

North America Liquid Chemicals Committee Meeting Summary and Minutes

N.A. Standards Spring 2013 Meetings
Tuesday, 02 April 2013, 1:00 PM – 4:00 PM PST
SEMI Headquarters in San Jose, CA

Next Committee Meeting

The next N.A. Liquid Chemicals committee meeting will be on Tuesday, July 09, 1:00 PM - 4:00 PM (PST) in the San Francisco Marriott Marquis Hotel in San Francisco, CA in conjunction with SEMICON West 2013.

Table 1 Meeting Attendees

Italics indicate virtual participants

Co-Chairs: Frank Parker (ICL), Frank Flowers (FMC)

SEMI Staff: Michael Tran

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
General Electric	Dale	Chuck	ICL	Stover	Frederick
FMC	Flowers	Frank	Mega Fluid Systems	Murai	Koh
ICL	Parker	Frank	SEMI N.A.	Tran	Michael

Table 2 Leadership Changes

There were no leadership changes.

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>
5534	Reapproval of SEMI F8-0998, Test Method for Evaluating the Sealing Capabilities of Tube Fitting Connections Made of Fluorocarbon Materials, When Subjected to Tensile Forces	Passed as balloted. Superclean.
4544E	Revision to SEMI C24-0301, Specification for n-Butyl Acetate	Passed as balloted with editorial changes.
5356B	Revision to SEMI C51-0706, Specifications and Guidelines for Xylenes with title change to: Specification for Xylene	Failed and reballoted.
5548	Revision to SEMI C36-1107, Specifications for Phosphoric Acid	Failed and reballoted

Table 4 Authorized Activities

There were no new activities.

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

<i>#</i>	<i>When</i>	<i>SC/TF/WG</i>	<i>Details</i>
5356C	Cycle 3 or 4-2013	Analytical Methods TF	Revision to SEMI C51-0706, Specifications and Guidelines for Xylenes with title change to: Specification for Xylene
5548A	Cycle 3 or 4-2013	Analytical Methods TF	Revision to SEMI C36-1107, Specifications for Phosphoric Acid

Table 6 New Action Items

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>
2013Apr#01	Michael Tran	Suggest including a web page summary to the SEMI Standards home page highlighting the differences and benefits between SEMI corporate membership and SEMI Standards Program membership.
2013Apr#02	Michael Tran	Send the updated 5 year review list with the new review assignees to documents previously assigned to Tom Hackett.
2013Apr#03	Michael Tran	Send documents to the new assigned reviewers for their five year reviews.

Table 7 Previous Meeting Actions Items

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>	<i>Status</i>
2012Oct#01	Michael Tran	Follow up with SEMI regarding Marty Burkhart's questions for the Compilation of Terms.	CLOSED
2012Oct#02	Egbert Woelk	Contact EHS with SEMI staff and prepare a presentation on the Standardization of Polarized Fittings to the EHS committee.	CLOSED
2012Oct#03	Michael Tran	Send the contact information of the Information & Control committee leaders to Tom Hackett (KMG Chemicals).	CLOSED
2012Oct#04	Michael Tran	Send the committee documents they need to revise and submit for letter ballot in Cycle 1 or 2- 2013.	CLOSED
2012Oct#05	Jean Marie-Collard	Jean Marie to form a Liquid Chemicals subcommittee.	CLOSED
2012Oct#06	Michael Tran	Check the status of the Liquid Chemicals Distribution Subcommittee and Liquid Chemicals Subcommittee in the committee organization chart.	CLOSED

1 Welcome, Reminders, and Introductions

1.1 Frank Parker (ICL) called the meeting to order at 1:00 PM PST. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

Attachment: 01, SEMI Standards Required Meeting Elements

2 Review of Previous Meeting Minutes

2.1 The committee reviewed the minutes of the previous meeting.

Motion: To approve the minutes of the previous meeting (Fall 2012).

