

## North America Liquid Chemicals Committee Meeting Summary and Minutes

N.A. Standards Liquid Chemicals 2013 Meetings  
Tuesday, 05 November 2013, 3:30 PM – 5:30 PM PST  
SEMI Headquarters in San Jose, California

### Next Committee Meeting

The next N.A. Liquid Chemicals Standards Meetings are scheduled in conjunction with the NA Standards Spring 2014 Meetings at SEMI Headquarters in San Jose, California. Meeting details and schedules when available will be posted at <http://www.semi.org/node/47781>

### 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>
FMC	Flowers	Frank	Mega Fluid Systems	Murai	Koh
General Electric	Dale	Chuck			
Hi Pure Tech	Burkhart	Marty	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>
5622	Line Item Revision to SEMI F57-0312, Specification for Polymer Materials and Components Used in Ultrapure Water and Liquid Chemical Distribution Systems	
Line Item 1	Revision to Table 4, Surface Extractable Metallic Contamination Requirements	<b>Passed</b> as balloted Superclean
5639	Revision to SEMI C19-0708, Specification for Acetone	<b>Passed</b> as balloted Superclean
5638	Revision to SEMI C18-0708, Specification for Acetic Acid	<b>Failed</b> committee review
5640	Revision to SEMI C23-0708, Specifications for Buffered Oxide Etchants	<b>Failed</b> committee review
5642	Revision to SEMI C35-0708, Specifications and Guideline for Nitric Acid with title change to: Specification and Guide for Nitric Acid	<b>Failed</b> committee review
5643	Revision to SEMI C44-0708, Specifications and Guidelines for Sulfuric Acid with title change to: Specification and Guide for Sulfuric Acid	<b>Passed</b> as balloted with editorial changes

### Table 4 Authorized Activities

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
5675	SNARF	Determining Roughness of Polymer Surfaces Task Force	New Standard: Test Method for Determining Roughness Of Polymer Surfaces Used In Ultrapure Water and Liquid Chemical Distribution Systems By Contact Profilometry

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
5675	Cycle 2, 2014	Determining Roughness of Polymer Surfaces Task Force	New Standard: Test Method for Determining Roughness Of Polymer Surfaces Used In Ultrapure Water and Liquid Chemical Distribution Systems By Contact Profilometry
5638A	Cycle 1 or 2, 2014	Analytical Methods TF	Revision to SEMI C18-0708, Specification for Acetic Acid
5640A	Cycle 1 or 2, 2014	Analytical Methods TF	Revision to SEMI C23-0708, Specifications for Buffered Oxide Etchants
5528	Cycle 1 or 2, 2014	SEMI F31, F39, F41 Review TF	Revision to SEMI F39-0699, Guideline for Chemical Blending Systems with title change to: Guide for Chemical Blending Systems
5642A	Cycle 1 or 2, 2014	Analytical Methods TF	Revision to SEMI C35-0708, Specifications and Guideline for Nitric Acid with title change to: Specification and Guide for Nitric Acid

**Table 6 New Action Items**

Item #	Assigned to	Details
2013Oct#01	NA Liquid Chemicals committee	Arrange a teleconference with the Japan Liquid Filters TF to discuss Document 5421 from Japan (Test Method for Particle Removal Performance of Liquid Filter Rated Below 30 nm with ICP-MS)

**Table 7 Previous Meeting Actions Items**

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

## 1 Welcome, Reminders, and Introductions

1.1 Frank Flowers (FMC) called the meeting to order at 3:33 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 / 2<sup>nd</sup>:** Koh Murai (Mega Fluid Systems) / Chuck Dale (General Electric)

**Discussion:** None.

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

**Attachment:** 02, NA Liquid Chemicals Committee meeting minutes (West 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
    - October 11, 2013 during Japan Fall Meetings 2013 at SEMI Japan, Tokyo, Japan
  - Next Meeting
    - December 3, 2013 during Japan Winter Meetings in conjunction with SEMICON Japan 2013 at SEMI Japan, Tokyo, Japan
- Document Review Summary
  - Cycle 1, 2013
    - Doc. #5421, New Standard: Test Method for Particle Removal Performance of Liquid Filter Rated Below 30 nm with ICP-MS
      - Failed committee review and returned to the TF rework
- Liquid Filter (LF) Task Force
  - Doc. 5421, New Standard: Test Method for Particle Removal Performance of Liquid Filter Rated Below 30 nm with ICP-MS
    - Balloted for Cycle 6-2013 and reviewed at Japan Liquid Chemicals Committee meeting on October 11.
    - Failed and is returned to the TF for re-work.
  - The TF discussed the NA UPW TF's concern with overlapping activities between SEMI C79 (Sub-15 nm Filters Used in UPW) and Doc. 5421
    - There might be some difference between NA side and JA side regarding the recognition which documents were discussed in 2012.
    - The teleconference would be arranged between NA UPW TF and JA LF TF in order to adjust the different recognitions if necessary.
- SEMI Japan Contact: Chie Yanagisawa, cyanagisawa @semi.org

