ORGREZ, a.s., Ambient air monitoring and fuel analysis division
Budovatelů 2531, CZ 434 01 Most
tel. +420 476 702 785
imise@orgrez.cz, paliva@orgrez.cz

Z 7014

Proficiency Testing Group

proficiency testing provider no. 7014 accredited by ČIA according to ČSN EN ISO/IEC 17043:2010

Instructions for Participants

Dear participants,

Based on your application to the proficiency testing program ZZ/UHLI/A,S,Q,C,H,N,V/2017 (interlaboratory comparison) we are sending you detailed instructions. The concept of the proficiency testing programme in the Proficiency Testing Group (SZZ) ORGREZ, a.s. comes out from application of the standard ČSN EN ISO/IEC 17 043 (01 5264) Conformity assessment – General requirements for proficiency testing.

Tested entries

Tested entries are sets of six analytic samples of solid fossil fuels, **4x brown coal (blue containers) and 2x black coal (containers with red caps)**. The ash, content of sulphur, gross calorific value, the content of carbon, hydrogen, nitrogen and volatile matter will be determined in two parallel measurements. These samples were prepared in accredited testing laboratory. All sets of samples were verified for homogeneity. After finishing of proficiency testing for all sets of samples stability will be verified. The analyses for homogeneity and stability were/will be performed in accredited testing laboratory.

The samples are labelled with unique numeric codes which do not comply with the names of participants. In case of not receiving the samples in time according to the schedule or in case of receiving damaged samples, please contact the proficiency testing provider.

The samples are distributed between 3. 4. 2017 and 16. 4. 2017 as a registered parcel or in person by ORGREZ, a.s. employees together with these instructions and forms to be used for presentation of the results of the tests performed in your laboratory and other additional information. Please handle the samples in the same way as you handle any other standard samples in your laboratory. Keep samples away of direct sunshine and high temperature. For both parallel determinations it is necessary to have the same conditions, it means both determinations should be done on the same day, by the same operator, on the same equipment and with the same chemicals used. **Measured values should be reported with two decimal places, three decimal places for gross calorific value.**

Result form is available for download on http://www.orgrez.cz/en/services/proficiency-testing/ web site. **We prefer filling the result form by electronic means**.

Please send the results on the attached forms by **14. 5. 2017** by mail to the following address Most, Budovatelů 2531, 434 01 or send via e-mail to bohuslava.kroupova@orgrez.cz.

Time schedule:

Registration of participants:		to: 26. 2. 2017
Sample preparation:	from: 27. 2. 2017	to: 2. 4. 2017
Sample distribution:	from: 3. 4. 2017	to: 16. 4. 2017
Testing:	from: 17. 4. 2017	to: 14. 5. 2017
Delivery of results:		to: 14. 5. 2017
Statistic data analysis:	from: 15. 5. 2017	to: 25. 6. 2017
Distribution of final results:	from: 26. 6. 2017	to: 9. 7. 2017
Comments, appeals:	from: 10. 7. 2017	to: 23. 7. 2017

Additional information will be used for evaluation and classification of the results, or for explanation of the possible outliers**. Please pay attention while filling in additional information in the form F56/SZZ/4 Results of the proficiency testing programme participant.** In the table below there are some examples of the additional information, please take into account that example cannot be complete. **The laboratory can always mention its own methods/procedures.** If the method does not refer to a standardized procedure, please mention the other source (literature, legislation, users guide etc.). **As uncertainty of the results please declare the value that laboratory declares for every determined characteristics as expanded uncertainty (k=2) with note if the uncertainty is absolute or relative.**

Evaluation

The results will be evaluated according to the standard ČSN EN ISO/IEC 17 043 (01 5264). The results will be used exactly as they were filled in the attached form F56/SZZ/4. If the participant corrects its results on its own decision, the correction will be accepted. In the compliance with the requirements of the standard ČSN EN ISO/IEC 17 043 statistical methods (according to ISO 13528) with performance evaluation according to the z-score will be used for laboratory performance testing. The differences will be compared with standardized values for reproducibility. As a reference value we will use suitable mean, characterising relevant distribution of the value set of results after taking out the outliers. In case of low number of valid results (4–20) usage of Horn procedure will be considered.

Proficiency Testing Results

The results will be included in the summarizing final report. They will be presented with code numbers given to the individual participants. The codes of the individual participants are secret. Every participant knows only its own number. This will keep the privacy of results. Every participant will receive Certificate on participation in the proficiency testing programme and identification of its own code.