By / 2nd: Frank Parker (ICL) / Frederick Stover (ICL)

Discussion: None.

Vote: 4-0 in favor. Motion passed.

Attachment: 02, NA Liquid Chemicals Committee meeting minutes (Fall 2012)

3 Liaison Reports

3.1 Europe Gases and Liquid Chemicals Committee

Michael Tran (SEMI N.A.) reported for the Europe Gas and Liquid Chemicals committee. Of note:

- Europe Gas and Liquid Chemicals Committee Co-chairs
 - Jean-Marie Collard (Solvay Chemicals)

- Gordan Ferrier, (Air Products)
 - The non-voting co-chair is Gummaar De Vos (FujiFilm Electronics Materials)
- Meeting Information
 - Last Meeting
 - October 10, 2012 at SEMICON Europa, Dresden, Germany
 - Next meeting
 - October 2013 at SEMICON Europa, Dresden, Germany
- Ballot Results
 - Both passed as balloted
 - Doc. #5328, New Standard: Guide for Tetrakis(Dimethylamino) Silane (TDMAS)
 - Doc. #5329, New Standard: Guide for Tris(Dimethylamino) Silane (3DMAS)
- New SNARFs
 - 5491, New Standard: Guide for Titanium Tetrachloride (TiCl₄)
 - 5492, New Standard: Guide for Ethylene Glycol *Honeywell*
 - 5493, New Standard: Guide for Octa Methyl Cyclo Tetra Siloxane (OMCTS)
 - 5494, New Standard: Guide for Tetra Methyl Cyclo Tetra Siloxane (TMCTS)
 - 5491, New Standard: Guide for Titanium Tetrachloride (TiCl₄)
 - 5492, New Standard: Guide for Ethylene Glycol Honeywell
 - 5493, New Standard: Guide for Octa Methyl Cyclo Tetra Siloxane (OMCTS)
 - 5494, New Standard: Guide for Tetra Methyl Cyclo Tetra Siloxane (TMCTS)
- Upcoming Ballots for 2013
 - Doc. #5324, New Standard: Guide for Cyclopentanone
 - Doc. #5326, New Standard: Guide for Methyl Isobutyl Carbinol (MIBC) or 4-Methyl 2-Pentanol
 - Doc. #5491, New Standard: Guide for Titanium Tetrachloride (TiCl₄)
 - Doc. #5492, New Standard: Guide for Ethylene Glycol
 - Doc. #5493, New Standard: Guide for Octa Methyl Cyclo Tetra Siloxane (OMCTS)
 - Doc. #5494, New Standard: Guide for Tetra Methyl Cyclo Tetra Siloxane (TMCTS)
 - Doc. #5495, New Standard: Guide for Cyclo Hexanone
 - Doc. #5496, Revision to SEMI XXXX-XX: Guide for Tetrakis(Dimethylamino) Silane (TDMAS)
- SEMI Europe Contact: Yann Guillou, yguillou@semi.org

Attachment: 03, Europe Gas and Liquid Chemicals Committee Report (March 2013)

3.2 Japan Liquid Chemicals Committee

3.2.1 Michael Tran (SEMI N.A.) reported for the Japan Liquid Chemicals committee. Of note:

- Japan Liquid Chemicals Committee Co-chairs
 - Hiroshi Tomita (Toshiba)
 - Kenji Sugimoto (Dainippon Screen Manufacturing)

- Meeting Information
 - Last Meeting
 - December 7, 2012 in conjunction with SEMICON Japan at Makuhari Messe, Chiba, Japan
 - Next Meeting
 - April 5, 2013 during Japan Spring Meetings 2013 at SEMI Japan, Tokyo, Japan
- Upcoming Ballots
 - Cycle 1, 2013 – to be reviewed on April 5
 - Doc. #5297, New Standard: Test Method for Particle Removal Performance of Liquid Filter Rated 20-50 nm with Liquid-Borne Particle Counter
 - Doc. #5371, New Standard: Test Method for Tensile Strength Applied to Welded Connections Made by PFA Weld Fitting
- Liquid-Borne Particle Counter Task Force
 - The Task Force is asking the particle manufacturers to indicate the uncertainty of the mass concentration of the test particle. SEMI C77-0912 would be revised according to the result.
- SEMI Japan Contact: Naoko Tejima, ntejima@semi.org