**Attachment:** 03, Japan Liquid Chemicals Committee Report (Fall 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:

- SEMI Major Events in 2013
  - Completed:
    - SEMICON Europa in conjunction with Plastic Electronics Exhibition 2013
      - October 8-10, 2013 in Dresden, Germany
    - Strategic Materials Conference
      - October 16-17, 2013 in Santa Clara, California
  - PV Taiwan 2013
    - October 30-November 1, 2013 in Taipei
  - SEMICON Japan
    - December 4-6, 2013 in Chiba
- SEMI Major Events in 2014
- European 3D TSV Summit
  - January 21-22, 2014 in Grenoble, France
- SEMICON Korea / LED Korea
  - February 12-14, 2014 in Seoul
- SEMICON China
  - March 18-20, 2014 in Shanghai
- SEMICON Singapore
  - April 23-25, 2014 in Marina Bay Sands
- SEMICON West
  - July 8-10, 2014 in San Francisco, California
- SEMI Standards Publications
  - Standards published from July 2013 to September 2013:
    - New Standards: 5
    - Revised Standards: 19
    - Reapproved Standards: 9
    - Withdrawn Standards: 0
  - There are a total of 892 SEMI Standards in portfolio and that includes 98 Inactive standards
- New Cycle 8 Voting Period (tentative)
  - Cycle 8, 2013
    - Ballot Submission Date: Nov 15, 2013
    - Voting Period Starts: Nov 29, 2013
    - Voting Period Ends: Dec 31, 2013

- Upcoming North America Standards Meetings in 2014
  - NA Liquid Chemicals Fall 2013 Meetings
    - November 5, 2013, SEMI HQ in San Jose
  - NA Compounds Semiconductor Materials Committee Fall 2013 Meeting
    - November 15, 2013 - Teleconference & Web Meeting Only
  - NA Standards Spring 2014 Meetings
    - March 31 – April 3, 2014 at SEMI HQ in San Jose, California
- Standards Usage Interview
  - 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](mailto:jamano@semi.org))
- Official SEMI Standards Groups
  - LinkedIn
    - <http://www.linkedin.com/groups/Official-SEMI-Standards-Group-1774298/about>
  - Twitter
    - @SEMI\_standard
- SEMI N.A. Standards staff contact: Michael Tran, [mtran@semi.org](mailto:mtran@semi.org)

**Attachment:** 04, SEMI North America Standards Staff Report (Fall 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>
5622	Line Item Revision to SEMI F57-0312, Specification for Polymer Materials and Components Used in Ultrapure Water and Liquid Chemical Distribution Systems	
Line Item 1	Revision to Table 4, Surface Extractable Metallic Contamination Requirements	<b>Passed</b> as balloted Superclean
5639	Revision to SEMI C19-0708, Specification for Acetone	<b>Passed</b> as balloted Superclean
5638	Revision to SEMI C18-0708, Specification for Acetic Acid	<b>Failed</b> committee review
5640	Revision to SEMI C23-0708, Specifications for Buffered Oxide Etchants	<b>Failed</b> committee review
5642	Revision to SEMI C35-0708, Specifications and Guideline for Nitric Acid with title change to: Specification and Guide for Nitric Acid	<b>Failed</b> committee review
5643	Revision to SEMI C44-0708, Specifications and Guidelines for Sulfuric Acid with title change to: Specification and Guide for Sulfuric Acid	<b>Passed</b> as balloted with editorial changes

**Motion:** Document 5622 - Line Item 1 passed committee review as balloted and will be forwarded to the A&R for

procedural review.

