Universität Stuttgart

**Institute for Sanitary Engineering,
Water Quality and Solid Waste Management**

Universität Stuttgart
ISWA • AQS BW • Bandtäle 2 • 70569 Stuttgart, Germany

To the participants of AQS Baden-Württemberg

AQS Baden-Württemberg
Telephone
+49 711/685-65446
Telefax
+49 711/685-63769
E-Mail
info@aqsbw.de
Internet
www.aqsbw.de
Date
Stuttgart, 30. November 2015

Proficiency test 2/16
TW S1 – Sweeteners and benzotriazoles in drinking water –

Dear Sirs,

in February 2016 the execution of the above mentioned proficiency test (PT) round „Sweeteners and benzotriazoles in drinking water" is planned.

The PT is carried out under the umbrella of the NORMAN Network of Reference Laboratories for Monitoring of Emerging Environmental Pollutants (http://www.norman-network.net) in cooperation with IWW Water Centre.

Details about the PT round are enclosed. Please read them with care.

If you are interested in participation, please register online via our website http://www.iswa.uni-stuttgart.de/ch/aqs/index.en.html.

Application deadline: 23. December 2015

Alternatively you may use the enclosed application form.

Please consider our general terms and conditions of business for the execution of the PT, which can be downloaded from http://www.aqsbw.de/pdf/agb_en.pdf.

If we receive your application after the deadline we cannot guarantee that participation will be possible.

The production of PT samples in this dimension is accompanied with high effort. Early registration is highly appreciated.

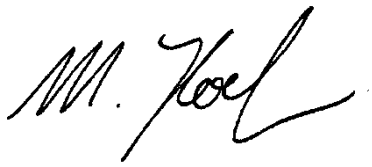
In cooperation with

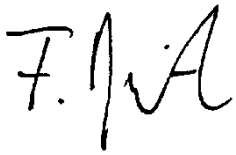
For formal reasons we confirm your application by sending a registration confirmation by fax.
If you do not receive this registration confirmation, you are not registered.

If you have any questions, please do not hesitate to contact us:

AQS Baden-Württemberg, Bandtäle 2, 70569 Stuttgart, Germany
Phone: +49 711 685 65446
Telefax: +49 711 685 63769
E-Mail: info@aqsbw.de
Contact: Heidi Sanwald, Dr. Frank Baumeister, Dr. Michael Koch

Best regards





Dr.-Ing. Michael Koch
Scientific director AQS

Dr.-Ing. Frank Baumeister
PT coordinator

Annex:
Details of the proficiency test exercise
Application form

Institute for Sanitary Engineering,
Water Quality and Solid Waste Management
Bandtäle 2 • 70569 Stuttgart, Germany
www.aqsbw.de

Details of the proficiency test round 2/16
TW S1 – Sweeteners and benzotriazoles in drinking water – (November 2015)

Parameters
- acesulfam
- cyclamate
- saccharin
- sucralose
- 1H-benzotriazole
- 4-methyl-1H-benzotriazole
- 5-methyl-1H-benzotriazole

Matrix
Drinking water

Dates and deadlines
- Registration deadline: 23. December 2015

Please register for this PT preferably via our website (http://www.aqsbw.de). Alternatively you may use the enclosed registration form.

- Dispatch of the samples: 16. February 2016

The sample preparation and dispatch will be organised by IWW

- **Deadline for submission of results: Via our website only. Data input will be possible only until 29. February 2016, 24:00h**

Sample dispatch
Samples will be sent by courier service.

Sample details
- 3 samples for the determination of acesulfam, cyclamate, saccharin, *sucralose*, 1H-benzotriazole, 4-methyl-1H-benzotriazole, 5-methyl-1H-benzotriazole in 1000-ml-ground bottles. Preservation by adding 40 mg/l sodium azide. The samples also contain acetonitrile as solubility promoter.

Permitted analytical methods
Participants are free to choose a suitable method.

