

Focus on IFA's work

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Test gas device for the realisation of round-robin tests

Problem

In round-robin tests for internal verification of measurement procedures, the test institutes involved were provided by a neutral body with a set of samples which were as identical as possible. The results of round-robin tests are frequently the only means by which participating bodies can document the quality of their own work to third parties. They are an essential element of the external quality assurance of test institutes and laboratories.

In the round-robin tests for in-plant test bodies conducted by the IFA during the last twenty years or so, the participating bodies were supplied with prepared samples for analysis. Round-robin tests of this kind lack an important element of hazardous substance measurement, namely that of sampling. In order to include this element, a new test gas device at the Institute Work and Health of the German Social Accident Insurance (IAG) in Dresden was installed which delivered a homogeneous test gas simultaneously to up to fifteen participants. The participants take samples from this test gas device themselves before analysing them in their own laboratories. In 2005 this test gas device was transferred to the IFA's laboratories.

Activities

The round-robin tests involving sampling have been conducted since 2002. The tests also form part of the quality management system within the Measurement system for exposure assessment



Test gas stream for the performance of round-robin tests including sampling at the IFA

of the German Social Accident Insurance Institutions – MGU, and are used intensively by their laboratories. Numerous company test departments, accredited test institutes, the German regional OH&S authorities, and laboratories elsewhere in Europe also take part in the round-robin tests.

To date, round-robin tests have been performed on the test gas stream on various solvents, inorganic gases and vapours, direct-reading instruments and volatile organic compounds (VOC). In 2009 a round-robin test on aldehydes was added.

Further information on the round-robin tests can be found on the IFA's web site.

Results and Application

The participants in the round-robin tests are informed of the results, which are also published on the Internet in anonymized form. The results constitute an important element of the documentation of test bodies' suitability. Parties commissioning hazardous substance measurements are thus able to obtain information on the performance of the test bodies.

Area of Application

Laboratories of the accident insurance institutions in the MGU, company test departments, accredited third-party test bodies, OH&S inspectorates

Additional Information

- www.dguv.de/ifa/proficiency-testing
- Rosenthal, S.; Maybaum, B.; Seifert, M.; Buchwald, K.; Breuer, D.: Ringversuche mit Probenahme zur Bestimmung von Lösungsmitteln an der neuen Prüfgasstrecke im BGAG. *Gefahrstoffe – Reinhalt. Luft* 63 (2003) No. 9, pp. 355-362
- Seifert, M.; Rosenthal, S.; Buchwald, K.; Maybaum, B.; Breuer, D.: Aufbau einer Prüfgasstrecke im BGAG zur Qualitätssicherung für messtechnische Dienste und Prüflaboratorien. *die BG* (2003) No. 7, pp. 287-290
- Moritz, A.; Breuer, D.: Production of test gases in the ppb range for round-robin tests and quality assurance measures during the measurement of VOCs. *J. Environ. Monit.* (2008) No. 10, pp. 1454-1459

Expert Assistance

IFA, Division 2: Chemical and biological hazards

Literature Requests

IFA, Zentralbereich