**By / 2<sup>nd</sup>:** Marty Burkhart (Hi Pure Tech) / Koh Murai (Mega Fluid Systems)

**Discussion:** None.

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

**Attachment:** 05, Procedural Review for Document #5622

**Motion:** Document 5639 passed committee review as balloted and will be forwarded to the A&R for procedural review.

**By / 2<sup>nd</sup>:** Chuck Dale (General Electric) / Marty Burkhart (Hi Pure Tech)

**Discussion:** None.

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

**Attachment:** 06, Procedural Review for Document #5639

**Motion:** Document 5638 failed committee review and will be returned to the TF for rework.

**By / 2<sup>nd</sup>:** Marty Burkhart (Hi Pure Tech) / Koh Murai (Mega Fluid Systems)

**Discussion:** None.

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

**Attachment:** 07, Ballot Summary for Document #5638

**Motion:** Document 5640 failed committee review and will be returned to the TF for rework.

**By / 2<sup>nd</sup>:** Chuck Dale (General Electric) / Marty Burkhart (Hi Pure Tech)

**Discussion:** None.

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

**Attachment:** 08, Ballot Summary for Document #5640

**Motion:** Document 5642 failed committee review and will be returned to the TF for rework.

**By / 2<sup>nd</sup>:** Chuck Dale (General Electric) / Koh Murai (Mega Fluid Systems)

**Discussion:** None.

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

**Attachment:** 09, Ballot Summary for Document #5642

**Motion:** Document 5643 passed committee review with editorial changes and will be forwarded to the A&R for procedural review.

**By / 2<sup>nd</sup>:** Marty Burkhart (Hi Pure Tech) / Chuck Dale (General Electric)

**Discussion:** None.

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

**Attachment:** 10, Procedural Review for Document #5643

## 5 Subcommittee & Task Force Reports

### 5.1 Analytical Methods Task Force

5.1.1 Frank Flowers (FMC) reported for the TF. The TF will revise the following documents which failed the committee review ( see § 4 of these minutes for details) and ballot them for Cycle 1 or 2, 2014:

- #5638A, Revision to SEMI C18-0708, Specification for Acetic Acid
- #5640A, Revision to SEMI C23-0708, Specifications for Buffered Oxide Etchants
- #5642A, Revision to SEMI C35-0708, Specifications and Guideline for Nitric Acid with title change to: Specification and Guide for Nitric Acid

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

5.2.1 Marty Burkhart (Hi Pure Tech) reported for the SEMI F57 Task Force. The TF reviewed the ballot results of Document 5622 (Line Item Revision to SEMI F57-0312) and it passed committee review (see §4 of these minutes for details). The TF will look at the requirements and the components next in SEMI F57.

### 5.3 Polymer Surface Roughness Task Force

5.3.1 Marty Burkhart (Hi Pure Tech) reported for the Polymer Surface Roughness Task Force. The TF discussed Draft Document 5675, New Standard: *Test Method for Determining Roughness of Polymer Surfaces Used In Ultrapure Water and Liquid Chemical Distribution Systems By Contact Profilometry*. The document draft is 90% done and plans to ballot in Cycle 2, 2014. The TF also discussed additional sampling routines to the document.

### 5.4 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

5.4.1 Koh Murai (Mega Fluid Systems) reported for the Task force. SEMI F31 was revised and published in March 2013. The TF is 90% complete with the SEMI F39 rewrite draft (doc. 5528) as the statistical analysis in the document is done. The revision to SEMI F41 will begin after Doc. 5528 (Revision to SEMI F39) is balloted in Cycle 1 or 2, 2014.

### 5.5 SEMI F63 (*Ultrapure Water Used in Semiconductor Processing*) Revision Task Force

5.5.1 The committee reported for the TF. SEMI F63 was published earlier this year and there are currently no activities other than collecting inputs from people.

### 5.6 Ultrapure Water Filtration Efficiency Task Force

5.6.1 The committee reported for the TF. The TF reviewed Document 5421 from Japan (*Test Method for Particle Removal Performance of Liquid Filter Rated Below 30 nm with ICP-MS*) as well as the comments/negatives submitted for ballot 5421.

### 5.7 IX Resin Task Force Discussion

5.7.1 The committee reported for the IX Resin TF. Of note:

- Background: The industry is concerned with UPW contamination arising from the IX resin used in piping for UPW advanced facilities
- Contamination includes 10 nm particles and critical organics
- The TF goal is to develop a Guide for consistent particle testing from the resin used for UPW

- The validation testing started in November and the document (#5621, Determining IX Resin Contamination) should be completed by December 2013 and ready for ballot in Cycle 1 or 2, 2014

**Attachment:** 11, SEMI IX Resin TF Report (Fall 2013)

## 6 Old Business

### 6.1 5-Year Review Update

6.1.1 The NA Liquid Chemicals Committee reviewed and updated the master 5-year review documents file.

**Attachment:** 12, NA Liquid Chemicals Master 5-Year Review Summary Fall 2013

## 7 New Business

### 7.1 New SNARFs

7.1.1 The following SNARFs were approved by the committee:

#	Type	SC/TF/WG	Details
5675	SNARF	Determining Roughness of Polymer Surfaces Task Force	New Standard: Test Method for Determining Roughness Of Polymer Surfaces Used In Ultrapure Water and Liquid Chemical Distribution Systems By Contact Profilometry