Attachment: 04, Japan Liquid Chemicals Committee Report (Spring 2013)

3.3 SEMI Staff Report

3.3.1 Michael Tran (SEMI N.A.) gave the SEMI N.A. Staff Report. The key items were as follows:

- Some Upcoming SEMI Major Events
 - SEMICON West 2013
 - July 9-11, 2013 in San Francisco, CA, USA
 - SEMICON Taiwan 2013
 - September 4-6, 2013 in Taipei
 - SEMICON Europa 2013
 - October 8-10, 2013 in Dresden, Germany
- Upcoming North America Standards Meetings
 - NA Compound Semiconductor Materials Committee in conjunction with CS MANTECH 2013
 - May 15, 2013 in New Orleans, Louisiana
 - NA Standards Meetings at SEMICON West 2013
 - July 8-11, 2013 in San Francisco, California
- Cycle 4 and 5-2013 Critical Dates for SEMI Standards Ballots
 - Cycle 4, 2013
 - Ballot Submission Date: May 20, 2013
 - Voting Period Starts: June 1, 2013
 - Voting Period Ends: July 1, 2013

- Cycle 5, 2013
 - Ballot Submission Date: July 18, 2013
 - Voting Period Starts: July 29, 2013
 - Voting Period Ends: August 28, 2013
- SEMI Standards Publications
 - Standards published from January 2013 to March 2013:
 - New Standards: 9
 - Revised Standards: 14
 - Reapproved Standards: 2
 - Withdrawn Standards: 2
 - There are a total of 871 SEMI Standards in portfolio and that includes 93 Inactive standards
- Major Items Included in the Revision to the SEMI *Regulations*
 - This revision to the *Regulations* added a new category called Complementary Files
 - Complimentary files are considered an official part of a standard or safety guideline
 - Complimentary files are NOT in PDF file format
 - Otherwise, they would be conjoined to the standard or safety guideline which are published in the PDF file format
 - They could be in any non-PDF format that is required for use with a standard or safety guideline
 - The TC Chapters decide which non-PDF files are complimentary
 - If they are not complimentary, then they are considered non-official and are categorized as *Various Materials*
 - If they are complimentary, then the files must be balloted if they are revised or added to a standard or safety guideline
 - Other Major Items
 - Global Technical Committee Structure
 - All regional and local TC become chapters and are independent regardless of whether an RSC exist in their region
 - Formation and Disbandment of Global Technical Committee
 - Formation and Disbandment of TC Chapter under existing Global Technical Committee
 - Elimination of Regional Standards
 - Intellectual Property (IP) section (§15 in the *Regulations*)
 - There is now an exit mechanism for Letter of Assurances in “limbo”
 - More clarification for Letter of Intents and the discovery of IP after a standard is published
- Major Items Included in the Revision to the SEMI *Procedure Guide*

- The *Procedure Guide* was revised to align with changes in the *Regulations*
- Added the TFOF as Appendix 2
- Addition of recommendation for author and/or the TF leader to distribute draft ballot to all TF members 7 days prior to Letter Ballot submission
- Global Activity Report
 - North America has the most TFs, SNARFs, and ballots followed by Japan and Europe
 - Please see the attached Staff Report for detailed information and other regions
- Request to Members
 - Looking for details on how standards are actually used:
 - Development/Engineering
 - Procurement
 - Manufacturing
 - Interview should take less than 30 minutes – contact James Amano (jamano@semi.org) or any Standards staff
- SEMI N.A. contact: Michael Tran, mtran@semi.org

Discussion: Frank Flowers mentioned whether companies registered as SEMI Corporate Members are also members of the SEMI Standards Program. Michael Tran explained they are independent from each other and members from companies whom are SEMI corporate members must register for the SEMI Standards Program to participate in standards meetings. Frank suggested having a webpage summary detailing the differences between SEMI corporate membership and the SEMI Standards Membership.

