Delta Coal Control GmbH

DCC

International Proficiency Testing Agency

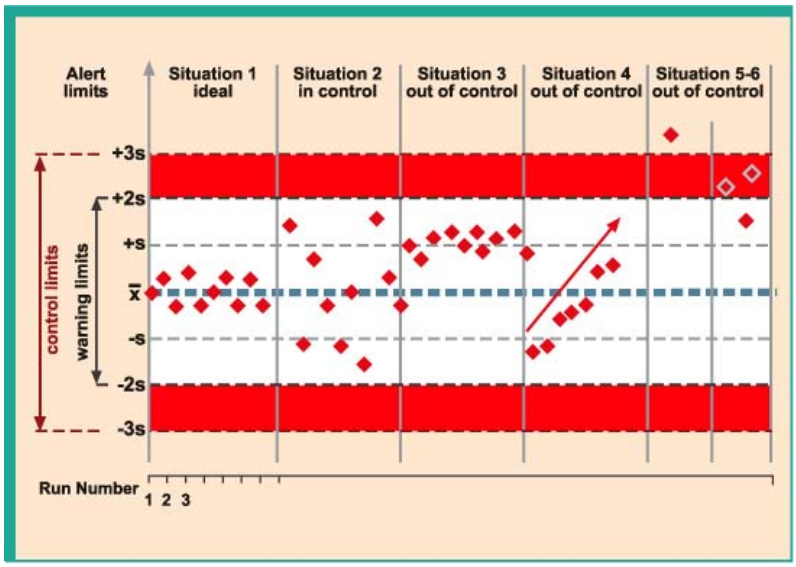
Hard Coal
Coking Coal
Lignite
Coke
Petroleum coke
Hard Coal Fly Ash
FGD-Gypsum
Ash
Sewage Sludge
Biofuels
Biochar
Peat
Wood waste
Wood ash
Solid recovered fuels
Sampling

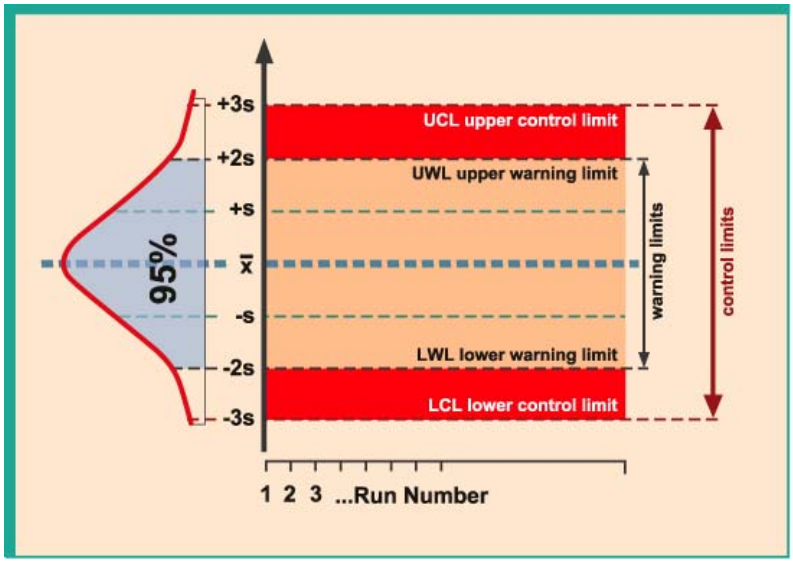
IPTA®

Improve
Precision
Trueness
Accuracy

Catalog 2017/ 2018

Contents:





1. Quality assurance for Testing Laboratories

We offer regulary interlaboratory tests (proficiency tests) for analytics and sampling of solid fuels. Quality assurance for laboratories.

