Responses and Review Form for SEMI Draft Document #4683G Line Item Revision to SEMI S2-0715, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment. Delayed Revisions Related to Chemical Exposure

# Line Item 1 – Delayed Revisions Related to Chemical Exposure Criteria

### **Tallies at Close of Voting**

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	56	Voting Interest Accept Votes (VIAccept)	37
Total Voting Interests	93	Interest Reject Votes (IReject)	2
Voting Interest Return %	60.22%	Approval % [VIAccept / (VIAccept + IReject)]	94.87%
Other Returns (Intercommittee, etc.)		# of Interest Rejects that Need to be not found Valid	
	21	for Final Approval % >= 90%	0
Total Votes	97		
Total Votes with Comments	1		
Total Reject Votes	2		

## **Rejects/Negatives**

Summary: 12 Total Items Submitted

Company: Submitter	ID	Negs	Disp	Company: Submitter	ID	Negs	Disp
KLA-Tencor: Lauren Crane	КТ	7					
Safety Guru: Eric Sklar	SG	5					

Details:

NOTICE: SEMI Staff must receive copies of ALL withdrawals of negative votes.

	W = W	Vithdrawn, NR = Not Related, NP = N	ot Persuasive, RP = Related and Persuasive	P, $NS = Not$ Significant, $S = Significant$
#	Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee: Final
	23.5.1.1. Note XX	Perceived Problem: Negative The note has the tone of a requirement. Proposed Solution: Delete the note.	(Select 1) Not related Not persuasive (assumes related) Related & persuasive Reason:	Withdrawn by Subm. (Date: _)         Move to find this negative: (select 1)        Not related (requires reason, follow)        Committee new business        Assigned to:        Not persuasive (requires reason)        Related & persuasive (ballot fails)         Reason:         By/2nd:         Disc:         Vote: #-#-#.         Motion passed failed         Significance finding/method: (select 1)        Not significant by agreement         _Not significant by motion         _Significant by % of NP vote         (>10%)        Significant by agreement         _Not significant by motion         By/2nd:         Disc:         Vote: #-#-#.         Motion passed failed

	W = W	Vithdrawn, NR = Not Related, NP = No	ot Persuasive, <b>RP</b> = <b>Related and Persuasive</b>	e, NS = Not Significant, S = Significant
#	Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee: Final
KT-2	23.5.1.2	Perceived Problem: Negative This para only requires the use of S6 if a surrogate is used. This does not make sense. S6 is only relevant if ventilation is provided to control exposure. There is no particular need to reference S6 if a surrogate is used. <u>Proposed Solution</u> : Delete this sentence referencing to S6.	(Select 1) Not related Not persuasive (assumes related) Related & persuasive Reason: Lauren will provide an email for withdraw.	Withdrawn by Subm. (Date:)         Move to find this negative: (select 1)        Not related (requires reason, follow)        Committee new business        Assigned to:        Not persuasive (requires reason)        Related & persuasive (ballot fails)         Reason:         By/2nd:         Disc:         Vote: #-#-#.         Motion passed failed         Significance finding/method: (select 1)        Not significant by agreement         _Not significant by motion         _Significant by % of NP vote         (>10%)        Significant by motion         _Significant by motion         _Significant by motion        Significant by motion         By/2nd:         Disc:         Vote: #-#-#.         Motion passed failed

	W = W	N $NR = Not Related, NP = Not$	ot Persuasive, RP = Related and Persuasive	e, NS = Not Significant, S = Significant
#	Ref.	Negative including Justification	TF Finding <u>and Reason</u>	Motion and Reason in Committee: Final
KT-3	23.5.3 Exception	Perceived Problem: Negative 'no significant" is an unclear quantity. How do I know if I have exceeded it or not? Proposed Solution: Provide a more specific and measurable threshold for using the exception.	(Select 1) Not related Not persuasive (assumes related) Related & persuasive Reason: TF Vote 2 for 2 against	Withdrawn by Subm. (Date:)         Move to find this negative: (select 1)        Not related (requires reason,         follow)        Committee new business        Assigned to:        Not persuasive (requires reason)        Related & persuasive (ballot fails)         Reason:         By/2nd:         Disc:         Vote: #-#-#.         Motion passed failed         Significance finding/method: (select 1)        Not significant by agreement         _Not significant by motion         _Significant by agreement        Significant by motion         _Significant by motion         _Significant by motion        Significant by motion         By/2nd:         Disc:         Vote: #-#-#.         Motion passed failed