**Motion:** To approve the SNARF #5675

**By / 2<sup>nd</sup>:** Marty Burkhart (Hi Pure Tech) / Chuck Dale (General Electric)

**Discussion:** None.

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

### 7.2 New Ballots Authorizations

7.2.1 The following documents were submitted for letter ballot in Cycle 1 or 2-2014:

#	When	SC/TF/WG	Details
5675	Cycle 2, 2014	Determining Roughness of Polymer Surfaces Task Force	New Standard: Test Method for Determining Roughness Of Polymer Surfaces Used In Ultrapure Water and Liquid Chemical Distribution Systems By Contact Profilometry
5638A	Cycle 1 or 2, 2014	Analytical Methods TF	Revision to SEMI C18-0708, Specification for Acetic Acid
5640A	Cycle 1 or 2, 2014	Analytical Methods TF	Revision to SEMI C23-0708, Specifications for Buffered Oxide Etchants
5528	Cycle 1 or 2, 2014	SEMI F31, F39, F41 Review TF	Revision to SEMI F39-0699, Guideline for Chemical Blending Systems with title change to: Guide for Chemical Blending Systems
5642A	Cycle 1 or 2, 2014	Analytical Methods TF	Revision to SEMI C35-0708, Specifications and Guideline for Nitric Acid with title change to: Specification and Guide for Nitric Acid

**Motion:** To approve letter ballot of Document 5675.

**By / 2<sup>nd</sup>:** Marty Burkhart (Hi Pure Tech) / Chuck Dale (General Electric)

**Discussion:** None.  
**Vote:** 3-0 in favor. Motion passed.

**Motion:** To approve letter ballot of Document 5638A.  
**By / 2<sup>nd</sup>:** Frank Flowers (FMC) / Marty Burkhardt (Hi Pure Tech)  
**Discussion:** None.  
**Vote:** 3-0 in favor. Motion passed.

**Motion:** To approve letter ballot of Document 5640A.  
**By / 2<sup>nd</sup>:** Frank Flowers (FMC) / Marty Burkhardt (Hi Pure Tech)  
**Discussion:** None.  
**Vote:** 3-0 in favor. Motion passed.

**Motion:** To approve letter ballot of Document 5528.  
**By / 2<sup>nd</sup>:** Marty Burkhardt (Hi Pure Tech) / Chuck Dale (General Electric)  
**Discussion:** None.  
**Vote:** 3-0 in favor. Motion passed.

**Motion:** To approve letter ballot of Document 5642A.  
**By / 2<sup>nd</sup>:** Frank Flowers (FMC) / Marty Burkhardt (Hi Pure Tech)  
**Discussion:** None.  
**Vote:** 3-0 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

The next N.A. Liquid Chemicals standards meetings are tentatively scheduled for March 31 – April 1, 2014 at SEMI Headquarters in San Jose, California in conjunction with the NA Standards Spring 2014 meetings. Exact meeting dates and details will be announced when finalized and will be available at: <http://www.semi.org/node/47781>

Having no further business, a motion was made to adjourn the N.A. Liquid Chemicals committee meeting on November 05, 2013 in conjunction with the N.A. Standards Liquid Chemicals Fall 2013 Meetings at SEMI Headquarters in San Jose, California.

# **Tentative Schedule:**

## **Monday, March 31\***

- Polymer Surface Roughness TF (1:00 PM to 2:00 PM)
- SEMI IX Resin TF (2:00 PM to 3:00 PM)
- UPW Filtration TF/ F63 TF (3:00 PM to 5:00 PM)

## **Tuesday, April 01\***

- 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 meeting details, registration, the latest schedule, and travel information please visit

<http://www.semi.org/node/47781>

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	January 2, 2014
Frank Flowers (FMC), Co-chair	

**Table 8 Index of Available Attachments #1**

#	Title	#	Title
01	SEMI Standards Required Meeting Elements	07	Ballot Summary for Document #5638
02	NA Liquid Chemicals Committee previous meeting minutes (West 2013)	08	Ballot Summary for Document #5640
03	Japan Liquid Chemicals Committee Report (Fall 2013)	09	Ballot Summary for Document #5642
04	SEMI North America Standards Staff Report (Fall 2013)	10	Procedural Review for Document #5643
05	Procedural Review for Document #5622	11	SEMI IX Resin TF Report (Fall 2013)
06	Procedural Review for Document #5639	12	NA Liquid Chemicals Master 5-Year Review Summary Fall 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](http://www.semi.org). For additional information or to obtain individual attachments, please contact Michael Tran at the contact information above.