Responses and Review Form for SEMI Draft Document #4683H 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

55	Voting Interest Accept Votes (VIAccept)	36
87	Interest Reject Votes (IReject)	4
63.22%	Approval % [VIAccept / (VIAccept + IReject)]	90.00%
	# of Interest Rejects that Need to be not found Valid for	
15	Final Approval % >= 90%	0
92		
2		
4		
	87 63.22%	87 Interest Reject Votes (IReject) 63.22% Approval % [VIAccept / (VIAccept + IReject)] # of Interest Rejects that Need to be not found Valid for 15 Final Approval % >= 90%

Rejects/Negatives

Summary: 17 Total Items Submitted

Company: Submitter	ID	Negs	Disp	Company: Submitter	ID	Negs	Disp
KLA-Tencor: Lauren Crane	KT	4		ASML: Bert Planting	ASML	2	
Safety Guru: Eric Sklar	SG	8		Applied Materials: Ed Karl	AMAT	3	

Details:

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

W = Wi	thdrawn, $NR = Not Related$, $NP = Not Related$	ot Persuasive, RP = <mark>Related and Persuasive</mark>	e, NS = Not Significant, S = Significant	
# Ref.	Negative including Justification	TF Finding <u>and Reason</u>	Motion <u>and Reason</u> in Committee:	Final
Bullet 1	1. What does "integrated sampling" mean in this	Reason: Motion Holbrook / Barsky TF motion for accepting as editorial. Y – 9 N - 0		

	$W = \frac{1}{2}$	Withdrawn, $NR = Not Related$, $NP = Not Related$	ot Persuasive, RP = Related and Persuasive	e, NS = Not Significant, S = Significant	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
KT-2	23.5.1.2 bullet 2	Perceived Problem: Negative This bullet does not have any aspect related to validation. In other words there is not a requirement that the technology of the instrument be based on a validated analysis method (which is present in the other two bullets) nor any requirement that the direct reading instrument conform to any other particular criteria (e.g., certified). (real-time / instantaneous) is not necessarily a restatement of 'direct reading' Proposed Solution: Change to the effect of A direct reading, instrumentation (real-time / instantaneous) instrument using a validated method of analysis and as used per the instrument manufacturer's specification and guidance.			
1	1			Vote: #-#-#. Motion passed failed	

	W = V	Withdrawn, $NR = Not Related$, $NP = Not Related$	ot Persuasive, RP = Related and Persuasive	e, NS = Not Significant, S = Significant	
#	Ref.	Negative <u>including Justification</u>	TF Finding <u>and Reason</u>	Motion <u>and Reason</u> in Committee:	Final
KT-3	23.5.1.2 bullet 3	Perceived Problem: Negative Bullet three, as worded, is not robustly differentiated from the first bullet, which may lead to confusion. The inclusion of "a stable SOC (analyte)" is not parallel with the other bullets, and I imagine it is meant to be — which also has the potential to confuse. Proposed Solution: Change to the effect of "A sample collected Collection of a stable SOC (analyte) in a calibrated (i.e., known sample collection rate) vacuum canister and laboratory analysis using a validated method.	Reason: Withdrawn via email from Lauren C.		

