University of Stuttgart
Germany

Institute for Sanitary Engineering, Water Quality and Solid Waste Management

AQS Baden-Württemberg

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AQS Baden-Württemberg

To the participants of AQS Baden-Württemberg

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23.06.2025

Proficiency test 8/25
TW S1 – Sweeteners and benzotriazoles in drinking water

Dear Madam or Sir,

in September 2025 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 PT portal. You will reach this portal via our website http://www.aqsbw.de/en. For the first usage of the web portal, you must create a new user. If the e-mail address is not known to the system, this user must be verified. Please plan time for this registration process.

Application deadline: 11.07.2025

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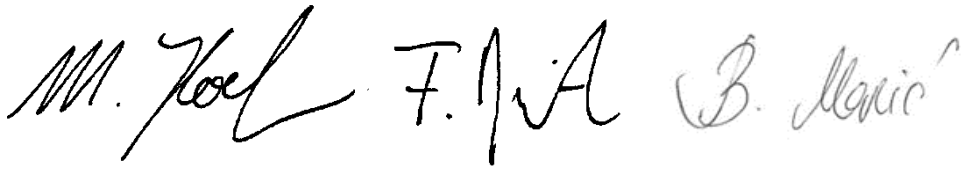
Best regards



Dr.-Ing. Michael Koch	Dr.-Ing. Frank Baumeister	Dipl.-Biol. Biljana Marić
Scientific director AQS	PT coordinator	assist. PT coordinator

Annex:
Details of the proficiency test exercise

Details of the proficiency test round 8/25
TW S1 – Sweeteners and benzotriazoles in drinking water – (September 2025)

Parameters

- acesulfam
- cyclamate
- saccharin
- sucralose
- 1H-benzotriazole
- 4-methyl-1H-benzotriazole
- 5-methyl-1H-benzotriazole
- sum of benzotriazoles

Matrix
Drinking water

Dates and deadlines
Registration deadline: 11.07.2025
Please register for this PT only via our PT portal (accessible via our website).

You will receive a confirmation of receipt by e-mail and your registration is documented in our PT portal.

Dispatch of the samples: 02.09.2025

Deadline for submission of results 22.09.2025; 23:59 h , the results must be reported online via the PT portal of AQS Baden-Württemberg.
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. The sample will be at least 50 ml. If this volume is not enough for you, please contact us. 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 laboratories have to ensure that they use methods with following limits of quantification:

parameter	limit of quantification [µg/l]
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-benzotriazol	0,05 µg/l
5-methyl-1H-benzotriazol	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 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 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:

$\|z_U\| \leq 2.0$	satisfacory
$2.0 < \|z_U\| < 3.0$	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 within the tolerance limit,
2) that are not determined (if the other samples of this parameters are analysed),
3) that are indicated with "lower than limit of quantification",
4) that have been subcontracted.

Participation fee

The participation fee will be 580 € plus transport costs.