

IHPAT Round 241
 Proficiency Testing Performance for Participant ID: PAT-206698

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This report contains your organization's IHPAT Proficiency Analytical Testing results for **IHPAT Round 241**. It is the participant's responsibility to thoroughly review the information in this final report and to immediately contact the AIHA Proficiency Analytical Testing Programs, in writing, if any errors are found.

IHPAT Results

The final report is comprised of two sections relating to IHPAT Round 241. The first section contains your organization's results listed per analyte, per sample. The second section contains your current performance and performance from the two previous rounds, respectively (where applicable). Summary results for all participants for IHPAT Round 241 are located in a separate report.

Testing Results for IHPAT Round 241

This part of the report contains your organization's results listed per analyte, per sample.

Contaminant	Unit	#	Result	Ref. Value	Lower Limit	Upper Limit	z-Score	Rating
Asbestos (ASB)	f/mm ²	1	133	194	103	313	-1.7	A
	f/mm ²	2	317	356	199	557	-0.7	A
	f/mm ²	3	177	454	222	767	-3	U
	f/mm ²	4	91.7	86	47	136	0.4	A

Statistical Analysis Interpretation Note:

Reference value is the mean of the reference group.

Lower limit = reference value - 3 standard deviations; Upper limit = reference value + 3 standard deviations

z-Score = (reported result - reference value)/standard deviation. Note: z-Scores indicate how far a particular score is away from the mean. A - Acceptable* Analysis; U - Unacceptable Analysis; E - Excused Absence

Fiber data are positively skewed therefore transformations are used to obtain approximately normal distributions. Both the assigned values and acceptance limits are based on consensus of the reference group.

*The acceptability of reported results is based on upper and lower acceptance limits. A reported result may appear acceptable/unacceptable according to z-Score, but be identified as an outlier based upon the acceptance limits. Any non-participation or non-reporting of PAT data will result in unacceptable results (see PAT Programs Participation Policies, Section 2.1.6.2.).

Measurement uncertainty of any assigned value is also available on the respective certificate of analysis for the round.

Technical Comment - Organic Solvents: To accommodate a potential bi-modal distribution between laboratories using carbon disulfide vs. those using carbon disulfide with co-solvents for IPA analysis, PAT Programs has expanded the acceptance range based on the standard deviation from the carbon disulfide reference group participants. The reference mean was derived from the entire reference group.

Overall Performance Summary Concluding with IHPAT Round 241

The following table contains your organization's current and two previous test rounds performance respectively (where applicable). For more information in regard to the determination of proficiency, please visit: www.aihapat.org.

Analyte Class	Round	Round Score	Round Performance	Proficiency Status - Three Round Score
Asbestos	239	4/4	PASS	
	240	4/4	PASS	
	241	3/4	PASS	PROFICIENT

Interpretation Notes:

The denominators represent the total number of samples analyzed. The numerators represent the number of acceptable results.

Pass: Round Score greater than or equal to 75%

Fail: Round Score less than 75%

P - Proficient; NP - Non-proficient; I - Indeterminate (not enough rounds to determine proficiency)

A participant is rated proficient for the applicable IHPAT analyte group if the participant has a passing score for the applicable IHPAT analyte group in two (2) of the last three (3) consecutive PT rounds. A participant is rated non-proficient for the applicable PT analyte group if the participant has failing scores for the associated PT analyte group in two (2) of the last three (3) consecutive PT rounds.

Additional information on the following items are available in the Industrial Hygiene Scheme Plan:

Procedures used to statistically analyze the data, establish the assigned value and standard deviation for proficiency assessment, or other criteria for evaluation; details of the metrological traceability and measurement uncertainty of the assigned value; information about design and implementation of PT scheme. The Industrial Hygiene Scheme Plan is available in the PAT Portal. Measurement uncertainty of any assigned value is also available on the respective certificate of analysis for the round.

Participants shall not describe their proficiency status in a manner that implies accreditation, certification or variations thereof. PAT results pertain only to the participant organization at the location listed on this results report. AIHA PAT Programs makes every effort to ensure that individual participant results are kept confidential and are not made public. Round results are only released to the participant and those entities requiring this information for accreditation, regulatory and contract purposes. New participants are made aware of the arrangement in advance of participation and consent is sought prior to the release of records for participants. PAT reports may not be reproduced or distributed unless copied in its entirety.

IHPAT samples are generated, verified, packaged, and shipped by RTI International under contract with AIHA Proficiency Analytical Testing Programs. Unless otherwise noted, sample homogeneity and stability criteria were satisfied for all samples.

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Performance of all Participants for IHPAT Round 241

 The following table contains aggregate results for all participants **IHPAT Round 241**.

