



STANDARDS NEW ACTIVITY REPORT FORM (SNARF)

Date Prepared: 07/01/2019 Revised (if Applicable): 11/15/2021

SNARF for: New Standard: Guide to Meet IRDS Yield Table Recommendations for High Purity Polymer Materials and Components Used in Ultrapure Water ~~and Liquid Chemical Distribution Systems~~

Originating Global Technical Committee: Liquid Chemicals

Originating TC Chapter: North America

Task Force (TF) in which work is to be carried out: High Purity Polymer Materials and Components Task Force

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Refer to *Procedure Manual* § 2.2.4 for more information on properly filling out the SNARF.

1. Rationale:

a: Describe the need or problem addressed by this activity.

(Indicate the customer, what benefits they will receive, and if possible, quantify the impact on the return on investment [ROI] if the Document is implemented.)

Current SEMI specifications are based on the quality of commercially available polymer materials and components used in manufacturing high purity systems. With the new IRDS in place with new target contamination requirements it becomes clear that there needs to be a "roadmap" defining what the quality of high purity components will need to be for the future.

This document will need to be updated to proactively to manage the risks associated with the high purity polymer materials used in the semiconductor process. The biggest challenges today are metals and particles and certain organics.

There are four areas that have been identified as needing to be addressed:

- Tightening criteria for the components with the larger surface area.
- Define the frequency of testing that should occur for the material supplier.
- ~~· Verify that the critical components used in chemical systems are listed in the guide.~~
- Include future criteria for particles with reference to SEMI F104.

b: Estimate effect on industry. Check one of the following:

1: Major effect on entire industry or on multiple important industry sectors

- identify the relevant sectors: Advanced Semiconductor processes applying < 10nm technology

2: Major effect on an industry sector

- identify the relevant sector: _____

3: Major effect on a few companies

- identify the relevant companies: _____

4: Slight effect or effect not determinable



c: Estimate technical difficulty of the activity. Check one of the following:

- I: No Difficulty – Proven concepts and techniques exist or quick agreement is anticipated
- II: Some Difficulty – Disagreements on known requirements exist, but developing consensus is possible
- III: Difficult – Limited expertise and resources exist and/or achieving consensus is difficult
- IV: Extremely Difficult – Expertise and resources are scarce and/or achieving consensus is very difficult

2. Scope:

a: Describe the technical areas to be covered or addressed by this Document development activity.

(For Subordinate Standards, list common concepts or criteria that the Subordinate Standard inherits from the Primary Standard, as well as differences from the Primary Standard.)

~~The guide will establish criteria for the allowable contribution of contaminants by critical components for UPW and UHP chemicals. This should include analytical requirements to measure future values.~~
 High Purity Polymer Task Force is just finishing working on new revision of SEMI F57 standard, which is expected to be based on the purity needs as defined by UPW IRDS (former ITRS) roadmap. The IRDS has defined new requirements for particles shedding from the critical components as tested by SEMI F104. The IRDS has also defined the requirements for metals and organics in UPW. The areas covered will be establishing criteria for allowable contribution by critical components used for UPW treatment plant and distribution system.

b: Expected result of activity

- New Standard or Safety Guideline (including replacement of an existing Standard or Safety Guideline)
 - Line-item revision to two or more existing Standards or Safety Guidelines
 - Reapproval of a Standard or Safety Guideline
- New Subordinate Standard to an existing Standard or to a new Primary Standard to be developed concurrently with this new Subordinate Standard
 - Removal of a Standard or Safety Guideline
 - Withdrawal of a Standard or Safety Guideline
- New Preliminary Standard
 - Reinstatement of a Standard or Safety Guideline
- Major revision to an existing Standard or Safety Guideline
 - Publication of an existing Standard or Safety Guideline as an American National Standard
- Line-item revision to an existing Standard or Safety Guideline
 - New Auxiliary Information
 - Modification of existing Auxiliary Information

For a new Subordinate Standard, identify the Primary Standard here: _____

For revision of existing Standard(s) or Safety Guideline(s), identify the Standard(s) or Safety Guideline(s) that are to be revised here: _____, and identify which parts of the Standard(s) or Safety Guideline(s) that are to be revised. (Check all that apply.)