Ref. Negative including Justification TF Finding and Reason Motion and Reason in Committee: KT-4 Note XX following 23.5.3 **Ref. Negative including Justification TF Finding and Reason Motion and Reason in Committee: Negative Select 1) Not related Note to find this negative: (selective impression of a conformance criterion, which is inappropriate for a note. **Reason:** Proposed Solution: Delete the note or change to the effect of "Selection of the lowest OEL, based on the target SOC and exposure duration, published by a professional or governmental agency and with consideration of the appropriate category of OEL **Reason:** Move to find this negative: (selective Not related Not related Not persuasive (requires reason, follow) **Leason:** Move to find this negative: (selective Not related Not persuasive (requires reason), follow) **Leason:** Motion passed failed Reason: **Leason:** By/2nd: Disc: Vote: #-#-#. Motion passed failed Not persuasive (requires reason). **Leason:** By/2nd: Disc: Vote: #-#-#. Motion passed failed Not persuasive (requires reason). **Leason:** By/2nd: Disc: Vote: #-#-#. Motion passed failed Not persuasive (requires reason). By/2nd: Disc: Vote: #-#-#. Motion passed failed Not persuasive (requires reason). **Leason:** By/2nd: Disc: Vote: #-#-#. Motion passed failed Not persuasive (requires reason). By/2nd: Disc: Vote: #-#-#. Motion passed failed Not persuasive (requires reason). By/2nd: Disc: Vote: #-#-#. Motion passed failed Not persuasive (requires reason). By/2nd: Disc: Vote: #-#-#. Motion passed failed Not persuasive (requires reason). By/2nd: Disc: Vote: #-#-#-#. Motion passed failed Not persuasive (requires reason). By/2nd: Disc: Vote: #-#-#-#. Motion passed failed Not persuasive (requires reason). By/2nd: Disc: Not related (requires reason). By/)
following 23.5.3 Negative "is to be selected." Gives the impression of a conformance criterion, which is inappropriate for a note. Proposed Solution: Delete the note or change to the effect of "Selection of the lowest OEL, based on the target SOC and exposure duration, published by a professional or governmental agency and with consideration of the appropriate category of OEL.	
Significance finding/method: (sel 1) Not significant by agreement Not significant by with motion Significant by agreement Significant by agreement Significant by motion Significant by with motion Significant by with motion Significant by motion Significant by motion Significant by motion Significant by with motion Significant	ed ect

W	= Withdrawn, $NR = Not Related$, $NP = N$	ot Persuasive, RP = Related and Persua	usive, NS = Not Significant, S = Significant	
# Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee:	Final
SG1-DX-1 1 5.1	Negative: Add "LFL" to the Abbreviations and Acronyms list.	(Select 1) _Not related _Not persuasive (assumes	Withdrawn by Subm. (Date:)	
	Reason/Justification: This ballot proposes changing "lower explosive limit" to "lower flammable limit (LFL)" in 5.2 but does not propose adding ":LFL" to 5.1.	related)Related & persuasive Reason:	Move to find this negative: (select 1) Not related (requires reason, follow) Committee new businessAssigned 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 agreementNot significant by motionSignificant by % of NP vote (>10%)Significant by agreementSignificant by motion By/2nd: Disc: Vote: #-#-#. Motion passed failed	

	W = W	NR = Not Related, NP = Not Related	ot Persuasive, RP = Related and Persuas	ive, $NS = Not Significant$, $S = Significant$	
#	Ref.	Negative including Justification	TF Finding and Reason	Motion <u>and Reason</u> in Committee:	Final
SG1- 2	DX-1 5.1.x	Negative: Italicize "SOC". Reason/Justification: Conform		Withdrawn by Subm. (Date:	
		to the mandated style.	related)Related & persuasive	Move to find this negative: (select 1)	
			Reason:	Not related (requires reason, follow)	
				Committee new businessAssigned 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 agreementNot significant by motionSignificant by % of NP vote	
				(>10%) Significant by agreement	
				Significant by motion	
				By/2nd: Disc:	
				Vote: #-#-#. Motion passed failed	

	W = W	$NR = Not \ Related, \ NP = Not \ Related$	ot Persuasive, RP = Related and Persua	sive, NS = Not Significant, S = Significant	
#	Ref.	Negative including Justification	TF Finding <u>and Reason</u>	Motion <u>and Reason</u> in Committee:	Final
SG1-3	DX-1 5.2.x	Negative: Qualify the use of the term "validated method", such as by specifying that this definition is specific to IH. Reason/Justification: The term "validated method" is applicable to many disciplines, but the definition is specific to IH. The SEMI Style Guide specifies a means of limiting the applicability of a definition within a document.	(Select 1) Not relatedNot persuasive (assumes related)Related & persuasive Reason:		
				Significance finding/method: (select 1) Not significant by agreementNot significant by motionSignificant by % of NP vote (>10%)Significant by agreementSignificant by motion By/2nd: Disc: Vote: #-#-#. Motion passed failed	

	W = W	$NR = Not \ Related, \ NP = Not \ Related$	ot Persuasive, RP = Related and Persuasive	P_{S} , $NS = Not Significant$, $S = Significant$	
#	Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee:	Final
	DX-2.1 23.5	Negative: Change "All measurements should be made using a method" to "All measurements should be made using methods" Reason/Justification: The proposed change would mandate using the same method (singular) for all measurements (plural).	(Select 1)Not related	Move to find this negative: (select 1) Not related (requires reason, follow) Committee new businessAssigned 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 agreementNot significant by motionSignificant by % of NP vote (>10%)Significant by agreement	Final
				Significant by motion By/2nd: Disc: Vote: #-#-#. Motion passed failed	