For the Standards usage interview, Chuck Dale recommended interviewing people who brought standards or do a short survey with 10 questions or less in 3 minutes or less.

Attachment: 05, SEMI North America Standards Staff Report (Spring 2013)

Action Item: 2013Apr#01, Michael Tran to suggest including a web page summary to the SEMI Standards home page highlighting the differences and benefits between SEMI corporate membership and SEMI Standards Program membership.

4 Ballot Review

NOTE 1: Committee adjudication on ballots is detailed in the Audits & Reviews (A&R) Subcommittee Forms for procedural review. These 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.

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
5534	Reapproval of SEMI F8-0998, Test Method for Evaluating the Sealing Capabilities of Tube Fitting Connections Made of Fluorocarbon Materials, When Subjected to Tensile Forces	Passed as balloted. Superclean.
4544E	Revision to SEMI C24-0301, Specification for n-Butyl Acetate	Passed as balloted with editorial changes.
5356B	Revision to SEMI C51-0706, Specifications and Guidelines for Xylenes with title change to: Specification for Xylene	Failed and reballoted.
5548	Revision to SEMI C36-1107, Specifications for Phosphoric Acid	Failed and reballoted

Motion: Document 5534 passed committee review as balloted and will be forwarded to the A&R for procedural review.
By / 2nd: Frank Flowers (FMC) / Frank Parker (ICL)
Discussion: None.
Vote: 4-0 in favor. Motion passed.

Attachment: 06, Procedural Review for Document #5534

Motion: Document 4544E passed committee review with editorial changes and will be forwarded to the A&R for procedural review.
By / 2nd: Frank Flowers (FMC) / Frederick Stover (ICL)
Discussion: None.
Vote: 4-0 in favor. Motion passed.

Attachment: 07, Procedural Review for Document #4544E

Motion: Document 5356B failed committee review and will be returned to the TF for rework.
By / 2nd: Frank Flowers (FMC) / Koh Murai (Mega Fluid Systems)
Discussion: None.
Vote: 4-0 in favor. Motion passed.

Attachment: 08, Procedural Review FAILED for Document #5356B

Motion: Document 5548 failed committee review and will be returned to the TF for rework.
By / 2nd: Frederick Stover (ICL) / Frank Flowers (FMC)
Discussion: Changing the Validation Data from Appendix to Related Information. See §7.1 for details.
Vote: 4-0 in favor. Motion passed.

Attachment: 09, Procedural Review FAILED for Document #5548

5 Subcommittee & Task Force Reports

5.1 Analytical Methods Task Force

5.1.1 Frank Parker (ICL) reported for the Analytical Methods Task Force. The TF assigned new reviewers for documents due for 5 year reviews previously assigned to Tom Hackett (KMG Chemicals) as follows:

<i>Designation</i>	<i>Title</i>	<i>Reviewer</i>
C18-0708	Specification for Acetic Acid	Frederick Stover
C19-0708	Specification for Acetone	Frank Flowers
C23-0708	Specifications for Buffered Oxide Etchants	Frank Parker
C44-0708	Specifications and Guidelines for Sulfuric Acid	Koh Murai

Motion: To approve the new assigned reviewers for the above documents previously assigned to Tom Hackett.

By / 2nd: Frank Parker (ICL) / Chuck Dale (General Electric)

Discussion: None.

Vote: 4-0 in favor. Motion passed.

Action Item: 2013Apr#02, Michael Tran to send the updated 5 year review list with the new review assignees to documents previously assigned to Tom Hackett.