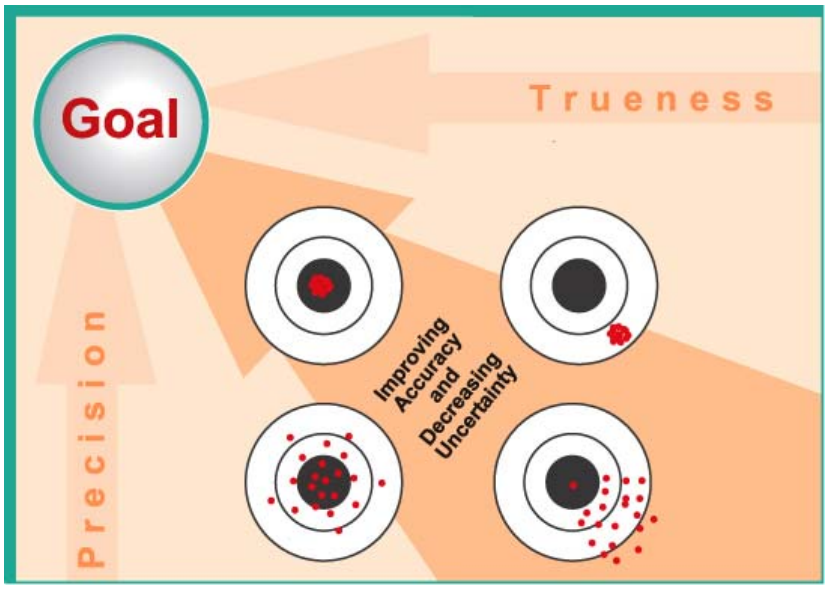
Our international proficiency tests address themselves especially to accredited testing laboratories, who can verify the required quality assurance of test results in the DIN EN ISO/IEC 17025. Even for non-accredited laboratories, interlaboratory tests are a necessary tool for quality assurance. They are used for internal monitoring and external presentation of the laboratories quality and are performed according to the specifications of DIN EN ISO/IEC 17043 and ISO Guide 43. Participation is open to all interested laboratories worldwide.

Our proficiency tests are listed in EPTIS: European Proficiency Testing Information System (www.eptis.org). So far, more than 300 laboratories from 40 countries have successfully participated in the DCC interlaboratory tests. The laboratories can analyze over 940 parameters at more than 29 different test objects. The test items include the following categories: regular fuels, hard coal, lignite and peat, the category coke, coking coal, petroleum coke (petroleum coke), power plant by-products, fly ash, laboratory ash, REA gypsum, biogenic solid fuels, solid recovered fuels and sewage sludge. In the transport safety category we have included the UN-N4 test for self-heating and the test for the determination of the TML moisture limits for transport, (vibrating table method, penetration test or Proctor / Fagerberg test).

In particular, we would like to highlight the DCC proficiency test manual sampling of hard coal according to ISO 18283. DCC is the world's only provider of the interlaboratory test, manual sampling of steam coal. Furthermore, we qualify our clients through training and individual consultations on the topics of analysis, sampling and quality assurance according to DIN EN ISO/IEC 17025.

1.1 *IPTA*®-Project „Improve Precision, Trueness and Accuracy"

IPTA® stands for "Improve Precision, trueness and accuracy". Improving of precision, trueness and accuracy this is the goal of the ***IPTA***®-project an the DCC-proficiency-tests: precise, correct and accurate laboratory results! The DCC proficiency tests support the laboratories to achieve this goal!



2. DCC Proficiency Test Solid Fuels Analytic

The DCC Proficiency Test Solid Fuels Analytic takes place once a year.
Samples shipping period is from January to April.
(Registration by enclosed DCC order form **DCC 01 EN.pdf**)

Available Test Objects:

#1000 Hardcoal sample IPTA
#1001 Hardcoal: Special-Testing, Coking coal
#1020 Hardcoal UN N.4 Test, self-heating
#1022 Charges that can be pulpy, TML, IMSBC **NEW**
#1002 IPTA Lignite **NEW**
#1002A Lignite <10 mm, Special analysis
#1003 IPTA Coke **NEW**
#1004 Coke 19-22,4 mm, CRI, CSR
#1005 Furnace Coke >40 mm
#1006 IPTA Petroleum Coke **NEW**
#1007 A Hardcoal Ash (815°C)
#1007 B Lignite Coal Ash (815°C)
#1024 Wood Ash **NEW**
#1025 Peat **NEW**
#1008 Hardcoal Fly Ash
#1014 Solid recovered fuels SRF
#1018 A FGD Gypsum (hardcoal fiering)
#1018 B FGD Gypsum (lignite fiering)
#1009 Sewage Sludge, dry (sterile)
#1010 Wood Pellets
#1011 Wood Chips
#1023 Wood Waste
#1012 Char Coal /Barbecue charcoal
#1013 Olive kernel
#1015 Palm kernel
#1016 Coffee Grounds /extraction residue
#1017 Biochar
#1019 Miscanthus-Pellets
#1050 Iron ore **NEW**

3. DCC Proficiency Test Programs (DCC-PTP)

The DCC proficiency tests programs (DCC-PTP) are new. Worldwide participation allows every laboratory to achieve a competitive edge in the marketplace. The shipping of test objects to the participants happens three times per year (February, June and October). The laboratories receive an individual evaluation. The final individual statistical evaluation reports will help your laboratory: Monitor strengths and weaknesses of your laboratoro performance, Periodically compare test results and calculated statistical parameters with other laboratories worldwide, Demonstrate proficiency in the specific analysis to meet laboratory accreditation requirements. (Registration by enclosed DCC order form **DCC 11 EN.pdf**).