W = Withdrawn, $NR = Not Related$, $NP = Not Persuasive$, $RP = Related$ and $Persuasive$, $NS = Not Significant$, $S = Significant$	
# Ref. Negative <u>including Justification</u> TF Finding <u>and Reason</u> Motion <u>and Reason</u> in Committe	e: Final
SGI-DX-2.3 NOTE after 23.5.3 NOTE after 23.5.3 NOTE after 23.5.3 Reason/Justification: Selection of the appropriate OELs is sufficiently important to me a normative criterion, rather than a suggestion. Notion: Holbrook / Crane Y 5 N 0 SGI-5 based on not providing sufficient guidance on selection of OEL. Significance finding/method: (select 1) Not related (requires reason) x. Related & persuasive (bal fails) Reason: Notion: Holbrook / Crane Y 5 N 0 SGI-5 based on not providing sufficient guidance on selection of OEL. Significance finding/method: (select 1) Not significant by agreeme Not significant by which agreeme Not significant by which agreement Significant by agreement Significant by motion Significant by agreement Significant by motion Significant by motion	te: on, ss lot ed

	W = W	Vithdrawn, $NR = Not Related$, $NP = N$	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
SG1 6	-DX-2.3 23.5.6 Exception	Negative: Change "utilize" to "use". Reason/Justification: Correct usage error.	(Select 1) Not relatedNot persuasive (assumes related)Related & persuasive Reason:		
				Significance finding/method: (select 1) Not significant by agreementNot significant by motionSignificant by % of NP vote (>10%)Significant by agreementSignificant by motion By/2nd: Disc: Vote: #-#-#. Motion passed failed	

	W = W	$ith drawn, NR = Not \ Related, NP = Not$	ot Persuasive, RP = Related and Persuasi	ive, NS = Not Significant, S = Significant	
#	Ref.	Negative including Justification	TF Finding <u>and Reason</u>	Motion and Reason in Committee:	Final
SG1-	DX-2.3 23.5.6 Exception	Negative: Delete "furnaces for anneal, ". Reason/Justification: Most annealing is done in	-	Withdrawn by Subm. (Date:) Move to find this negative: (select 1)Not related (requires reason, follow)Committee new businessAssigned to:Not persuasive (requires reason)	rmai
		example.		Related & persuasive (ballot fails) Reason: By/2nd: Disc: Vote: #-#-#. Motion passed failed	
				Significance finding/method: (select 1) Not significant by agreementNot significant by motionSignificant by % of NP vote (>10%)Significant by agreementSignificant by motion	
				By/2nd: Disc: Vote: #-#-#. Motion passed failed	

	W = W	ithdrawn, $NR = Not Related$, $NP = N$	ot Persuasive, RP = Related and Persuasive	e, NS = Not Significant, S = Significant	
#	Ref.	Negative including Justification	TF Finding and Reason	Motion <u>and Reason</u> in Committee:	Final
SG1- 8		Negative: Change "above their lower flammable limit" to "above 25% of their lower flammable limits". Reason/Justification: a) State a numerical criterion consistent with the remainder of the document. b) Correct an error in number.	Reason: Ballot text: Enclosures for pyrophoric or flammable gases should be designed to ensure adequately uniform dilution (i.e., prevent "pocketing") and to prevent accumulation of pyrophoric and flammable gases above their lower Explosive flammable limit. Uniform dilution can generally be verified through exhaust vapor visualization techniques. Ventilation flow rate should be adequate to maintain concentrations below 25% of the lower explosive flammable limit for the gas with the lowest LELLFL that is used in the enclosure.	reason)Related & persuasive (ballot tails) Reason: By/2nd:	
Val		of this reject: at least one significant negative) egatives withdrawn, found not related	l, or found not significant)		

Table 3 Negatives from < ASML: Bert Planting>

	W = W	$Vithdrawn, NR = Not \ Related, NP = Not \ Related$	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
	23.5.3	Reject 1 Please include DNEL values of ECHA as OEL source	(Select 1)Not relatedNot persuasive (assumes related)Related & persuasive Reason:		