5.2 F40 Task Force

5.2.1 Michael Tran (SEMI N.A.) reported for the F40 Task Force. Based on an email from Marty Burkhart addressed to the committee, there is still interest in the TF and the next meeting at SEMICON West 2013 should be more meaningful with more attendants hopefully.

5.3 SEMI F57 (Specification for Polymer Materials and Components Used in Ultrapure Water and Liquid Chemical Distribution Systems) Revision / ITRS Alignment Task Force

5.3.1 Michael Tran reported for the SEMI F57 Task force. Based on an email from Marty Burkhart addressed to the committee, the survey showed that the industry has some issues with commissioning liquid systems when using F57 limits. The action following the survey was to check with the raw material suppliers of PVDF and PFA to see if limits could be lowered for Calcium. Marty spoke to the PVDF suppliers and they are considering, but not yet committed, to lower Calcium to $20\mu\text{g}/\text{m}^2$ from $30\mu\text{g}/\text{m}^2$. One good idea is the TF could do it as a line item and a NOTE where they state 20 as the trial limit and upwards to 30 is still acceptable for the trial period. As soon as PFA inputs come back The TF will start the discussions as a group.

5.4 SEMI F104 (Particle Test Method Guide for Evaluation of Components Used in Ultrapure Water and Liquid Chemical Distribution Systems) Revision Task Force

5.4.1 There was no report for the Task Force as Marty Burkhart (Hi Pure Tech) could not attend the N.A. Standards Spring 2013 Meetings.

5.5 Polymer Surface Roughness Task Force

5.5.1 Michael Tran (SEMI N.A.) reported for the Polymer Surface Roughness Task Force. Based on an email from Marty Burkhart addressed to the committee, the task force has generated a survey rough draft on Contact Profilometry and they will have SEMI put it out to the industry in a few weeks.

5.6 SEMI F63 (Ultrapure Water Used in Semiconductor Processing) Revision Task Force / Ultrapure Water Filtration Efficiency Task Force

5.6.1 The committee reported for the SEMI F63 / UPW Filtration TF. Japan has issued for ballot in Cycle 1 Document 5297, New Standard: *Test Method for Particle Removal Performance of Liquid Filter Rated 20 – 50 nm with Liquid-Borne Particle Counter* which is similar in scope to the recent publish document SEMI C79-0113, *Guide to Evaluate the Efficacy of Sub-15 nm Filters Used in Ultrapure Water (UPW) Distribution Systems*. The similarity between the documents has caused a lot of debate in the past. The TF has concerns for Document 5297 and plan to submit feedback as New Business at the Japan Liquid Chemicals committee meeting where the document is adjudicated.

5.7 SEMI F31(Guide for Bulk Chemical Distribution Systems), F39 (Guideline for Chemical Blending Systems), F41 (Guide for Qualification of a Bulk Chemical Distribution System) Rewrite TF

5.7.1 There were no new activities as the Task Force is still working on SEMI F31, F39, and F41.

6 Old Business

6.1 5-Year Review Update

6.1.1 The NA Liquid Chemicals Committee updated the master 5-year review file with new Liquid Chemicals TC reviewers (see §5.1 for more details). The committee will decided whether to revise them or ballot them as reapproval documents.

Attachment: 10, NA Liquid Chemicals Master 5-Year Review Summary Spring 2013

Action Item: 2013Apr#03, Michael Tran to send documents to the new assigned reviewers for their five year reviews.

7 New Business

7.1 Preserving Historical Method Validation Data

7.1.1 The committee raised their concerns with the historical validation data in some of the Liquid Chemicals documents not being kept by SEMI and that it may be lost or revised in the future. The historical validation data was previously approved by the committee and it should not be revised in the future unless the method changes.

7.1.2 The committee also does not want the validation data to be rejected or revised in the future based on the approval dates by the A&R SC in the Appendix and Related Information notices. The committee proposed changing the approval dates in the notices from the A&R SC to the committee approval dates instead.

