

North America Liquid Chemicals Committee Meeting Summary and Minutes

N.A. Standards SEMICON West 2013 Meetings
Tuesday, 09 July 2013, 1:00 PM – 4:00 PM PST
San Francisco Marriott Marquis Hotel in San Francisco, California

Next Committee Meeting

The next N.A. Liquid Chemicals committee meeting is to be determined. Meeting details when available will be posted at the SEMI Standards Calendar of Events: <http://www.semi.org/en/Standards/CalendarEvents>

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>
Air Liquide	Milstein	Lisa	ICL	Stover	Frederick
Air Liquide	Libman	Slava	ICL	Parker	Frank
Air Products	McDermott	Wayne	Mega Fluid Systems	Murai	Koh
FMC	Flowers	Frank	Mega Fluid Systems	Kandiyeli	David
FMT	Blackford	David	Solvay	Terracina	Vincent
General Electric	Dale	Chuck	SEMI N.A.	Tran	Michael

Table 2 Leadership Changes

<i>Group</i>	<i>Previous Leader</i>	<i>New Leader</i>
SEMI IX Resin TF (New Task Force)		Slava Libman (Air Liquide)
F104 Rewrite TF (Disband)	Marty Burkhart (Hi Pure Tech)	

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>
5356C	Revision of SEMI C51-0706, Specifications and Guidelines for Xylenes with title change to: Specification for Xylene	Passed as balloted. Superclean.
5548A	Revision to SEMI C36-1107, Specifications for Phosphoric Acid	Passed as balloted. Superclean.

Table 4 Authorized Activities

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
---	TFOF	New Task Force	SEMI IX Resin TF
5621	SNARF	SEMI IX Resin TF	New Standard: Test Method for Determining Ion Exchange Resin Contamination Contribution in High Purity Applications
5622	SNARF	F57 Revision Task Force	Line Item Revision to SEMI F57-0312, Specification for Polymer Materials and Components Used in Ultrapure Water and Liquid Chemical Distribution Systems
---	SNARF	Analytical Methods TF	Revision to SEMI C18-0708, Specification for Acetic Acid <i>Note: SNARF will be submitted after the committee meeting to the Liquid Chemicals GCS for approval</i>

Table 4 Authorized Activities

#	Type	SC/TF/WG	Details
---	SNARF	Analytical Methods TF	Revision to SEMI C19-0708, Specification for Acetone <i>Note: SNARF will be submitted after the committee meeting to the Liquid Chemicals GCS for approval</i>
---	SNARF	Analytical Methods TF	Revision to SEMI C23-0708, Specifications for Buffered Oxide Etchants <i>Note: SNARF will be submitted after the committee meeting to the Liquid Chemicals GCS for approval</i>
---	SNARF	Analytical Methods TF	Revision to SEMI C35-0708, Specifications and Guideline for Nitric Acid with title change to: Specification for Nitric Acid <i>Note: SNARF will be submitted after the committee meeting to the Liquid Chemicals GCS for approval</i>
---	SNARF	Analytical Methods TF	Revision to SEMI C44-0708, Specifications and Guidelines for Sulfuric Acid with title change to: Specification for Sulfuric Acid <i>Note: SNARF will be submitted after the committee meeting to the Liquid Chemicals GCS for approval</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

Listing of documents approved by the committee for letter ballot.

#	When	SC/TF/WG	Details
5622	Cycle 5 or 6-2013	F57 Revision Task Force	Line Item Revision to SEMI F57-0312, Specification for Polymer Materials and Components Used in Ultrapure Water and Liquid Chemical Distribution Systems
---	Cycle 5 or 6-2013	Analytical Methods TF	Revision to SEMI C18-0708, Specification for Acetic Acid
---	Cycle 5 or 6-2013	Analytical Methods TF	Revision to SEMI C19-0708, Specification for Acetone
---	Cycle 5 or 6-2013	Analytical Methods TF	Revision to SEMI C23-0708, Specifications for Buffered Oxide Etchants
---	Cycle 5 or 6-2013	Analytical Methods TF	Revision to SEMI C35-0708, Specifications and Guideline for Nitric Acid with title change to: Specification for Nitric Acid
---	Cycle 5 or 6-2013	Analytical Methods TF	Revision to SEMI C44-0708, Specifications and Guidelines for Sulfuric Acid with title change to: Specification for Sulfuric Acid <i>Note: Document will be submitted for ballot in Cycle 5 or 6-2013 to the Liquid Chemicals GCS for approval</i>

