrachloride (TiCl ₄) ABOLISHED |
| 5493 | SNARF | Precursor Specifications Task Force | New Standard: Guide for Octa Methyl Cyclo Tetra Siloxane (OMCTS) ABOLISHED |
| 5494 | SNARF | Precursor Specifications Task Force | New Standard: Guide for Tetra Methyl Cyclo Tetra Siloxane (TMCTS) ABOLISHED |

NOTE 1: 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 |
|---------------|------|-------------------------------------|---|
| 5656B | 2016 | Precursor Specifications Task Force | Revision to SEMI C65-0308 : Guide for Trimethylsilane (3MS) |
| 5657B | 2016 | Precursor Specifications Task Force | Revision to SEMI C66-0308: Guide for Trimethylaluminium (TMAI) |
| SEMI C72-0811 | 2016 | EU Liq Chem TC Chapter | 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 | EU Liq Chem TC Chapter | Reapproval Ballot: Guide for Hafnium Amides |
| SEMI C68-0811 | 2016 | EU Liq Chem TC Chapter | Reapproval Ballot: Guide for Zirconium Amides |
| SEMI C73-0811 | 2016 | EU Liq Chem TC Chapter | Reapproval Ballot: Guide for Hafnium Chloride |
| SEMI C74-0811 | 2016 | EU Liq Chem TC Chapter | Reapproval Ballot: Guide for Hafnium Tert-Butoxide |
| SEMI C75-0811 | 2016 | EU Liq Chem TC Chapter | Reapproval Ballot: Guide for Tetrakis(Dimethylamino)Titanium |
| SEMI C76-0811 | 2016 | EU Liq Chem TC Chapter | Reapproval Ballot: Guide for Zirconium Tert-Butoxide |

Table 6 New Action Items

| <i>Item #</i> | <i>Assigned to</i> | <i>Details</i> |
|---------------|---------------------------------------|--|
| 1 | James Amano | Update status of abolished SNARFs 5325, 5327, 5491, 5493, and 5494 |
| 2 | James Amano | Issue Ratification ballots for 5495, 5658A, and 5765. |
| 3 | Jean-Marie Collard and Gordon Ferrier | To issue revision ballots 5656B and 56567B |

Table 7 Previous Meeting Action Items

| <i>Item #</i> | <i>Assigned to</i> | <i>Details</i> |
|---------------|--------------------|--|
| 1 | Jim McKinley | Prepare Ballot 5765 : Revision to SEMI C15 : Test Method for ppm and ppb humidity CLOSED |

1 Welcome, Reminders, and Introductions

Co-chair Gordon Ferrier called the meeting to order 10:10. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

Attachment: Required Elements March 27, 2015

2 Review of Previous Meeting Minutes

The TC Chapter reviewed the minutes of the previous meeting.

Motion: To approve the minutes as submitted.

By / 2nd: Stephen Durrant/Jochen Ruth

Discussion: None

Vote: 5-0

Attachment: 141007_GLC_Minutes_Approved

3 Liaison Reports

3.1 Japan Liquid Chemicals TC Chapter

James Amano reported Of note:

- Liquid Chemicals ESD Study Group
 - Since the all tasks have been finished, the SG was disbanded, and Keiichi Yamakawa / NihonGore and Takuya Nagafuchi / Nihon Entegris were relieved of the SG co-leader position.
- Liquid Filter Task Force
 - LOA of Doc. 5421A, New Standard: “Test Method for Particle Removal Performance of Liquid Filter Rated Below 30 nm with ICP-MS” was submitted. Will be published soon.

Attachment: 1510_JA_LC_LiaisonR_R0.0.ppt

3.2 NA Liquid Chemicals TC Chapter

James Amano reported Of note:

- Analytical Test Methods TF



- The TF reviewed Doc. 5831A, Revision to SEMI C27-0708, *Specifications and Guideline for Hydrochloric Acid* with title change to: *Specification and Guide for Hydrochloric Acid*
 - It will be submitted for Letter ballot in Cycle 7.
- SEMI F57(Specification for Polymer Materials and Components Used in Ultrapure Water and Liquid Chemical Distribution Systems) Revision / ITRS Alignment / F40 Rewrite TF
 - The TF reviewed Ballot results for Document 5810A, New Standard: Test Method for Testing PFA Materials Used In Liquid Chemical Distribution Systems
 - TC Chapter passed it with editorial changes
- Determining Roughness of Polymer Surfaces TF
 - Published New Standard: SEMI C87-0515 Test Method for Determining Roughness Of Polymer Surfaces Used In Ultrapure Water and Liquid Chemical Distribution Systems By Contact Profilometry

Attachment: NA LChem Report West 2015 DLB.ppt

3.3 Japan Gases TC Chapter

James Amano reported. Of note:

- 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.