	W = W	<i>Tithdrawn, NR</i> = Not Related, $NP = Not$	ot Persuasive, <b>RP</b> = <b>Related and Persuasive</b>	e, NS = Not Significant, S = Significant
#	Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee: Final
KT-4		Perceived Problem: Negative 23.5.4 and 5 requires consideration of an <u>applicable</u> OEL. This section does not. Proposed Solution: If there is an intended difference explain it more clearly. If there is no intended difference, state the same idea the same way.	X Related & persuasive Reason:	Withdrawn by Subm. (Date: _)         Move to find this negative: (select 1)        Not related (requires reason,         follow)        Committee new business        Assigned to:        Not persuasive (requires reason)        Related & persuasive (ballot fails)         Reason:         By/2nd:         Disc:         Vote: #-#-#. Motion passed failed         Significance finding/method: (select 1)        Not significant by agreement        Not significant by motion         _Significant by % of NP vote         (>10%)        Significant by agreement        Not significant by motion         By/2nd:         Disc:         Vote: #-#-#. Motion passed failed

	W = W	Vithdrawn, NR = Not Related, NP = Not	ot Persuasive, <b>RP</b> = <b>Related and Persuasive</b>	P, NS = Not Significant, S = Significant
#	Ref.	Negative including Justification	TF Finding <u>and Reason</u>	Motion and Reason in Committee: Final
KT-5	23.5.6	them to function as it does not allow flammable mixtures near ignition sources during normal operation. 23.5.6 Emissions of flammable or combustible chemistries during normal equipment operations, maintenance activities and reasonably foreseeable, worst-case system failure conditions should be controlled. Conformance to this section can be shown by demonstrating that under those conditions SOC concentrations will	X Related & persuasive Reason: Insert a new note that clarifies the use of combustion pou modules. For 5 Against 0 Exception: Control of emissions does not prohibit the use of flammable effluent treatment equipment (e.g., combustion module) that utilizes an ignition source as part of the intended equipment design and normal operations. << need to consider if other possible examples	Withdrawn by Subm. (Date:)         Move to find this negative: (select 1)        Not related (requires reason,         follow)        Committee new business        Assigned to:        Not persuasive (requires reason)         x Related & persuasive (ballot fails)         Reason:         By/2nd: Visty/Crane         Disc:         Vote: 6-0. Motion passed         Significance finding/method: (select 1)        Not significant by agreement        Not significant by motion         Significant by % of NP vote         (>10%)        Significant by agreement        Significant by motion         By/2nd:         Disc:         Vote: #-#-#. Motion passed failed

	W = W	Vithdrawn, NR = Not Related, NP = No	ot Persuasive, <b>RP</b> = <mark>Related and Persuasive</mark>	e, NS = Not Significant, S = Significant
#	Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee: Final
KT-6	23.5.6	Perceived Problem: Negative Where as in earlier sections it seems logical that a concentration level lower than 1% or 25% could be demonstrative of control to the 'lowest practical level", for this clause it does not make sense that 25% is demonstrative of "control". Proposed Solution: Reconcile what this clause is trying to control or prevent.	(Select 1) Not related Not persuasive (assumes related) X_Related & persuasive Reason: For 4 Against 0 See Edited paragraph	Withdrawn by Subm. (Date: _)         Move to find this negative: (select 1)        Not related (requires reason,         follow)        Committee new business        Assigned to:        Not persuasive (requires reason)        Related & persuasive (ballot fails)         Reason:         By/2nd:         Disc:         Vote: #-#-#. Motion passed failed         Significance finding/method: (select         1)        Not significant by agreement         _Not significant by motion         _Significant by agreement        Not significant by agreement         _Significant by motion         Significant by motion         _Significant by motion         By/2nd:         Disc:         Vote: #-#-#. Motion passed failed