Table 6 New Action Items

Item #	Assigned to	Details
2013Jul#01	Michael Tran	Draft SNARFs for the committee for the five year reviews.
2013Jul#02	Michael Tran	Send SEMI C64 (Statistical Guidelines for Ship To Control) to Koh Murai.
2013Jul#03	Michael Tran	Send SEMI C63 (Organosilicate Precursors Used In Low K CVD Processes) to Wayne McDermott for 5 year review.
2013Jul#04	Michael Tran	Coordinate dates and time for the next NA Liquid Chemicals meeting for Fall 2013.
2013Jul#05	Michael Tran	Distribute to the committee the list of updated 5 year review Documents.

Table 7 Previous Meeting Actions Items

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>	<i>Status</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.	CLOSED
2013Apr#02	Michael Tran	Send the updated 5 year review list with the new review assignees to documents previously assigned to Tom Hackett.	CLOSED
2013Apr#03	Michael Tran	Send documents to the new assigned reviewers for their five year reviews.	CLOSED

1 Welcome, Reminders, and Introductions

1.1 Frank Parker (ICL) called the meeting to order at 1:03 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 as written.

By / 2nd: Frank Parker (ICL) / Frank Flowers (FMC)

Discussion: None.

Vote: 5-0 in favor. Motion passed.

Attachment: 02, NA Liquid Chemicals Committee meeting minutes (Spring 2013)

3 Liaison Reports

3.1 *Europe Gases and Liquid Chemicals Committee*

3.1.1 There was no report received.

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) stepped down as co-chair
 - Hiroyuki Araki (Dainippon Screen Manufacturing) was appointed as co-chair
- Meeting Information
 - Last Meeting
 - April 5, 2013 during Japan Spring Meetings 2013 at SEMI Japan, Tokyo, Japan
 - Next Meeting
 - July 22, 2013 during Japan Summer Meetings 2013 at SEMI Japan, Tokyo, Japan
- Document Review Summary

- Cycle 1, 2013
 - Doc. #5297, New Standard: Test Method for Particle Removal Performance of Liquid Filter Rated 20-50 nm with Liquid-Borne Particle Counter
 - Passed as balloted with editorial changes
 - Doc. #5371, New Standard: Test Method for Tensile Strength Applied to Welded Connections Made by PFA Weld Fitting
 - Passed as balloted
- SEMI Japan Contact: Chie Yanagisawa, cyanagisawa @semi.org

Attachment: 03, 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 Taiwan 2013 / LED Taiwan 2013
 - September 4-6, 2013 in Taipei
 - SEMICON Europa 2013 / Plastic Electronics Exhibition and Conference
 - October 8-10, 2013 Dresden, Germany
 - SEMICON Japan 2013
 - December 4-6, 2013 in Chiba
- Upcoming North America Standards Meeting
 - NA Standards Fall 2013 Meetings
 - October 28-31, 2013 in San Jose and Santa Clara, California
 - Inviting local companies willing and able to host some of the meetings to maintain one-week format
- Cycle 6-2013 Critical Dates for SEMI Standards Ballots
 - Cycle 6, 2013
 - Ballot Submission Date: August 15, 2013
 - Voting Period Starts: August 29, 2013
 - Voting Period Ends: September 30, 2013
- SEMI Standards Publications
 - Standards published from April 2013 to June 2013:
 - New Standards: 16
 - Revised Standards: 11
 - Reapproved Standards: 15
 - Withdrawn Standards: 0
 - There are a total of 887 SEMI Standards in portfolio and that includes 94 Inactive standards
- SEMI N.A. Standards staff contact: Michael Tran, mtran@semi.org

Attachment: 04, SEMI North America Standards Staff Report (Spring 2013)

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>
5356C	Revision of SEMI C51-0706, Specifications and Guidelines for Xylenes with title change to: Specification for Xylene	Passed as balloted. Superclean.
5548A	Revision to SEMI C36-1107, Specifications for Phosphoric Acid	Passed as balloted. Superclean.

Motion: Document 5356C passed committee review as balloted and will be forwarded to the A&R for procedural review.

By / 2nd: Frederick Stover (ICL) / Koh Murai (Mega Fluid Systems)

Discussion: None.

Vote: 7-0 in favor. Motion passed.

Attachment: 05, Procedural Review for Document #5356C

Motion: Document 5548A passed committee review as balloted and will be forwarded to the A&R for procedural review.