Limit of quantification
The analytical methods must be suitable to achieve the following limits of quantification:

parameter	limit of quantification
acesulfam	0,05 µg/l*
cyclamate	0,05 µg/l*
saccharin	0,05 µg/l*
sucralose	0,1 µg/l
1H-benzotriazole	0,05 µg/l
4-methyl-1H-benzotriazole	0,05 µg/l
5-methyl-1H-benzotriazole	0,05 µg/l

*concentration refers to the acid and not to the salt of the respective substance

Execution of the analysis
The samples must be analysed in the own laboratory with own personnel and own equipment. Subcontracting of the analysis is not allowed.

Evaluation and assessment of the single values
The statistical evaluation will be executed according to DIN 38402 – A45 or ISO/TS 20612 "Interlaboratory comparison for proficiency testing of analytical chemistry laboratories" with the combined estimator Hampel/Q-method, a method of robust statistics. The assigned value x_{pt}, derived from the weighings of the spiked samples and the matrix content[1,2] will be used for the assessment of the single values preferably. Only if this is not possible, the Hampel estimator as robust mean value of the participants' data will be used.

If possible, the standard deviation for proficiency assessment σ_{pt} will be taken from a variance function. Otherwise, the standard deviation calculated with the Q method will be used for the calculation of z_U-scores according to DIN 38402 - A45 (chapter 10.4) or ISO/TS 20612 respectively. σ_{pt} will be limited for all parameters as follows:

- lower limit: 5%
- upper limit: 25%

A z-score for a result x is calculated for each measurement result derived from the assigned value x_{pt} and the standard deviation for proficiency assessment σ_{pt}:

$$z = \frac{x - x_{pt}}{\sigma_{pt}}$$

The z-score will be modified to a z_U-score with a correction factor for proficiency assessment (as described in the above mentioned standards).
The tolerance limits are defined as $|z_U| = 2$.

The single results will be assessed as follows:

$\lvert z_u \rvert \leq 2$	satisfacory
$2 < \lvert z_u \rvert < 3$	questionable
$\lvert z_u \rvert \geq 3$	unsatisfactory

Overall assessment
There is no overall assessment of the proficiency test round, but the single parameters are assessed.
A parameter is assessed as successful, if more than half of the values are assessed as "satisfactory".

In addition those values are assessed as "unsatisfactory":
1) that are not determined (if the other samples of this parameters are analysed),
2) that are indicated with "lower than limit of quantification",
3) that have been subcontracted,
4) that have been submitted after the deadline of submission of results.

Participation fee
The participation fee will be 500 € plus transport costs.

[1] Rienitz, O., Schiel, D., Güttler, B., Koch, M., Borchers, U.: A convenient and economic approach to achieve SI-traceable reference values to be used in drinking-water interlaboratory comparisons. Accred Qual Assur (2007) 12: 615-622.

[2] Koch, M., Baumeister, F.: Traceable reference values for routine drinking water proficiency testing: first experiences. Accred Qual Assur (2008) 13: 77-82.

For remarks of the organizer

Registration for the proficiency test round 2/16 - TW S1 “Sweeteners and benzotriazoles in drinking water”

Our laboratory will take part in the proficiency test TW S1 – “Sweeteners and benzotriazoles in drinking water” – provided by AQS Baden-Württemberg. The participation fee of € 500,- plus transportation costs will be paid after receipt of the invoice. I took note of the terms and conditions under http://www.aqsbw.de/pdf/agb_en.pdf.

For remarks of the organizer

Obligation

Our laboratory will perform the analyses in our own laboratory, with own personnel and own equipment.

Details of our laboratory:

	Type or print legibly
Name of the laboratory	
Street	
Postal code, City	
Delivery address	
Billing address	
Country	
Phone / FAX	
E-Mail	
VAT-ID (for participants outside Germany absolutely necessary)	
Contact Person	

date:_____ signature (legally binding):_____

AQS Baden-Württemberg
at Institute for Sanitary Engineering
Bandtäle 2
70569 Stuttgart
Germany