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AQS Baden-Württemberg

To the participants of AQS Baden-Württemberg

Institute for Sanitary Engineering,
Water Quality and Solid Waste
Management

AQS Baden-Württemberg

Contact person

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Proficiency test 3/19
TW S1 – Sweeteners and benzotriazoles in drinking water

2019-01-25

Dear Madam or Sir,

in April 2019 the execution of the above mentioned proficiency test (PT) round TW S1 „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/rv/anm_rv.en.php?id=197.

You will receive a confirmation of receipt by e-mail. With a second e-mail we will bindingly confirm your application to the PT. You are not registered if you do not receive any e-mail.

Application deadline: 15 February 2019

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.

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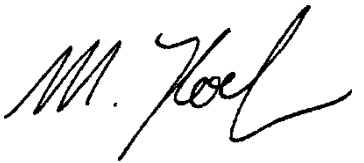
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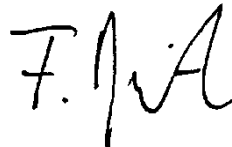


If you have any questions, please do not hesitate to contact us:
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Contact: Mandy Wünsche, Dr. Frank Baumeister, Dr. Michael Koch

Best regards



Dr.-Ing. Michael Koch
Scientific director AQS



Dr.-Ing. Frank Baumeister
PT coordinator

Annex:
Details of the proficiency test exercise



Details of the proficiency test round 3/19

TW S1 – Sweeteners and benzotriazoles in drinking water – April 2019

Parameters

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

Matrix

Drinking water

Dates and deadlines: 15. February 2019

Please register for this PT only via our website www.aqsbw.de.

You will receive a confirmation of receipt by e-mail. With a second e-mail we will bindingly confirm your application to the PT. You are not registered if you do not receive any e-mail.

Dispatch of the samples: 09 April 2019

Deadline for submission of results: 29 April 2019; 24:00h online via internet.
Results submitted after the deadline will not be accepted.

Sample dispatch

Samples will be sent by courier service.

Sample details

- 3 samples for the determination of acesulfam, cyclamate, saccharin, sucralose, 1-H-benzotriazole, 4-methyl-1H-benzotriazole, 5-methyl-1H-benzotriazole in 1000-ml glass bottles with ground glass plug. 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 able to achieve following limits of quantification:

parameter	limit of quantification [$\mu\text{g/l}$]
acesulfam	0,05 $\mu\text{g/l}$ *
cyclamate	0,05 $\mu\text{g/l}$ *
saccharin	0,05 $\mu\text{g/l}$ *
sucralose	0,1 $\mu\text{g/l}$
1H-benzotriazole	0,05 $\mu\text{g/l}$
4-methyl-1H-benzotriazol	0,05 $\mu\text{g/l}$
5-methyl-1H-benzotriazol	0,05 $\mu\text{g/l}$

*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.

Report of the result

The samples must be analysed in duplicate by the complete method (sample preparation and measurement). Please submit the results as average values in µg/l with three significant digits.

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 preferably used for the assessment of the single values. 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 the variance function for the calculation of the z_U -scores according to DIN 38402 - A45 (chapter 10.4) or ISO/TS 20612 respectively. σ_{pt} will be limited for both parameters as follows:

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

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

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

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:

$ z_U \leq 2.0$	satisfactory
$2.0 < z_U < 3.0$	questionable
$ z_U \geq 3.0$	unsatisfactory

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.

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.