By / 2nd: Frederick Stover (ICL) / Chuck Dale (General Electric)

Discussion: None.

Vote: 7-0 in favor. Motion passed.

Attachment: 06, Procedural Review for Document #5548A

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 is currently revising documents due for five-year review and will ballot them for Cycle 6-2013:

- Revision to SEMI C18-0708, Specification for Acetic Acid
- Revision to SEMI C19-0708, Specification for Acetone
- Revision to SEMI C23-0708, Specifications for Buffered Oxide Etchants
- Revision to SEMI C35-0708, Specifications and Guideline for Nitric Acid with title change to: Specification for Nitric Acid
- Revision to SEMI C44-0708, Specifications and Guidelines for Sulfuric Acid with title change to: Specification for Sulfuric Acid

5.2 F40 (Preparing Liquid Chemical Distribution Components for Chemical Testing) Rewrite Task Force

5.2.1 Marty Burkhart (Hi Pure Tech) reported for the F40 Task Force. Attendance in the task force has been low so the activities in the task force will be postponed. SEMI F40 has to be supported otherwise it could have an impact other standards such as SEMI F57.

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 Marty Burkhardt (Hi Pure Tech) reported for the SEMI F57 Task Force. The current calcium level in SEMI F57 has the highest risk factor to the wafer developed by the ITRS. The TF submitted a line item SNARF to revise the calcium levels in SEMI F57 from 30 $\mu\text{g}/\text{m}^2$ to 20 $\mu\text{g}/\text{m}^2$.

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 The TF is disbanded.

Motion: To disband the F104 Task Force.
By / 2nd: Frederick Stover (ICL) / Marty Burkhardt (Hi Pure Tech)
Discussion: None.
Vote: 8-0 in favor. Motion passed.

5.5 Polymer Surface Roughness Task Force

5.5.1 Marty Burkhardt (Hi Pure Tech) reported for the Polymer Surface Roughness Task Force. The survey on Contact Profilometry (CP) was sent to interested parties a few months ago. Only two respondents from manufacturers used CP. The TF will go ahead with an activity for polysurface roughness for CP to be used in the production environment.

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

5.6.1 Slava Libman (Air Liquide) reported for the SEMI F63 / UPW Filtration TF / IX Resin TF Discussion. Of note:

- SEMI F63 (Guide for UPW) was published earlier this year and the TF will review it again
 - Expect a Revision to SEMI F63 SNARF next year
- SEMI IX (Ion Exchange) Resin TF Discussion
 - Proposed TF to deal with contamination from Ion Exchange Resin used in UPW piping
 - The TFOF and SNARF for a new IX Resin contamination document were approved by the committee
- The UPW TF is concerned with overlapping activities from the Japan Liquid Filters TF with SEMI C79
 - SEMI C79, Guide to Evaluate the Efficacy of Sub-15 nm Filters Used in Ultrapure Water (UPW) Distribution Systems
- The TF does not want activities to share the same range as SEMI C79 of sub-15 nm as this might create a potential conflict of two similar standards
- The TF leader, Slava Libman, asked to be included in emails of the activities of the Liquid Filters TF

Attachment: 07, SEMI IX Resin TF Introduction

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 Koh Murai (Mega Fluid Systems) reported for the Task force. SEMI F31 was revised and published in March 2013. The TF is still revising SEMI F39 and might include an Appendix on statistical analysis based on SEMI C64 (Statistics for Ship to Control) rather than rewriting statistics for SEMI F39. SEMI F41 will be revised with SEMI F39.

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).

Attachment: 08, NA Liquid Chemicals Master 5-Year Review Summary West 2013

7 New Business

7.1 New Task Force

#	Type	SC/TF/WG	Details
---	TFOF	New Task Force	SEMI IX Resin TF

Motion: To approve the TFOF and formation of the SEMI IX Resin TF.

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

Discussion: None.

Vote: 8-0 in favor. Motion passed.

7.2 New SNARFs

7.2.1 The following SNARFs were approved by the committee:

#	Type	SC/TF/WG	Details
5621	SNARF	SEMI IX Resin TF	New Standard: Test Method for Determining Ion Exchange Resin Contamination Contribution in High Purity Applications
5622	SNARF	F57 Revision Task Force	Line Item Revision to SEMI F57-0312, Specification for Polymer Materials and Components Used in Ultrapure Water and Liquid Chemical Distribution Systems

Motion: To approve the SNARF for Document 5621.

