



## STANDARDS NEW ACTIVITY REPORT FORM (SNARF)

Date Prepared: January 18, 2022 Revised (if Applicable): \_\_\_\_\_

**SNARF for:** Replacement of SEMI F109-0212, Guide for Heater Systems Requirements, as a New Standard: Guide for Material Selection for Heater Systems

**Originating Global Technical Committee:** Gases

**Originating TC Chapter:** North America

**Task Force (TF) in which work is to be carried out:** Heater Jacket Task Force

**Submitted by:** David Colquhoun **Company:** BriskHeat

**Email:** analog@comcast.net

**Phone:** 415.279.2261 **Fax:** 510.865.4431

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.)*

1. The continuing demand for higher performing heater systems in the semiconductor-manufacturing sector is requiring standardization due to numerous issues impacting the customer/user base and the manufacturers of heater systems for the semiconductor equipment industry.
2. Heater Materials Guideline will be used to determine the safe material construction in type ranges of temperature requirements. Primary standard to be based upon four levels of use: low (0°C – 100°C), medium (100°C – 200°C) high (200°C – 300°C) and ultrahigh (300°C and above)
3. Watt density guideline for materials use would be natural attribute of this guideline purpose: (Low 0 – 10 watt) (medium 10 – 100 watt/in) (high 100 – 1000 watts/in) (ultrahigh 1000 – above/watt/in)  
Cleanroom standards to materials guidelines, and safety standards for human health.
4. This new guide will provide supplemental information on the material appropriate to the heating requirement. While the original F109 discuss considerable and requirements in engineering, this will now be complemented with the guideline of material science directed at the appropriate heater technology and associated materials for use in a heater system.
5. This revised Guideline will offer a complete guide from engineering to materials science considerations in the design of semiconductor surface heater systems.



**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: \_\_\_\_\_

2: Major effect on an industry sector

- identify the relevant sector: \_\_\_\_\_

3: Major effect on a few companies

- identify the relevant companies: heater manufacturers

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.)*

1. Create a matrix of materials at each level of 3 tier system of use as in low risk, medium use risk and high use range. The phase change point being the end point of the material phase change point.
2. Risk defined as temperature phase change, wattage density risk, particle contamination risk
3. Safety issues related to use temperature range.

This document will provide a uniform list of requirements for heater materials to establish specifications for product design, development, test, and manufacturing.

**b: Expected result of activity**

New Standard or Safety Guideline (including replacement of an existing 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

New Preliminary Standard

Major revision to an existing Standard or Safety Guideline

Line-item revision to 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

Removal of a Standard or Safety Guideline

Withdrawal of a Standard or Safety Guideline

Reinstatement of a Standard or Safety Guideline

Publication of an existing Standard or Safety Guideline as an American National Standard

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: F109, and identify which parts of the Standard(s) or Safety Guideline(s) that are to be revised. (Check all that apply.)

**X** 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:

- |  |   |
|--|---|
| <input type="checkbox"/> Classification                  | <input checked="" type="checkbox"/> Guide |
| <input type="checkbox"/> Practice                        | <input type="checkbox"/> Specification    |
| <input type="checkbox"/> Test Method                     | <input type="checkbox"/> Terminology      |
| <input type="checkbox"/> Miscellaneous (describe): _____ |   |

**3. Projected Timetable for Completion:**

**a: General Milestones**

- a. Activity Start: March 2022
- b. 1<sup>st</sup> Draft by: May 2022
- c. (Optional) Informational Ballot by: \_\_\_\_\_
- d. Letter Ballot by: September 2022
- e. TC Chapter Approval By: November 2022

**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 and scopes 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 (refer to Procedure Manual § 7).**

**c: Intercommittee Ballots (check one):**

- will be issued – identify the recipient global technical committee(s): Facilities
- 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:



---

**8. TC Member Review (Check one):**

took place between (*put dates here:* 01/28/2022 and 02/10/2022 ) before approval at the TC Chapter Meeting, or

took place between (*put dates here:* \_\_\_\_\_ and \_\_\_\_\_ ) 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. (Refer to *Regulations* ¶ 8.2.1)

---

**9. Approval Dates:**

TC Chapter or GCS: TC Chapter: 03/29/2022

Recorded in TC Chapter Minutes: \_\_\_\_\_

---