Available Test programs are:

1100 Hardcoal

1200 Solid Biofuels

1300 Coke

4. DCC Express Proficiency Test

Especially for accredited laboratories for an upcoming audit to demonstrate participation in proficiency testing in the short term, we offer the DCC-Express-PT. Shipping with DHL-Express and the evaluation is carried out within 48 hours after receiving the results. Registration is possible throughout the year for the test objects mentioned in the registration form. (Registration by enclosed DCC order form **DCC 10 EN.pdf**).

5. DCC Proficiency Test Sampling

5.1 DCC Proficiency Test Sampling of Steamcoal #2000

Proficiency tests in analytical chemistry are already well established and essential tools for quality assurance as well as proof of competence of accredited laboratories. Proficiency tests for the sampling of solid materials are still relatively rare, or not offered. This is a big disadvantage, because the influence of sampling on the test results is well known.
The sampling is critical to the quality of measurement results. Systematic errors in the sampling cannot be compensated in the laboratory analysis.

The sampling error can be larger by several orders of magnitude than the analytical error. The rule is: "The digits before the decimal point of a measured value the sampler is responsible for, the digits after the decimal point the chemist in the laboratory."The DCC Proficiency Test Manual Sampling of Steamcoal (Hard coal) takes place once a year. Schedule: May. DCC is the world's only supplier in this field. The sampling proficiency test is performed on two consecutive days. On the **first day** the organization and safety briefings are discussed. This is followed by a seminar on the theory of manual sampling and the determination of the sampling plan.

On the **second day** the staff of the participating sampling institutes (laboratories), execute a representative sampling according to ISO 18283 standard with their own equipment by (ISO-shovel/scoop, containers, bags, PPE). The laboratories of the participants generate tow laboratory samples (10 kg, <10 mm) on site or in the laboratory. One of the laboratory sample will be shipped to the DCC GmbH. The laboratory of the participant makes in the second laboratory sample the determination of the ash content (dry, ISO 1171) and a determination of the total moisture (ar, ISO 589). The DCC-reference-laboratory carry out the same tests in the received Laboratory samples of the participants. The measurement results are evaluated statistically.
(Registration by enclosed DCC order form **DCC 02 2000 EN.pdf**).

5.2 DCC Proficiency Test Sampling of Iron ore and alloy *#3000*

The DCC Proficiency Test sampling of ores and alloys will take place over two days. On the **first day** the organization and safety briefings are discussed. This is followed by a seminar on the theory of manual sampling and the determination of the sampling plan. The sampling takes place according to ISO standards. Thereafter, the sampling plan and methods of sampling is explained. On the **second day** the staff of the participating sampling institutes (laboratories), execute a representative sampling according to ISO standard with their own equipment by (ISO-shovel/scoop, containers, bags, PPE). The laboratories of the participants generate two laboratory samples. One of the laboratory samples will be shipped to the DCC GmbH. The other one will be kept in laboratory. In both samples, the key parameters are determined for quality assessment. Both analytical results are statistically evaluated.
(Registration by enclosed DCC order form **DCC 02 3000 EN.pdf**)

5.3 DCC Proficiency Test Sampling of Solid recovered fuels *#4000*

The DCC proficiency test sampling of solid recovered fuels takes place over two days. On the **first day**, training is held for the representative sampling according to the relevant ISO standards. After that the sampling plan and methods of sampling will be explained. On the **second day** the participants carry out a representative sampling according to ISO with their own equipment (ISO shovel, container, bags, PPE). The laboratories of the participants generate two laboratory samples. One of the laboratory samples will be shipped to the DCC GmbH. The other one will be kept in laboratory. In both samples, the key parameters are determined for quality assessment. Both analytical results are statistically evaluated.
(Registration by enclosed DCC order form **DCC 02 4000 EN.pdf**)

5.4 Place and time for the Manual Sampling Proficiency Tests

The proficiency tests of sampling only takes place when a sufficiently large number of participants is registered. Proficiency test manual sampling of hard coal takes place annually. The proficiency test manual sampling of solid recovered fuels and ores are offered alternately. For the exact places and times, please refer to the above mentioned order forms.

