



DETERMINATION OF THE **TOTAL MERCURY** IN A FILTRATE OF WASH-OFF SAMPLES FROM CONTAMINATED SURFACES

INTRODUCTION

Quantitative determination of the total mercury content in filtrates of wash-off samples from the surfaces of walls, floors, equipment, and other facilities of manufacturing areas is an effective method for the occupational safety monitoring. An important application of the analysis results is the evaluation of the demercurization efficiency at factories that use mercury or mercury compounds. According to the regulations, a routine demercurization should be carried out regularly during the period of mercury use. Laboratory survey of the demercurization efficiency is carried out by a comparative analysis of the mercury content in the air and rinse samples from contaminated surfaces before and after demercurization.

MEASURING METHOD

Method of determination of the total mercury concentration in filtrates of wash-off samples is based on the reduction of mercury cations to the atomic state using a stannous chloride reducing solution in the reaction vessel of an **RP-91 attachment** (the "cold vapor" technique) and then measuring the mercury atomic concentration in the analytical cell of a **mercury analyzer RA-915M/RA-915+** with the Zeeman background correction.

The mercury content in a sample is determined by the value of the integrated analytical signal using a preset calibration.

The total time needed for determination of mercury is not longer than 2 minutes.

RA-915+/915M is compliant with US EPA 1631, EN M83 methods.

MEASUREMENT RANGE

The measurement range of the mercury concentration in rinse samples is **0.2–10,000 µg/l** (for a sample volume of **5 ml**).

ANALYSIS FEATURES

- Direct analysis without sample preparation.
- Low-cost analysis.
- Rapid analysis.
- Low running cost (Needs no chemical reagent).

EQUIPMENT AND REAGENTS

The following equipment and materials are used for analysis:

- Mercury analyzer RA-915M (RA-915+) with RP-91 attachment;
- PC with Windows® 2000/XP/Vista/7 and dedicated software;
- SRM of mercury ions solution.

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