A69-2017 – BULK ASBESTOS/FIBRE COUNTING CHECKLIST

Revision 1.0 – January 28, 2019

Laboratory Name: _____

Appendix Name: _____

Appendix Number: _____

Assessor: _____

Date: _____

CALA
Laboratory Accreditation

ASSESSOR NOTES:

Clause	Requirement	Document Conformance		Assessment Conformance	
		Y/N/NA	Notes	Y/N/NA	Notes
7.2	**Selection, Verification and Validation of Methods**				
7.2.1.1	All necessary successive steps in the test procedure (including details on reagent preparation, storage and shelf life, equipment, supplies, etc.) are appropriate.				
7.2.1.2	The test method, procedures and supporting documentation (e.g., labware cleaning procedures, supporting test methods, equipment instruction manuals, reference texts, etc…) are up to date and are readily available to the analyst. Note: For issues related to document control, refer to Clause 8.3.				
7.2.1.3	The test method is based on the latest valid edition of a published reference method, unless it is not possible or appropriate. The test method is supplemented with additional details to ensure consistent application.				

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7.2.1.5	There is data available to demonstrate that the laboratory verified that it could properly perform the method prior to analysis of customer samples. As a minimum, these records include where applicable, detection limit, precision (Both intra-and inter counter precision values), accuracy, and measurement uncertainty.				
7.2.2	For non-standard methods, laboratory-developed methods and standard methods used outside their scope or modified, there are method validation results, and a statement that the method is fit for the intended use. The level and rigour of validation will depend on whether there are modifications from the reference method or if it is an in-house developed method (see CALA Policy A12). Modifications from the reference method shall be documented. As a minimum, the laboratory shall maintain records of: detection limit, precision, accuracy, measurement				

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	uncertainty, and ruggedness.				
7.3	**Sampling**				
7.3.1	Sampling plans for samples are based on appropriate statistical methods and the sampling process addresses the factors to be controlled to ensure the validity of the results; i.e.,				
	• Sampling/sub-sampling methods are available and followed;				
	• Sampling plans are statistically based;				
	• Field sampling generates representative samples, and duplicates are routinely taken (Include field duplicates where available).				

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7.4	**Handling of Test or Calibration Items**				
7.4.1	Sample history requirements are: 1) appropriate; 2) documented and available where required; and 3) implemented; e.g.				
	• field filtration;				
	• chemical preservation;				
	• sample containers;				
	• storage conditions;				
	• holding time.				
	• Appropriate drying temperature is used (for solid matrices);				
	• Dust loss and cross-contamination are minimized (for solid matrices);				
	• Sample size reduction generates a representative portion for subsequent work				
	• Uncertainty of sample size reduction steps is known				

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	through the introduction of random duplicates				
6.4	**Calibration of Equipment**				
6.4.6	1) appropriate; 2) included or referenced in the test method; and 3) implemented; e.g.,				
	PCM – Fibre Counting Check phase ring alignment using telescope ocular or Bertrand lens (at least once daily as used)				
	Check resolution using HSE/NPL phase-contrast test slide (Mark II or Red or green Mark III slide – Mark III yellow is not acceptable)				
	Check calibration of Walton-Beckett graticule using calibrated stage micrometer				

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	PLM – Bulk ID Asbestos Check polarized light microscope accessories (e.g. gypsum plate), alignment;				
	• Check magnification, resolution;				
	• Reference slides (preferably asbestos for bulk) to check functions of polarized light microscope. Adequate number of reference slides (e.g. chrysotile, , amosite, manmande mineral fibres)				
	• criteria to identify calibration nonconformance				

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7.7	**Method Quality Control (Bulk Asbestos)**				
7.7.1	Method quality control is appropriate; included or referenced in the test method; and, implemented. Resulting data is recorded in such a way that trends are detectable and, where practicable, statistical techniques are applied to review the results. QC includes but is not limited to:				
	• criteria for multiple preparations of samples for identification and quantification (prevent false negatives: e.g. If none seen then perform more preps or remove extraneous material, do concentration).				
	• record optical properties of fields examined (point counting).				
	• method blank to monitor contamination;				

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7.7	**Method Quality Control (Bulk Asbestos) continued.**				
	• 5% blind samples/slides or as prescribed of known content (e.g. previously analysed slides or material, PT samples, reference slides)				
	• Prepare duplicate slides of at least 10% of the samples analyzed.				
	• criteria to identify method non-conformances				
	• procedures to evaluate interference.				