#	Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee:	Final
ASM L-2	23.5.1	Reject 2: Consider to include modelling programmes (Advanced REACH Tool) for exposure estimation of new processes. As these models give an over estimation, the exposure modelled should be < 25% of OEL	(Select 1) Not related Not persuasive (assumes related)	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 agreementNot significant by motionSignificant by % of NP vote (>10%)Significant by agreementSignificant by motion By/2nd: Disc:	
	•	of this reject: s at least one significant negative)			

Table 4 Negatives from < AMAT: Ed Karl >

	W = W	Yithdrawn, 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 <u>and Reason</u> in Committee:	Final
	23.5.3, NOTE XX	Negative The sentence, "Selection of the lowest OEL published by a professional or governmental agency is the recommended approach in order to cover all installations and end-user locations." is problematic because it causes ambiguity to the normative portion of Section 23.5.3 which states "applicable", not "lowest". Proposed Solution: Delete the sentence as it adds no value (only confusion) to the normative portion of Section 23.5.3.	Not related Not persuasive (assumes related) Related & persuasive Reason:		

	W = V	Withdrawn, $NR = Not Related$, $NP = Not Related$	ot Persuasive, RP = Related and Persuasive	e, NS = Not Significant, S = Significant
#	Ref.	Negative including Justification	TF Finding and Reason	Motion <u>and Reason</u> in Committee: Final
AMA T-2	23.5.4	"at the lowest practical level" is not an improvement to "minimized". How does 25% of the applicable OEL(s)	(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 _Significant by motion By/2nd: Disc: Vote: #-#-#. Motion passed failed

AMA T-3 Negative "at the lowest practical level" is not an improvement to "minimized". How does 25% of the applicable OEL(s) equate to "at the lowest practical level"? Proposed Solution: Rephrase the paragraphs so that the words "minimized" and "at the lowest practical level" are removed, similar to the format used in Section 23.5.6. Celect 1) Not related Not persuasive (assumes related) Related & persuasive Reason:		, $NS = Not \ Significant$, $S = Significant$
"at the lowest practical level" is not an improvement to "minimized". How does 25% of the applicable OEL(s) equate to "at the lowest practical level"? Proposed Solution: Rephrase the paragraphs so that the words "minimized" and "at the lowest practical level" are removed, similar to the format used in Section 23.5.6. Not persuasive (assumes related) Related & persuasive Reason: Move to fin Not related Not persuasive Reason: Felated & persuasive Reason: Move to fin Not related Not persuasive Reason:	: Final	Motion and Reason in Committee:
Significand 1) Not signNot signSignificandSig	on) tils) ed	Committee new businessAssigned 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 _Significant by motion _Significant by motion _Significant by motion _Significant by motion
Final disposition of this reject: Valid (includes at least one significant negative)		_

Comments

Summary: 3 Total Items Submitted

Company: Submitter	ID	#	Company: Submitter	ID	#	
AMAT: Ed Karl	AMAT	2	ASML: Bert Planting	ASML	1	

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:
ASM L-1		is there a need to how to deal with SVHC substances.		(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
	NOTE XX	Comment "PEL" is used in the first bullet without definition. Proposed Solution: Replace "PEL" with "Permissible Exposure Limits" instead.		(Select one)No further actionRefer to TF for further reviewNew BusinessEditorial Change: #in ECs belowOther:
				(Select one) Committee agrees (no motion nec.) Motion to act as indicated above: By/2nd: Disc: Vote: #-#-#. Motion passed failed
5	NOTE XX	Comment Note XX references GESTIS International Limit Values, but Section 4.11 does not reflect this additional reference.		(Select one)No further actionRefer to TF for further reviewNew BusinessEditorial Change: #in ECs belowOther: (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.	suggested	changes.
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#	Ref.	Before	After	Object? (Y/N)	
					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 document is not technically sound and completeThe Safety Checklist (Regulations 13.3) for this document is complete and has accompanied the document through the balloting process.	x_and authorize a follow-up ballotTransfer ballot to the (name) task force for reworkand authorize a follow-up ballot
By/2nd:	Discontinue work on ballot.
Disc:	By/2nd: Visty/Planting
Vote: #-#-#. Motion passed failed	Disc:
rote. W W W. Middle pussed failed	Vote: #-#-#. 9-0 Motion passed failed
Intellectual Property Check	voie. #-#-#. 9-0 Wotton passed failed
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 releaseQuit the activityWait 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	
•	