#	Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee: Fin
T-7	23.5.6 NOTE XX 1 <sup>st</sup> .	Perceived Problem: Negative I don't think the reference document define controlling vapors. IFC does not seem to be the correct acronym for 'international fire'. IEC has no electrical regulations. Proposed Solution: Modify wording to be more accurate. Cite at least one IEC standard which contains the claimed limitation.	(Select 1) Not related Not persuasive (assumes related) Related & persuasive Reason: Input: 1) Added "code" to IFC acronym 2) Delete IEC reference Handle as editorial	

\_\_\_\_\_\_Valid (includes at least one significant negative)

\_\_\_\_\_Not Valid (all negatives withdrawn, found not related, or found not significant)

	W = W	ithdrawn, NR = Not Related, NP = No	ot Persuasive, RP = Related and Persuasive	e, NS = Not Significant, S = Significant	
#	Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee:	Final
SG1- 1	DX-2.2 NOTE after 23.5.2.2	Negative: Replace this NOTE with one recommending selection of collection and analysis methods based on their capability to make the desired finding. <i>Reason/Justification:</i> A larger error factor doesn't render a method incapable of doing what one needs to do. Similarly, a smaller error factor doesn't render a method capable. For example, a method with a 100% error (factor of 2) and an indicated value of 4 ppb does support a finding that the actual value is less than 10 ppb. Similarly, a method with a 10% error and an indicated value of 9.5 ppb does not support such a finding.	Not related	Not persuasive ( <b>requires</b> <b>reason</b> ) Related & persuasive ( <b>ballot</b> <b>fails</b> ) <b>Reason:</b>	

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S         #       Ref.       Negative including Justification       TF Finding and Reason       Motion and Reason is         SG1-DX-2.3       Negative: Delete "1% of".	= Significant	
SG1-       DX-2.3       Negative: Delete "1% of".       (Select 1)       Withdrawn by S         2       23.5.3       Reason/Justification: There is no apparent technical basis for reducing the generally-accepted standard by two orders of magnitude, nor is there any       Not related       )         Related & persuasive       Move to find this negative: (select 1)         Not related       Not related         Not related       Not related         Not related       Not related         Not related (required)       Not related (required)		
2 23.5.3 Reason/Justification: There is no apparent technical basis for reducing the generally-accepted standard by two orders of magnitude, nor is there any magnitude, nor is there any magnitude are any magnitude.	in Committee:	Fina
<ul> <li>equating "lowest practical level" and 1% of OEL.</li> <li>NP Because: <ol> <li>&gt; 20years of application</li> <li>OELs can decrease (e.g., HF / HCl / AsH3 / Acetone / etc.)</li> </ol> </li> <li>Ambient fab levels can increase based on # of tools installed (e.g., VOCs, O3 / etc.)</li> <li>Criteria are focused on human exposure concern</li> <li>By/2nd: Disc: Vote: ###. Motio failed</li> <li>Significance finding/method: (se Not significant by % december of the significant by % december</li></ul>	<pre>bubm. (Date: bubm. (Date:</pre>	Fina

				November 2-5	
	W = 1	Withdrawn, $NR = Not Related, NP = N$	ot Persuasive, RP = Related and Persua	asive, NS = Not Significant, S = Significant	
#	Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee:	Final
	DX-2.3 23.5.4	Negative: Delete "25% of". Reason/Justification: There is no apparent technical basis for reducing the generally-accepted standard by a factor of four, nor is there any apparent technical basis for equating "lowest practical level" and 25% of OEL	(Select 1) Not related	Withdrawn by Subm. (Date:	T mai
				Disc: Vote: #-#-#. Motion passed failed Significance finding/method: (select 1) Not significant by agreement Not significant by motion Significant by % of NP vote (>10%) Significant by agreement Significant by motion By/2nd: Disc: Vote: #-#-#. Motion passed failed	