6. Retain Samples

For training and practice purposes, we offer our test samples from older DCC proficiency tests. In addition to the test object, you will receive a complete evaluation with the precision data from the proficiency test as a PDF document only by e-mail. The statistical evaluation of the data takes place on the basis of robust statistical methods (Hampel estimator, Q-method, is defined in ISO/ TS 20612 (2007), DIN 38402-A45 (09-2013), DINEN ISO/IEC 17043 and DIN ISO 13528). The sample is shipped only as long as stocks last.
The order lists are constantly updated.
(Registration whole year by enclosed DCC order form **DCC 06 EN.pdf**).

7. Reference materials and Equipment

Reference materials are essential in the calibration of instruments and to assess a measurement method. About the ***IPTA***®-project, the DCC GmbH provides the following reference materials to improve the precision, trueness and accuracy in the analysis of solid fuels or from plant by-products. (Registration whole year by enclosed DCC order form **DCC 07 EN.pdf**).

The following reference materials and Equipment are available:

Reference materials coal/coke/ash
#2001 IPTA Green High Volatile Bituminous Coal
#2002 IPTA Blue Medium Volatile Bituminous Coal
#2003 IPTA Yellow Low Volatile Bituminous Coal
#2004 IPTA Red Anthracite
#2009 IPTA Magenta Hard Coal **
#2005 IPTA Silver Coke
#2008 IPTA Petrol Petroleum Coke
#2010 IPTA lignite**
Reference Materials RFA
#2006 IPTA Black Hardcoal Ash
#2007 IPTA Brown Lignite Ash

Equipment UN N4 Test
#3001 sample container, (1 Liter), 100 mm, 0,05 mm
#3002 Container cover, 110 mm, 0,60 mm
#3003 Sample container (15,625 ml) 25 mm 0,05mm
#3004 Container Cover, 35 mm, 0,60 mm
#3005 Container cover, 150x150x250 mm, 0,595 mm

**test objects #2009, #2010 are just available from Nov. 2017.

8. DCC Training Courses

In addition, we qualify our clients by training and individual consultations on the topics of analysis, sampling and quality assurance according to ISO/IEC 17 025
(see website: http://www.dcc-germany.org/en/trainingcourses).

9. Terms of transaction

1 Procedure: **The Proficiency tests PT-Analytics, PTP-Proficiency-Test-Program and PT-Express are carried out according to EN ISO / IEC 17043.**

2 Anonymity: The interlaboratory tests are anonymous. Each laboratory gets an own labcode-number.

3 Registration deadline:

PT-Analytics: registration until 31. March ,
PTP-Proficiency-Test-Program: The registration is possible throughout the year.
PT-Express: The registration is possible throughout the year.
(Please use order fax or Email to **order@dcc-germany.org**)

4 Shipping test objects:

PT-Analytics: The sample dispatch takes place from January to May.
PTP-Proficiency-Test-Program: The sample shipment takes place in the months of February, June and October.
PT-Express: Sample shipping is by DHL Express within two business days.

5 Deadline reporting results:

PT-Analytics: latest until **30. June sends results to report@dcc-germany.org .**
PTP-Proficiency-Test-Program: "Sample 1" until 31. March, "Sample 2" until 31. July, and "sample 3" until 30. November to PTPreport@dcc-germany.org.
PT-Express: no later than 2 months after sample shipment to report@dcc-germany.org
Later incoming results cannot be taken into evaluation.

6 Final evaluation report:

PT-Analytics: September,
PTP-Proficiency-Test-Program: December,
PT-Express: Within 48 hours after receiving the results.

7 Charging: **PT-Analytics, PTP-Proficiency-Test-Program** and **PT-Express.** Invoice will be submitted after the registration and is considered as a confirmation of registration. The price shall be payable immediately after receipt of the invoice and is due and payable within 14 days from receipt of the proper invoice. Payment of the product prices is effected via bank transfer to the account specified by the contracting party (DCC GmbH). The delivery of samples takes place after receipt of payment.

8 Terms of Cancellation:

Cancellations must be made in writing!
PT-Analytics: Participation Cancellation is free of charge up to 10 days after ordering.
PTP-Proficiency-Test-Program: Cancellation is free of charge up to 15 days after ordering.
PT-Express: Cancellation is free of charge up to 2 days after ordering**.**
After delivery of samples will be charged 100 % of the lump sum price!

PT-Manual Sampling: Cancellations must be made in writing.
If a participant is unable to participate, a substitute negotiable without charge is possible. In case of cancellation of a participant the fees shall be:
- Up to 90 calendar days prior to the event: no fee
- Less than 90 calendar days before the event: 70% of the registration fee
- Less than 30 calendar days before the event: Full registration fee
- Failure to appear (for whatever reason) is to pay the full registration fee.

