

# Organic Application Note

## Determination of Mercury in Animal Tissue

### Sample Preparation

Dried and powdered samples can be weighed directly into the boat placed on the balance.

Freeze drying can also be used as a method of drying.

In principle, fresh meat analyses are also possible. Due to the high fat content it is recommended to select a longer decomposition time (250 seconds) as well as to cover the sample in the boat with a Hg- and ash-free strip of filter paper which may serve as a combustion aid. The sample weights should not exceed 100 mg for very high fat samples.

### Sample Weight

Dried, powdered samples or freeze-dried samples up to 150 mg, balance precision of 0.1 mg or better (higher sample weights are possible).

**Boat Type** 614-822-114 Large Nickel Boats.

### Analysis Time

Approximately 350 seconds for a single determination. Replicates (Hg accumulation) are not necessary.

### Instrument Parameters

Drying Time: 60 seconds  
Decomposition Time: 200 seconds  
Waiting Time: 45 seconds

### Calibration

The instrument has been calibrated in the factory by means of Hg standard solutions. The calibration has long-term stability. Before analysis begins, it should be checked using suitable standard check samples (Hg standard solutions or BCR/NIST standards).

### Blank Correction

Prior to analysis the instrument must be purged with internal blanks until blank stability is achieved.

### Typical Results

**Beef Muscle, Nominal Value 0.0026 ppm**

Sample Weight (mg)	ng	ppm
123.1	0.422	0.00343
117.4	0.329	0.00280
122.6	0.402	0.00328
131.9	0.371	0.00281
119.3	0.351	0.00294
129.5	0.386	0.00298

Mean Value: 0.0030 ppm  
SD: 0.0003 ppm  
RSD: 2.58%



# AMA254

## Typical Results (continued)

### Muscle Tissue, Nominal Value 0.188 ppm

Sample Weight (mg)	ng	ppm		
99.8	18.26	0.183		
97.9	18.31	0.187		
101.2	18.92	0.187	Mean Value:	0.187 ppm
99.3	18.77	0.189	SD:	0.002 ppm
97.8	18.39	0.188	RSD:	1.12%

### Pork, Nominal Value 0.003 ppm

Sample Weight (mg)	ng	ppm		
87.5	0.333	0.00380		
102.3	0.399	0.00390		
98.4	0.378	0.00384		
102.6	0.398	0.00388	Mean Value:	0.00386 ppm
95.3	0.360	0.00378	SD:	0.00006 ppm
98.8	0.390	0.00395	RSD:	1.66%

### Pork Liver, Nominal Value 0.003 ppm

Sample Weight (mg)	ng	ppm		
78.6	0.188	0.00239		
79.9	0.213	0.00266		
82.3	0.212	0.00258	Mean Value:	0.00241 ppm
91.5	0.211	0.00231	SD:	0.00021 ppm
93.2	0.199	0.00213	RSD:	8.79%

### Pork Kidney, Nominal Value 1.97 ppm

Sample Weight (mg)	ng	ppm		
77.7	149.96	1.93		
83.6	158.84	1.90		
74.8	145.86	1.95		
88.3	167.77	1.90	Mean Value:	1.93 ppm
73.9	142.63	1.93	SD:	0.02 ppm
85.6	166.06	1.94	RSD:	1.08%



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