W =	Withdrawn, $NR = Not Related$ , $NP = N$	ot Persuasive, <b>RP</b> = <mark>Related and Persua</mark>	asive, NS = Not Significant, S = Significant	
# Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee:	Final
SG1-DX-2.3 4 23.5.5	Negative: Delete "25% of". Reason/Justification: There is no apparent technical basis for reducing the generally-accepted standard by a factor of four, nor is there any apparent technical basis for equating "lowest practical level" and 25% of OEL	(Select 1) Not related	Withdrawn by Subm. (Date:        )         Move to find this         negative: (select 1)        Not related (requires reason, follow)        Committee new business        Not persuasive (requires reason)        Not persuasive (requires reason)        Not persuasive (requires reason)        Related & persuasive (ballot fails)         Reason:         By/2nd:         Disc:         Vote: #-#-#.         Motion passed failed         Significance finding/method: (select 1)        Not significant by agreement        Not significant by motion        Significant by % of NP vote         (>10%)        Significant by motion        Significant by motion	

t Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee:	Fin
DX-23.5	6 <i>Negative:</i> Add a period at the end of the paragraph.	(Select 1) Not related	Withdrawn by Subm. (Date:	
	<i>Reason/Justification:</i> Correct an apparent typographical error.		Move to find this negative: (select 1) Not related (requires reason, follow) Committee new business Assigned to: Not persuasive (requires reason) Related & persuasive (ballot fails) Reason: By/2nd: Disc: Vote: #-#-#. Motion passed	
			<pre>failed failed Significance finding/method: (select 1)Not significant by agreementNot significant by motionSignificant by % of NP vote (&gt;10%)Significant by agreementSignificant by motion By/2nd: Disc: Vote: #-#-#. Motion passed</pre>	

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#	Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee:	Fin
31-	DX-2.3	<i>Comment:</i> The NOTE shown as to be deleted is not the NOTE in the published SEMI S2. (The reference to SEMI F15 was changed to a reference to SEMI S6 several years ago, as F15's content was absorbed into S6 on a rewrite. The copy of NOTE 142 on page 16 of the ballot includes the reference to S6.) This raises the question of whether there is text that is shown in this ballot as	(Select 1) Not related Not persuasive (assumes related) Related & persuasive Reason:	Motion and Reason in Committee: Withdrawn by Subm. (Date: ) Move to find this negative: (select 1) Not related (requires reason, follow) Committee new business Assigned to: Not persuasive (requires reason)	Fu
	substantive or normative portions of the published S2 text that are not correct. If there are, that calls the validity of the ballot into question.		Related & persuasive (ballot fails) Reason: By/2nd: Disc: Vote: #-#-#. Motion passed failed		
				Significance finding/method: (select 1) Not significant by agreement Not significant by motion Significant by % of NP vote (>10%) Significant by agreement Significant by motion	
				By/2nd: Disc: Vote: #-#-#. Motion passed failed	

\_Valid (includes at least one significant negative)

\_\_Not Valid (all negatives withdrawn, found not related, or found not significant)

Summary: 4 Total Items Submitted

Company: Submitter	ID	#	Company: Submitter	ID	#
KLA-Tencor: Lauren Crane	KT	4			

Details:

NOTICE: Items from "Reject" votes that are clearly marked by the voter as comments can be reviewed here.

