

LEAD in Surface Wipe Samples

9100

Pb

MW: 207.19

CAS: 7439-92-1

RTECS: OF7525000

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EVALUATION: PARTIAL

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PURPOSE: Determination of surface contamination by lead and its compounds.

LIMIT OF DETECTION: **2 µg Pb** per sample (0.02 µg/cm² for 100-cm² area) by **flame AAS** or **ICP**;
0.1 µg Pb per sample (0.001 µg/cm² for 100-cm² area) by **graphite furnace AAS**.

FIELD EQUIPMENT:

1. Bags, plastic, sealable (e.g., with attached wire, tape or "zip"-type seal).
2. Sample pads, 2" x 2", sterile cotton gauze (Curity™, Johnson & Johnson™, or equivalent), or ashless quantitative filter paper.
NOTE: Wash'n Dri™ wipes may also be used. Other wipes may not ash properly, or may have a significant lead blank value.
3. Gloves, latex, disposable.
4. Template, plastic, 10 cm x 10 cm, or other standard size.
5. Water, distilled, in plastic squeeze bottle.

SAMPLING:

1. Using a new pair of gloves, remove a gauze pad from its protective package. Moisten the gauze pad with approximately 1 to 2 mL of distilled water.
NOTE 1: Apply no more distilled water than that necessary to moisten approximately the central 80% of the area of the gauze pad. Excess distilled water may cause sample loss due to dripping from the gauze pad.
NOTE 2: If using the premoistened Wash'n Dri™, omit the distilled water.
2. Place the template over the area to be sampled. Wipe the surface to be sampled with firm pressure, using 3 to 4 vertical S-strokes. Fold the exposed side of the pad in and wipe the area with 3 to 4 horizontal S-strokes. Fold the pad once more and wipe the area with 3 to 4 vertical S-strokes.
3. Fold the pad, exposed side in, and place it in a new plastic bag. Seal and label the bag clearly. Discard the gloves.
4. Clean the template in preparation for the next wipe sample .
5. Include two blank pads (moistened and placed in bags) with each sample set.

SAMPLE PREP: Use the procedure of NIOSH Method 7105, including final sample dilution to 10 mL.
NOTE: Additional portions of nitric acid may be needed for complete digestion of the sample, including the pad. Include appropriate media and reagent blanks.

MEASUREMENT: Screening of all samples by flame AAS or ICP, followed by graphite furnace AAS for those samples giving "Not Detected" is an efficient scheme. Use the procedures of NIOSH Methods 7082 (Lead by flame AAS), 7300 (Elements by ICP), 7105 (Lead by graphite furnace AAS), or other appropriate methods.

METHOD WRITTEN

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