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		Y/N/NA	Notes	Y/N/NA	Notes
7.7	**Method Quality Control (Fibre Counting)**				
7.7.1	Method quality control is appropriate; included or referenced in the test method; and, implemented. Resulting data is recorded in such a way that trends are detectable and, where practicable, statistical techniques are applied to review the results. QC includes but is not limited to:				
	• method blanks (or field blanks as available) to monitor contamination				
	• duplicates to monitor precision (prepare slides for 10% of samples)				
	• adequate number of reference slides (e.g., chrysotile, amosite, manmade mineral fibres). Slides should include a range of loadings and background dust levels,				

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7.7	**Method Quality Control (Fibre Counting) continued**				
	• Perform blind recounts by the same counter on 10% of filters counted (slides relabeled by a person other than the counter)				
	• criteria to identify method non-conformances				
	• procedures to evaluate interference.				
	• Control charting as appropriate				
	Check filter area periodically - NIOSH 7400 sates to periodically check and adjust the filter capture area .				
7.7.2	The laboratory participates in proficiency testing, as per CALA P02-03; any unsatisfactory PT results have been investigated.				

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6.4	**Equipment**		
6.4.1	All equipment required for correct performance of the test procedure is available. Equipment includes measuring instruments, support equipment, computers, reagents and reference materials.		
6.4.4	The equipment is compliant with specifications and checked and calibrated prior to use (or when being put back into use if the equipment was outside the permanent control of the laboratory or not in use for a period of time).		
6.4.5	The equipment is capable of achieving the measurement accuracy and/or measurement uncertainty required to provide a valid result		
6.4.8	All equipment requiring calibration or equipment with a defined period of validity (e.g., reagents, standards) is labeled so that the user can readily identify the status of the calibration or period of validity. All reagents are labeled with material, concentration or purity, date prepared and/or expiry date.		
6.4.9	Out of service equipment is clearly isolated or clearly labeled or marked as being out of service, and that equipment is checked and validated before return to service.		

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6.4.12	The laboratory has taken practicable measures to prevent unintended adjustments that would invalidate results.		
6.3.1	Environmental conditions required for equipment are appropriate and monitored, and all supplies are stored under appropriate conditions (e.g., 1-4 degrees C) and in a manner that satisfies requirements for safety, security, separation of incompatible materials, and ease of retrieval.		
6.5	**Metrological Traceability**		
6.5.2	Measurement results are traceable to the SI.		
6.5.3	When metrological traceability to the SI units is not technically possible, the laboratory demonstrates metrological traceability to an appropriate reference. Reference materials must be from accredited RMPs, where available		
7.5	**Record Keeping**		
7.5.1	Records related to the performance of the test method are maintained; e.g		
	original data (1);		
	record of non-conformances and actions taken (2);		

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7.5	**Record Keeping (continued)**		
7.5.1	reagent preparation records (3);		
	equipment maintenance records (4);		
	records of gravimetric traceability (5);		
	records of volumetric traceability (6);		
	records of temperature traceability (7).		

(1) includes, as appropriate, calibration data, test data (including QC data), experimental variables (e.g., temperature, etc.); analyst ID; sample ID; equipment ID; test method ID; date and time of test.

(2) includes, as appropriate, non-conformances related to: test method variances; sample history; method performance; interferences; and data validation.

(3) includes, as appropriate, supplier, grade, batch no.; dates of preparation or verification; measurement of weights, volumes, time intervals, temperatures and related calculations; relevant processes (e.g., pH adjustment, sterilization); verification results; discard date.

(4) includes, as appropriate, identity of the item of equipment and its software; manufacturer, model, serial no.; checks that equipment complies with lab specifications; date commissioned; repair and maintenance history; calibration history; any damage, malfunction or modification to the equipment; location.

(5) includes, as appropriate, traceability of balance and/or weights to a national standard, and daily or as-used checks (see A61-CALA Traceability Policy).

(6) includes, as appropriate, traceability of auto pipettes, dilutors, etc., that play a defining role in analytical accuracy, and daily or as-used checks (see A61-CALA Traceability Policy).

(7) includes, as appropriate, traceability of working thermometers to a national standard for those thermometers that measure temperatures that play a defining role in analytical uncertainties (see A61-CALA Traceability Policy).