By / 2nd: Frank Parker (ICL) / Koh Murai (Mega Fluid Systems)

Discussion: None.

Vote: 8-0 in favor. Motion passed.

Motion: To approve the SNARF for Document 5622.

By / 2nd: Marty Burkhart (Hi Pure Tech) / Slava Libman (Air Liquide)

Discussion: None.

Vote: 8-0 in favor. Motion passed.

7.2.2 The committee will draft SNARFs after the committee meeting and submit them to the Liquids Chemicals Global Coordinating Subcommittee for approval:

#	Type	SC/TF/WG	Details
---	SNARF	Analytical Methods TF	Revision to SEMI C18-0708, Specification for Acetic Acid <i>Note: SNARF will be submitted after the committee meeting to the Liquid Chemicals GCS for approval</i>
---	SNARF	Analytical Methods TF	Revision to SEMI C19-0708, Specification for Acetone <i>Note: SNARF will be submitted after the committee meeting to the Liquid Chemicals GCS for approval</i>
---	SNARF	Analytical Methods TF	Revision to SEMI C23-0708, Specifications for Buffered Oxide Etchants <i>Note: SNARF will be submitted after the committee meeting to the Liquid Chemicals GCS for approval</i>
---	SNARF	Analytical Methods TF	Revision to SEMI C35-0708, Specifications and Guideline for Nitric Acid with title change to: Specification for Nitric Acid <i>Note: SNARF will be submitted after the committee meeting to the Liquid Chemicals GCS for approval</i>
---	SNARF	Analytical Methods TF	Revision to SEMI C44-0708, Specifications and Guidelines for Sulfuric Acid with title change to: Specification for Sulfuric Acid <i>Note: SNARF will be submitted after the committee meeting to the Liquid Chemicals GCS for approval</i>

7.3 New Upcoming Ballots

7.3.1 The following documents were submitted for letter ballot in Cycle 5 or 6-2013:

#	When	SC/TF/WG	Details
5622	Cycle 5 or 6-2013	F57 Revision Task Force	Line Item Revision to SEMI F57-0312, Specification for Polymer Materials and Components Used in Ultrapure Water and Liquid Chemical Distribution Systems

Motion: To ballot Document 5622 for Cycle 5 or 6-2013.

By / 2nd: Marty Burkhardt (Hi Pure Tech) / Slava Libman (Air Liquide)

Discussion: None.

Vote: 8-0 in favor. Motion passed.

#	When	SC/TF/WG	Details
---	Cycle 5 or 6-2013	Analytical Methods TF	Revision to SEMI C18-0708, Specification for Acetic Acid
---	Cycle 5 or 6-2013	Analytical Methods TF	Revision to SEMI C19-0708, Specification for Acetone
---	Cycle 5 or 6-2013	Analytical Methods TF	Revision to SEMI C23-0708, Specifications for Buffered Oxide Etchants
---	Cycle 5 or 6-2013	Analytical Methods TF	Revision to SEMI C35-0708, Specifications and Guideline for Nitric Acid with title change to: Specification for Nitric Acid

Motion: To ballot the above documents (C18, C19, C23, and C35) for Cycle 5 or 6-2013.
By / 2nd: Frederick Stover (ICL) / Chuck Dale (General Electric)
Discussion: None.
Vote: 8-0 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 N.A. Liquid Chemicals committee meeting is to be determined. Meeting details when available will be posted at the SEMI Standards Calendar of Events: <http://www.semi.org/en/Standards/CalendarEvents>

9.2 Having no further business, a motion was made to adjourn the N.A. Liquid Chemicals committee meeting on July 9, 2013 in conjunction with the N.A. Standards SEMICON West 2013 Meetings at the San Francisco Marriott Marquis Hotel in San Francisco, 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	August 16, 2013
Frank Flowers (FMC), Co-chair	

Table 8 Index of Available Attachments #1

#	Title	#	Title
01	SEMI Standards Required Meeting Elements	05	Procedural Review for Document #5356C
02	NA Liquid Chemicals Committee previous meeting minutes (Spring 2013)	06	Procedural Review for Document #5548A
03	Japan Liquid Chemicals Committee Report (Spring 2013)	07	SEMI IX TF Introduction
04	SEMI North America Standards Staff Report (West 2013)	08	N.A. Liquid Chemicals Master 5-Year Review Summary West 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.