Attachment: 1510_JA_G+F_LiaisonR_r0.0.ppt

3.4 NA Gases TC Chapter

James Amano reported. Of note:

- Pressure Measurement TF
 - Update for Document 3440, New Standard: Test Method For Pressure Transducers In Gas Delivery Systems
 - The TF discussed the following for the Document:
 - Continue with the “test method” Standard (SEMI Draft 3440) through the incorporation of IEC 61298-2:2008
 - Create a SEMI “stand-alone” Document
 - Define transducer and/or instrumentation selection based on its point in the application
 - Pursue a finalized Document for Task Force Review (potential balloting) by Fall 2015
 - The TC Chapter found the activity on Document 5816 to be continuing and granted a 1-year extension to the activity.
- Surface Mount Sandwich Component Dimensions TF
 - The TF reviewed the ballot results of Document 5595, New Standard: Guide for the Development of Dimensional Standards for “Sandwich” Surface Mount Components
 - The Document is currently in publication.
 - The TF will be disbanded after the Document is published.
- Filters and Purifiers TF
 - Update on Document 5244B, Revision to SEMI F21, Classification of Airborne Molecular Contaminant Levels in Clean Environments



- Entegris still working on updating the Document. Pall offered to help. The TF Leader will send the Draft Document to Pall and together attempt to modify it for balloting.

Attachment: SEMI Facilites and Gases Liaison Report West 2015_v1.ppt

3.5 SEMI Staff Report

James Amano (SEMI) gave the Staff Report. Of note:

- 9 ballot cycles for 2016
 - <http://www.semi.org/Standards/Ballots>
- SEMI Standards Publications
 - Total SEMI Standards in portfolio: 949
- New Requirements/Process Reminders for TC Chapter Meetings from December 2014 Regulations
 - Standards Document Development Project Period
 - Project period shall not exceed 3 years (Regs 8.3.2)
 - 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. (Regs 8.2.1)
 - If the SNARF is submitted at a TC Chapter meeting, the committee can review and approve, but the SNARF will need to be distributed for two weeks and then approved via GCS.
 - Procedures for Correcting Nonconforming Titles of Published Standards Document (PM 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.

Attachment: SEMI Staff Report (10 1 2015).ppt

4 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 2: 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 number for each balloted document is provided under each ballot review section below.

- 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

Motion: To issue revision ballots 5656B and 56567B in 2016 for adjudication at SEMICON Europa.
By / 2nd: Wilhelm Blohdorn/Jochen Ruth
Discussion: None
Vote: 5-0

5 Old Business

5.1 SNARFs due for Three-Year Review

James Amano presented the SNARFs approaching three years.

| # | TF | Title |
|------|-------------------------------------|---|
| 5325 | Precursor Specifications Task Force | New Standard: Guide For Dimethyl Dimethoxy Silane (DMDMOS) |
| 5327 | Precursor Specifications Task Force | New Standard: Guide for Monomethyl Silane |
| 5491 | Precursor Specifications Task Force | New Standard: Guide for Titanium Tetrachloride (TiCl ₄) |
| 5493 | Precursor Specifications Task Force | New Standard: Guide for Octa Methyl Cyclo Tetra Siloxane (OMCTS) |
| 5494 | Precursor Specifications Task Force | New Standard: Guide for Tetra Methyl Cyclo Tetra Siloxane (TMCTS) |

Motion: To abolish SNARFs 5325, 5327, 5491, 5493, and 5495
By / 2nd: Wilhelm Blohdorn/Jochen Ruth
Discussion: None
Vote: 5-0

6 New Business

6.1 Reapproval Ballots

- Several standards originated by the EU Liq Chem TC Chapter are due for 5-year review.
 - SEMI C67-0811: Guide for Hafnium Amides
 - SEMI C68-0811: Guide for Zirconium Amides
 - 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
 - SEMI C73-0811: Guide for Hafnium Chloride
 - SEMI C74-0811: Guide for Hafnium Tert-Butoxide
 - SEMI C75-0811: Guide for Tetrakis(Dimethylamino)Titanium
 - SEMI C76-0811: Guide for Zirconium Tert-Butoxide

Motion: To issue reapproval ballots for C67, C68, C72, C73, C74, C75, and C76.
By / 2nd: Wilhelm Blohdorn/Jochen Ruth
Discussion: None
Vote: 5-0

6.2 Technical Presentation

- ESD – ElectroStatic Discharge : A Challenge in ultra high purity fluid handling
 - Jochen Ruth addressed the committee on this topic.

Attachment: ESD Electrostatic discharge_final.pdf

7 Next Meeting and Adjournment

The next meeting is scheduled for October 26, 2016 at SEMICON Europa in Grenoble, France.

Table 8 Index of Available Attachments#1

| <i>Title</i> | <i>Title</i> |
|--|---------------------------------------|
| Required Elements March 27, 2015 | SEMI Staff Report (10 1 2015).ppt |
| 141007_GLC_Minutes_Approved | ESD Electrostatic discharge_final.pdf |
| 1510_JA_LC_LiaisonR_R0.0.ppt | |
| NA LChem Report West 2015 DLB.ppt | |
| 1510_JA_G+F_LiaisonR_r0.0.ppt | |
| SEMI Facilites and Gases Liaison Report West 2015_v1.ppt | |

#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.