

Review of User Check for NMAM Method 9106 (Methamphetamine and Illicit Drugs, Precursors, and Adulterants on Wipes by Liquid-Liquid Extraction)

User check samples were prepared by the NIOSH/DART laboratory in order to evaluate NMAM Method 9106 (Methamphetamine and Illicit Drugs, Precursors, and Adulterants on Wipes by Liquid-Liquid Extraction). A total of twenty cotton gauze wipes were spiked with methamphetamine and pseudoephedrine and shipped to the NIOSH contract industrial hygiene laboratory (Bureau Veritas). The samples were analyzed for both compounds as well as for amphetamine, ephedrine, norephedrine, and MDMA. Only significant quantities of methamphetamine and pseudoephedrine were found on the cotton gauze samples except some minimal amounts of ephedrine (between LOD and LOQ) were found on some cotton gauze wipes.

The NIOSH contract industrial hygiene laboratory (Bureau Veritas) analyzed the samples. The procedure followed by the laboratory was as given in the method.

The limit of detection (LOD) was 0.1 ug/wipe and the limit of quantitation (LOQ) was 0.40 ug/wipe for methamphetamine. The LOD was 0.1 ug/wipe and LOQ was 0.32 ug/wipe for pseudoephedrine. The laboratory method blanks were none detected for both methamphetamine and pseudoephedrine. The laboratory control samples recovery were acceptable for methamphetamine but were outside the limits by a small amount for pseudoephedrine. The blind spikes were within the default limits of 80%-120% for both methamphetamine and pseudoephedrine. Replicate analyses were within the 20% acceptable limit.

The table below gives the laboratory data from the laboratory report for methamphetamine:

Sample ID	Spiked Amt	Recovery Amt	% Recovery	Ave Recovery	RSD
Meth-NMAM-213	0.0 ug	ND	NA	-	-
Meth-NMAM-215	0.0 ug	ND	NA	-	-
Meth-NMAM-217	0.0 ug	ND	NA	-	-
Meth-NMAM-218	0.0 ug	ND	NA	0	0
Meth-NMAM-202	0.5 ug	0.71 ug	142	-	-
Meth-NMAM-205	0.5 ug	0.51 ug	102	-	-
Meth-NMAM-212	0.5 ug	0.59 ug	118	-	-
Meth-NMAM-214	0.5 ug	0.37 ug	74	109	26
Meth-NMAM-203	5.0 ug	5.1 ug	102	-	-
Meth-NMAM-206	5.0 ug	5.2 ug	104	-	-
Meth-NMAM-210	5.0 ug	5.5 ug	110	-	-
Meth-NMAM-216	5.0 ug	5.3 ug	106	106	4
Meth-NMAM-201	10.0 ug	10 ug	100	-	-
Meth-NMAM-204	10.0 ug	9.9 ug	99	-	-
Meth-NMAM-219	10.0 ug	10 ug	100	-	-
Meth-NMAM-220	10.0 ug	9.3 ug	93	98	3
Meth-NMAM-207	25.0 ug	23 ug	92	-	-

Meth-NMAM-208	25.0 ug	27 ug	108	-	-
Meth-NMAM-209	25.0 ug	28 ug	112	-	-
Meth-NMAM-211	25.0 ug	28 ug	112	106	9

Another set of four of the lowest level spikes were also sent and analyzed a day later by the laboratory and the results were found to be better than the first set analyzed. The range of recoveries for methamphetamine was from 88% to 102% for an average recovery of 97% and a RSD of 7. The results from the above table give average recoveries of 109%, 106%, 98%, and 106% for the levels of 0.5 ug/wipe, 5.0 ug/wipe, 10.0 ug/wipe, and 25.0 ug/wipe. The relative standard deviations of all test samples ranged from 3% to 26%. All the blanks were none detected (ND) which is good.

A second compound, pseudoephedrine, was spiked on the user check samples and analyzed at the same time as for methamphetamine. No table has been included because methamphetamine was the compound of interest. The recoveries for pseudoephedrine ranged from 83% to 109% at the four concentration levels. These recoveries are very good also.

Overall this user check for NMAM 9106 was excellent and the user check has been passed and is acceptable. It is my recommendation that the draft method 9106 be accepted and placed into NMAM for publication.

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