#	Ref.	Comment	TF Response	Committee Action:
KT-1	.2 Third bullet	Perceived Problem: Editorial The sentence is much longer than necessary. <u>Proposed Solution</u> : Replace "Selection of an appropriate surrogate should consider" with "Whether"		<pre>(Select one) No further action Refer to TF for further review New Business Editorial Change: #in ECs below Other: (Select one) Committee agrees (no motion nec.) Motion to act as indicated above: By/2nd:</pre>
KT-2	.2 Third bullet	<u>Perceived Problem</u> : Editorial Incorrect word choice <u>Proposed Solution</u> : Change "insure" to "ensure"		Disc: Vote: #-#-#. Motion passed failed (Select one) No further action Refer to TF for further review New Business Editorial Change: #in ECs below Other:
				(Select one) Committee agrees (no motion nec.) Motion to act as indicated above: By/2nd: Disc: Vote: #-#-#. Motion passed failed
KT-3	<u>.3</u>	Perceived Problem: Editorial Redundant period <u>Proposed Solution</u> : Delete it		(Select one) No further action Refer to TF for further review New Business Editorial Change: #in ECs below Other: (Select one) Committee agrees (no motion nec.) Motion to act as indicated above: By/2nd: Disc:

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	1 1 1			
#	Ref.	Comment	TF Response	Committee Action:
KT-4	<u>.3</u>	<u>Perceived Problem</u> : Editorial Grammo <u>Proposed Solution</u> : Change to " an explanation <u>of w</u> hy"		(Select one) No further action Refer to TF for further review New Business Editorial Change: #in ECs below Other:
				(Select one) Committee agrees (no motion nec.) Motion to act as indicated above: By/2nd: Disc: Vote: #-#-#. Motion passed failed

### **Summary of Editorial Changes**

**NOTICE:** TF leaders have the option of addressing editorial changes prior to addressing negatives, if they believe that their editorial changes will render some or all of the submitted negatives non-persuasive.

**NOTICE:** It is only necessary to approve each editorial change separately if someone objects to one or more of the suggested changes.

#	Ref.	Before	After	Object? (Y/N)	Motion to Approve: (if necessary)
					By/2nd: Disc: Vote: #-#-#. Motion passed failed
					By/2nd: Disc: Vote: #-#-#. Motion passed failed

Move to approve **all** editorial changes as shown above:

By/2nd:

Disc:

Vote: #-#-#. Motion passed failed

# Forwarding Motions

Documents Passing Review	Documents Failing Review
Safety Check	Followup Activity Authorization
Move to find that this document:	Move to:
Is NOT a safety document: when all safety-related information is removed, the document is still technically sound and complete.	x_Return ballot to the originating task force for rework
IS a safety document: when all safety-related information is removed, the	<u>x</u> and authorize a follow-up ballot
document is not technically sound and complete.	Transfer ballot to the (name) task force for
The Safety Checklist (Regulations 13.3) for this document is complete and	rework
has accompanied the document through the balloting process.	and authorize a follow-up ballot
	Discontinue work on ballot.
By/2nd:	
	<i>By/2nd</i> : John Visty (Salus Engineering)/Bert
Vote: #-#-#. Motion passed failed	Planting(ASML)
	Disc:
Intellectual Property Check	<i>Vote</i> : 7-0. Motion passed
The meeting chair asked those present in person or by electronic link, if they were aware of any patented or copyrighted material in the Standard or Guideline.	
(Note: Such material might have become known since the Standard or Safety	
Guideline was last reviewed, or might become relevant due to this ballot.)	
No patented or copyrighted material is known to exist in the Standard or Guideline. (no motion needed)	
Patented or copyrighted material is known to exist in the Standard or Guideline	
but release for such material has been obtained or presented to the committee.	
(no motion needed)	
Patented or copyrighted material is known to exist in the Standard or Guideline	
but release for some of the material(s) has NOT been obtained or presented to the committee. The committee moves to:	
Ask the ISC for special permission to publish the standard without release	
Wait for the release of the patented or copyrighted material.	
By/2nd:	
Disc:	
Vote: #-#-#. Motion passed failed	
Final Action	
Move to:	
Pass this document as balloted and forward to the A&R for procedural review.	
Pass this document with editorial changes and forward to the A&R for	
procedural review.	
By/2nd:	
Disc:	
Vote: #-#-#. Motion passed failed	