The participants can appeal against the performance evaluation results in the proficiency testing programme ZZ/UHLI/A,S,Q,C,H,N,V/2017 within two weeks after receiving the results. The reasons for appeal will be revised and written statement will be issued (acceptance/refusal).

Wishing you successful cooperation

Mgr. Jan Pomahač – Head of the Proficiency Testing Group
Bc. Bohuslava Kroupová – Coordinator of the Proficiency Testing Group
Ing. Štěpán Klimeš – Quality manager of the Proficiency Testing Group

ORGREZ; a.s., Hudcova 321/76; 612 00 Brno; www.orgrez.cz
Ambient air monitoring and fuel analysis division, Budovatelů 2531, 434 01 Most
jan.pomahac@orgrez.cz; mobil +420 602 749 810, tel. +420 476 702 785
bohuslava.kroupova@orgrez.cz, tel. +420 476 702 207
stepan.klimes@orgrez.cz, mobil +420 725 956 808, tel. +420 476 702 207

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Examples of additional information declaration

	DESCRIPTION	EXAMPLE	
METHOD / PROCEDURE	Method you are using	A^d	- burning in furnace - radiometric analyser
		S^d	- Eschka method - own method
		Q_s^d	- measuring of temperature increase in calorimeter - method according to the equipment manufacturer
		C^d	- instrumental method - Liebig method
		H^d	- instrumental method - Liebig method
		N^d	- instrumental method - Titrimetric method after distillation
		V^d	- instrumental method
STANDARD	Standard you are using	A^d	- ČSN ISO 1171
		S^d	- ČSN ISO 19 579 - ČSN 44 1379 (Eschka)
		Q_s^d	- ČSN ISO 1928
		C^d	- ČSN ISO 29541 - ČSN ISO 625
		H^d	- ČSN ISO 29541 - ČSN ISO 625
		N^d	- ČSN ISO 29541 - ČSN ISO 333
		V^d	- ČSN ISO 562 Coke and black coal - ČSN ISO 5071-1 Brown coal
EQUIPMENT	What equipment was used	A^d	- TGA 701 - muffle furnace
		S^d	- LECO SC 144DR - LECO SC-DRPS 140 - muffle furnace
		Q_s^d	- Laget MS10A - LECO AC 600 - IKA C 5000 - PARR 6400
		C^d	- LECO TRUSPEC CHN - LECO CHN 628 - PE 2400 SERIES II CHN - ANALYTIC JENA MULTI N/C CHN
		H^d	- LECO TRUSPEC CHN - LECO CHN 628 - PE 2400 SERIES II CHN - ANALYTIC JENA MULTI N/C CHN
		N^d	- LECO TRUSPEC CHN - LECO CHN 628 - PE 2400 SERIES II CHN - ANALYTIC JENA MULTI N/C CHN
		V^d	- LECO TGA 701 - muffle furnace

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PRINCIPLE	The principle of the equipment	**A^d**	- gravimetric analysis - thermogravimetric analysis
		S^d	- IR spectroscopy - gravimetric analysis (Eschka)
		Q_s^d	- adiabatic calorimetry - isoperibolic calorimetry.
		C^d	- gravimetric analysis - IR spectroscopy
		H^d	- IR spectroscopy - gravimetric analysis
		N^d	- Semi-micro Kjeldahl method - thermal conductivity detection
		V^d	- gravimetric analysis - thermogravimetric analysis
PHYSICAL CALIBRATION	Verification of the physical qualities of the equipment used for determination How often is verification performed	**A^d**	- scales calibration - temperature calibration
		S^d	- scales calibration - temperature calibration - volume calibration
		Q_s^d	- scales calibration - temperature verification - volume calibration
		C^d	- scales calibration - temperature calibration
		H^d	- scales calibration - temperature calibration
		N^d	- scales calibration - temperature verification
		V^d	- scales calibration - temperature calibration
CHEMICAL CALIBRATION	Using of reference material (RM) How often it is verification performed	• Internal reference material (IRM); • certified ref. material (CRM); • standard (LECO, BCR, LGC, TEKO, ...); • clean chemicals/matrix RM	
UNCERTAININTY	Always use expanded uncertainty U with k = 2	± 0,8 weight. % ± 3 % relative	