Contaminant	#	Ref. Value	Ref. Std. Dev.**	RSD (%)	Uncertainty of Assigned Value	Total Participants	Total Acceptable	Low*	High*
Asbestos (ASB)	1	194	35	18.0	3.46	731	702	17	12
	2	356	60	16.8	5.91	731	707	21	3
	3	454	91	20.0	8.99	731	569	138	24
	4	86	15	17.4	1.47	731	687	9	35
Mercury (HG)	1	0.7386	0.1183	16.0	0.0394	19	18	1	0
	2	0.5233	0.0487	9.3	0.0162	19	19	0	0
	3	0.3589	0.0423	11.8	0.0141	19	19	0	0
	4	0.8228	0.1247	15.2	0.0416	19	19	0	0
Cadmium (CAD)	1	0.00589	0.00026	4.5	0.00003	115	108	4	3
	2	0.01081	0.00045	4.1	0.00005	115	107	5	3
	3	0.0158	0.00073	4.6	0.00009	115	108	6	1
	4	0.0276	0.00112	4.1	0.00014	115	107	4	4
Lead (LEA)	1	0.0339	0.0015	4.3	0.0002	115	107	1	7
	2	0.1782	0.008	4.5	0.001	115	110	3	2
	3	0.1225	0.0057	4.6	0.0007	115	113	0	2
	4	0.0797	0.0034	4.2	0.0004	115	110	2	3
Manganese (MNG)	1	0.0724	0.0029	4.0	0.0003	115	109	3	3
	2	0.186	0.0074	4.0	0.0009	115	108	5	2
	3	0.0405	0.0016	4.0	0.0002	115	110	5	0
	4	0.1349	0.0054	4.0	0.0006	115	112	1	2
n-Butyl Acetate (BAC)	1	0.0623	0.0042	6.8	0.0007	69	64	5	0
	2	0.25025	0.01392	5.6	0.002289	69	65	2	2
	3	0.4781	0.0274	5.7	0.0045	69	64	5	0
	4	1.0289	0.0448	4.3	0.0074	69	64	3	2
Ethyl Acetate (EAC)	1	0.4645	0.0218	4.7	0.0036	69	65	3	1
	2	0.0639	0.0041	6.4	0.0007	69	65	2	2
	3	0.8073	0.0325	4.0	0.0053	69	64	4	1
	4	0.1467	0.0062	4.3	0.001	69	63	2	4
2-Propanol (IPA)	1	0.0457	0.0058	13.2	0.001	69	64	2	3
	2	0.1732	0.0185	11.1	0.003	69	63	5	1
	3	0.3568	0.0311	8.8	0.0051	69	61	5	3
	4	0.7117	0.0745	10.5	0.0122	69	63	5	1
Airborne Particulates (PAR)	1	0.752	0.03	4.0	0.005	54	50	1	3
	2	1.788	0.072	4.0	0.012	54	53	0	1

Contaminant	#	Ref. Value	Ref. Std. Dev.**	RSD (%)	Uncertainty of Assigned Value	Total Participants	Total Acceptable	Low*	High*
	3	1.465	0.059	4.0	0.01	54	54	0	0
	4	1.065	0.043	4.0	0.007	54	52	1	1
Silica (SIL)	1	0.1177	0.0175	14.9	0.0028	67	63	2	2
	2	0.0407	0.0073	17.8	0.0012	67	62	2	3
	3	0.1513	0.0278	18.4	0.0045	67	63	3	1
	4	0.087	0.0128	14.8	0.0021	67	64	1	2

Note: **The reference group standard deviation is used but is limited to no less than 4% relative standard deviation or no greater than 20% relative standard deviation.

***Low** - number of participant results that are less than the Lower Limit; ***High** - number of participant results that are greater than the Upper Limit.

Units: Asbestos - fiber/mm²; Metals - mg; Organic Solvents - mg; Silica - mg

Reference group/participant data sets for individual methods are not separated out during statistical analysis. Methods used by participants produce comparable data based upon the proficiency samples provided. Methods represented by fewer than eight participant data points are not assessed for comparability.

Technical Comment - Organic Solvents: To accommodate a potential bi-modal distribution between laboratories using carbon disulfide vs. those using carbon disulfide with co-solvents for IPA analysis, PAT Programs has expanded the acceptance range based on the standard deviation from the carbon disulfide reference group participants. The reference mean was derived from the entire reference group.

Additional technical comments or recommendations, when available, shall be shared with participants via the web and participants shall be notified via email.

Additional information on the following items are available in the IHPAT Scheme Plan:

Procedures used to statistically analyze the data, establish the assigned value and standard deviation for proficiency assessment, or other criteria for evaluation; details of the metrological traceability and measurement uncertainty of the assigned value; information about design and implementation of PT scheme. The Industrial Hygiene Scheme Plan is available in the PAT Portal. Measurement uncertainty of any assigned value is also available on the respective certificate of analysis for the round.

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