

**NVLAP Bulk Asbestos Proficiency Test
M22023 - November 10, 2023
Individual Laboratory Results**

NVLAP Lab Code 200655

Hawaii Analytical Laboratory, LLC
3615 Harding Ave., Suite 308
Honolulu, HI 96816-3759
United States

PROFICIENCY TEST PENALTY POINTS

Sample 1	0
Sample 2	0
Sample 3	0
Sample 4	0
Other *	0
TOTAL POINTS:	0

Failure = 150 or more total points

* Penalty points are assigned for failure to follow instructions. Additional details (if any) for error points assigned are listed below:

Prepared by RTI International for
Participants in NIST's National Voluntary Laboratory Accreditation Program
For Bulk Asbestos Analysis by PLM

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Sample 1

Criteria	Reported by Laboratory	Mean Reference Values	Acceptable Answers	Assigned Points
Asbestos Type False Negative (150 pts.) Asbestos ID error (75 pts.)	TREM	Actinolite	Actinolite or Tremolite	
% Asbestos (50 pts.)	1	2.0 %	0.1 % to 5.0 %	
Refractive Index (40 pts. each index, 10 pts. if $\gamma \leq \alpha$. Max penalty 80 pts.)	$\alpha = 1.608$ $\gamma = 1.635$	$\alpha = 1.615$ $\gamma = 1.636$	α : 1.602 to 1.628 γ : 1.624 to 1.648	
Birefringence (10 pts.) *	M	Moderate	Low or Moderate *	
Pleochroism (10 pts.)	N	No	No	
Extinction (10 pts.)	I	Inclined	Inclined	
Sign of Elongation (10 pts.)	P	Positive	Positive	
Color (10 pts.)	CL	Colorless	Colorless or Green	
Reporting Additional Asbestos Type (75 pts.)		None	None	

* Birefringence results must be correctly calculated based on participant measured refractive index values.

Total Points Assigned for Sample 1: 0

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Sample 2

Criteria	Reported by Laboratory	Mean Reference Values	Acceptable Answers	Assigned Points
Asbestos Type False Pos > 0.1 % (150 pts.) False Pos = 0.1 % (75 pts.)	NONE	None	None or Trace Tremolite*	

** Tremolite cleavage fragments were found in the paint layer. Reporting trace tremolite is an acceptable answer.*

Total Points Assigned for Sample 2: 0

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Sample 3

Criteria	Reported by Laboratory	Mean Reference Values	Acceptable Answers	Assigned Points
Asbestos Type False Negative (150 pts.) Asbestos ID error (75 pts.)	CHRY	Chrysotile	Chrysotile	
% Asbestos (50 pts.)	2	6.1 %	1.0 % to 11.0 %	
Refractive Index (40 pts. each index, 10 pts. if $\gamma \leq \alpha$. Max penalty 80 pts.)	$\alpha = 1.551$ $\gamma = 1.557$	$\alpha = 1.550$ $\gamma = 1.557$	α : 1.546 to 1.554 γ : 1.553 to 1.561	
Birefringence (10 pts.) *	L	Low	Low or Moderate *	
Pleochroism (10 pts.)	N	No	No	
Extinction (10 pts.)	P	Parallel	Parallel	
Sign of Elongation (10 pts.)	P	Positive	Positive	
Color (10 pts.)	CL	Colorless	Colorless	
Reporting Additional Asbestos Type (75 pts.)		None	None	

* Birefringence results must be correctly calculated based on participant measured refractive index values.

Total Points Assigned for Sample 3: 0

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Sample 4 – Type 1

Criteria	Reported by Laboratory	Mean Reference Values	Acceptable Answers	Assigned Points
Asbestos Type False Negative (150 pts.) Asbestos ID error (75 pts.)	AMOS	Amosite	Amosite	
% Asbestos (50 pts.)	8	12.2 %	1.0 % to 23.0 %	
Refractive Index (40 pts. each index, 10 pts. if $\gamma \leq \alpha$. Max penalty 80 pts.)	$\alpha = 1.680$ $\gamma = 1.695$	$\alpha = 1.677$ $\gamma = 1.698$	$\alpha: 1.672$ to 1.682 $\gamma: 1.692$ to 1.704	
Birefringence (10 pts.) *	M	Moderate	Low or Moderate *	
Pleochroism (10 pts.)	N or Yes (weak)	No	No or Yes (weak)	
Extinction (10 pts.)	P	Parallel	Parallel	
Sign of Elongation (10 pts.)	P	Positive	Positive	
Color (10 pts.)	CL	Colorless	Colorless, Brown, or Other (Tan)	
Reporting Additional Asbestos Type (75 pts.)	2 %	None	None	

* Birefringence results must be correctly calculated based on participant measured refractive index values.

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Sample 4 – Type 2

Criteria	Reported by Laboratory	Mean Reference Values	Acceptable Answers	Assigned Points
Asbestos Type False Negative (150 pts.) Asbestos ID error (75 pts.)	CHRY	Chrysotile	Chrysotile	
% Asbestos (50 pts.)	2	2.2 %	0.1 % to 5.0 %	
Refractive Index (40 pts. each index, 10 pts. if $\gamma \leq \alpha$. Max penalty 80 pts.)	$\alpha = 1.551$ $\gamma = 1.557$	$\alpha = 1.549$ $\gamma = 1.554$	α : 1.544 to 1.554 γ : 1.548 to 1.560	
Birefringence (10 pts.) *	L	Low	Low or Moderate *	
Pleochroism (10 pts.)	N	No	No	
Extinction (10 pts.)	P	Parallel	Parallel	
Sign of Elongation (10 pts.)	P	Positive	Positive	
Color (10 pts.)	CL	Colorless	Colorless	

* Birefringence results must be correctly calculated based on participant measured refractive index values.

Total Points Assigned for Sample 4: 0

NVLAP Laboratory Contacts

NVLAP Lab Code 200655

Hawaii Analytical Laboratory, LLC

Please review your contact information below and make sure it is accurate. If there are any changes, please update your information on the RTI website, <https://nvlap-plm.rti.org/>. Also, NVLAP no longer sends the NVLAP Authorized Contact list to RTI at the start of each round. When your NVLAP Authorized Representative changes, please contact NVLAP, nvlap@nist.org, and update your primary contact information on the RTI website.

Laboratory Primary Contact (NVLAP Authorized Contact)

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Laboratory / Shipping Contact

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Thank you for participating in the NVLAP Bulk (PLM) Proficiency Testing Program.