7.1.3 The committee will change the historical validation data in Document 5548A (see §7.2) from an Appendix to a Related Information section because Related Information is not an official part of a standard. It is only there as historical validation data for informational purposes only. Also this gives the committee greater control over the validation data because it is not an official part of a standard or safety guideline to reject revisions to the data unless there is a valid method.

7.2 Upcoming Ballots

7.2.1 The following documents were submitted for letter ballot in Cycle 3 or 4-2013.

#	When	SC/TF/WG	Details
5356C	Cycle 3 or 4-2013	Analytical Methods TF	Revision to SEMI C51-0706, Specifications and Guidelines for Xylenes with title change to: Specification for Xylene
5548A	Cycle 3 or 4-2013	Analytical Methods TF	Revision to SEMI C36-1107, Specifications for Phosphoric Acid

Motion: To re-ballot Document 5356B as 5356C for Cycle 3 or 4-2013.

By / 2nd: Frank Parker (ICL) / Frederick Stover (ICL)

Discussion: None.

Vote: 4-0 in favor. Motion passed.

Motion: To re-ballot Document 5548 as 5548A for Cycle 3 or 4-2013.

By / 2nd: Frederick Stover (ICL) / Frank Flowers (FMC)

Discussion: None.

Vote: 4-0 in favor. Motion passed.

8 Action Item Review

8.1 Open Action Items

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

8.2 New Action Items

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

9 Next Meeting and Adjournment

9.1 The next meeting of the North America Liquid Chemicals Standards Meeting is scheduled for July 8 and 9, 2013 in conjunction with SEMICON West 2013 at the San Francisco Marriott Marquis Hotel in San Francisco, California.

Tentative schedule:

- Monday, July 8*
 - F104 Rewrite TF (1:00 PM to 2:00 PM)
 - Polymer Surface Roughness TF (2:00 PM to 3:00 PM)
 - UPW Filtration TF/ F63 TF (3:00 PM to 5:00 PM)
- Tuesday, July 9*
 - F57 Discussion/ITRS Alignment (8:00 AM to 9:00 AM)
 - F39, F31 & F41 Rewrite TF (9:00 AM to 10:00 AM)
 - Analytical Methods TF (10:00 AM to 12 Noon)
 - Liquid Chemicals Committee (1:00 PM to 4:00 PM)

*All times are in PST. Times and dates are subject to change without notice.

For additional meeting details, the latest schedule, registration, and travel information, please visit <http://www.semi.org/node/45276>

9.2 Having no further business, a motion was made to adjourn the N.A. Liquid Chemicals committee meeting on April 2, 2013 in conjunction with the N.A. Standards Spring 2013 Meetings at SEMI Headquarters in San Jose, California.

Respectfully submitted by:

Michael Tran
Senior Standards Engineer
SEMI North America
Phone: 1-408-943-7019
Email: mtran@semi.org

Minutes approved by:

Frank Parker (ICL), Co-chair	May 7, 2013
Frank Flowers (FMC), Co-chair	May 7, 2013

Table 8 Index of Available Attachments #1

<i>#</i>	<i>Title</i>	<i>#</i>	<i>Title</i>
01	SEMI Standards Required Meeting Elements	06	Procedural Review for Document #5534
02	NA Liquid Chemicals Committee previous meeting minutes (Fall 2012)	07	Procedural Review for Document #4544E
03	Europe Gas and Liquid Chemicals Committee Report (March 2013)	08	Procedural Review FAILED for Document #5356B
04	Japan Liquid Chemicals Committee Report (Spring 2013)	09	Procedural Review FAILED for Document #5548
05	SEMI North America Standards Staff Report (Spring 2013)	10	N.A. Liquid Chemicals Master 5-Year Review Summary Spring 2013

#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 Michael Tran at the contact information above.