- Modification of an existing part of Standard(s) or Safety Guideline(s) including Appendices, Complementary Files, and Supplementary Materials
- Addition of one or more Appendices or Complementary Files to an existing Standard or Safety Guideline
- Addition of one or more Related Information sections or Various Materials to an existing Standard or Safety Guideline
- Revision or addition of one or more Subordinate Standards to an existing Primary Standard



For Standards, identify the Standard Subtype below:

Classification

Guide

Practice

Specification

Test Method

Terminology

Miscellaneous (describe:)

3. Projected Timetable for Completion:

a: General Milestones

a. Activity Start: December 2021~~2019~~

b. 1st Draft by: May 2022~~2020~~

c. (Optional) Informational Ballot by: _____

d. Letter Ballot by: June 2022~~2020~~

e. TC Chapter Approval By: July 2022~~2020~~

4. Liaisons:

a: List SEMI Global Technical Committees, TC Chapters, Subcommittees, or Task Forces in your or other Regions/Locales that should be kept informed regarding the progress of this activity.

(Refer to SEMI Standards organization charts and global technical committee charters as needed.)

b: List any planned Type I Liaisons with external nonprofit organizations (e.g., SDO) that should receive Draft Documents from Standards staff for feedback during this activity and be notified when the Letter Ballot is issued (see Procedure Manual § 7).

c: Intercommittee Ballots (check one):

will be issued – **identify the recipient global technical committee(s):** _____

will not be issued

5. Safety Considerations:

The resulting Document is expected (Check one):

to be a Safety Guideline

NOT to be a Safety Guideline

NOTE FOR 'to be a Safety Guideline': When all safety-related information is removed from the Document, the Document is NOT technically sound and complete – Refer to § 15.1 of the *Regulations* for special procedures to be followed.

NOTE FOR 'NOT to be a Safety Guideline': When all safety-related information is removed from the Document, the Document is still technically sound and complete.

6. Intellectual Property Considerations:

a: For a new Standard or Safety Guideline and for any part to be modified or added in a Revision of published Standards and Safety Guidelines (Check one):

the use of patented technology is NOT required.

patented technology is intended to be included in the proposed Standard(s) or Safety Guideline(s).

(If the second box is checked, check one):



- Letter of Intent received
- Letter of Intent not received

b: For Revision, Reapproval, Reinstatement, or Withdrawal of existing Standard(s) and Safety Guideline(s) (Check one):

- there is no known material patented technology necessary to use or implement the Standard(s) and Safety Guideline(s)
- there is previously known material patented technology necessary to use or implement the Standard(s) and Safety Guideline(s)

c: The body of the Document and any Appendices, Complementary Files, Related Information sections, or Various Materials that may or may not be a part of the Document by reference (Check one):

- will incorporate Copyrighted Item
- the incorporation of Copyrighted Item will NOT be required

NOTE FOR 'the use of patented technology or the incorporation of Copyrighted Item(s) is NOT required': If in the course of developing the Document, it is determined that the use of patented technology or Copyrighted Item(s) is necessary for the Document, the provisions of *Regulations* § 16 must be followed.

NOTE FOR 'will incorporate Copyrighted Item': A copyright release letter must be obtained from the copyright owner prior to publication.

7. Comments, Special Circumstances:

Background information:

High Purity Polymer Task Force is just finishing working on new revision of SEMI F57 standard, which is expected to be based on the purity needs as defined by UPW IRDS (former ITRS) roadmap. The IRDS has also defined the requirements for metals and organics in UPW ~~and UHP chemicals~~.

8. TC Member Review (Check one):

took place between (*put dates here:* 07/23/2019 and 09/07/2019
11/15/2021 and 11/28/2021) before approval at the TC Chapter Meeting, or

- took place between (*put dates here:* MM/DD/YYYY and MM/DD/YYYY) before approval by the GCS, or
- is not required for this SNARF.

NOTE FOR 'TC Member Review': A TC Member Review is required by the *Regulations* for a period of at least two weeks before approval of a new, or a major revision of an existing, Standard or Safety Guideline. (See *Regulations* ¶ 8.2.1)

9. Approval Dates:

TC Chapter or GCS: 11/05/2019
Recorded in TC Chapter Minutes: 11/05/2019