If the number of participants is less 10 (Minimum number of participants), the organizer reserves, to postpone or cancel the event.

9 Indication of the Results:

The results are registered into the download Excel files
(Download **www.dcc-germany.org**).
Please don´t change or close the filled Excel files. Additions are to be registered only in the lower part of the files.

10 Copyright: Any reproduction, including use of excerpts or commercial use of the proficiency test evaluation requires prior written consent from DCC GmbH, Herten, Germany

11 Sample: The use of the test samples is exclusively permitted for our interlaboratory test. The use for other purposes (in particular own laboratory comparisons) requires the previous, written permission of the DCC GmbH, Herten Germany.

12 Tests: Only the investigations are accomplished, which are usual in the participating laboratory. Subcontract assignment is to be marked.

13 Test Methods: The test methods are specified in the Download Excel Files. Abnormal test methods shall be indicated. Comparable CEN / EN / ISO / ASTM-standards or identical national standards, instrumental methods and in-house method are allowed.

14 Expression of results:

Only **one double-test** is made in each case. If the difference between the individual results is larger than the **repeatability** in the appropriate standard method, a further double-test is accomplished. The results of **both double-tests** have to be reported.

15 Storage: The samples should be stored dry, cool and protected against damage of the foil/packing up to the examination.

16 Analysis period: After opening the gas-proof sample bags and/or sample containers the determination of total moisture is to be accomplished immediately. The other investigation parameters are to be determined within the following 5 working-days. This procedure is to be kept absolutely, in order to avoid losses of water and oxidation influence. The analysis (**PT-Analytics**) should be accomplished latest until **30 June** .

17 Method of evaluation:

Statistical evaluation of the data is done on the basis of methods of robust statistics (Hampel estimator, Q-method, is defined in ISO/ TS 20612 (2007), DIN 38402-A45 (09-2013), DIN EN ISO/IEC 17043 and DIN ISO 13528).

18 Laboratory evaluation:

For the final assessment of the laboratory performance takes place a Z_u-score calculation. With a result $|Z_u| \leq 2.04$ the interlaboratory test is successful. Individual case decisions reserve.

19 Certificate: **PT-Analytics:** In case of successful participation the participants get a certificate in English by letter post.

Passed with ≥ 80% of the results with a $|Z_u|$-score less than ≤2, the laboratory receives a "**Certificate of Excellence yyyy**"

Passed with < 80% of the results with a $|Z_u|$-score less than ≤2, the laboratory receives a "**Certificate yyyy**"

PTP-Proficiency-Test-Program: At the end of the year, participants will receive a certificate of successful participation in the English language by letter post.

PT-Express: Participants will receive a certificate for 50.00 EUROS (net) in English on request.

20 Error Definitions:

-Laboratory mean values that were outside the tolerance ranges defined by Z_u-scores
-Values, where the minimum requirements (MR) limit has not been reached
-Values that were specified with "<" above minimum requirements (MR) limit

-Values that were specified with ">" below minimum requirements (MR) limit
e.g. Determination of ash fusibility

-Values with digits after the decimal point that fall below of the minimum requirements, will evaluated with the value of the minimum requirement.
E.g.: laboratory value: 0.0003, MR: 0,001, evaluation PT: 0,001

-Values that were specified with the wrong dimension

-Values that have not arrived within the specified deadline

-Values that have not the desired number of retries

21 Publication: **PT-Analytics**:

The proficiency test results will be published on the website in the internal area 2 weeks before the DCC meeting. The password for the internal area will be communicated to the participants by Email. The participants commit themselves to check immediately their results for gross errors or outliers and to communicate these to the DCC-GmbH by email (report@dcc-germany.org) until 03. October.
Later incoming corrections will not evaluated.

22 Claims:

Complaints are to be submitted in written form to the project leader and will be discussed in the expert committee. The expert committee submits a proposition to the project leader whether the complaint will be accepted or refused. The last decision will be made by the project leader, and/or the management of the DCC-GmbH.

23 What is the difference between "DCC Proficiency Test Analytics" , "DCC Proficiency Test Programs (DCC-PTP)" and PT-Express?

The DCC Proficiency Test Analytics is offered only once a year!
Schedule: Jan/March.
The test methods are specified in the Download Excel Files. Abnormal test methods shall be indicated. Comparable CEN / EN / ISO / ASTM-standards or identical national standards, instrumental methods and in-house method are allowed.
Available test objects number: # 1000 to # 1050 in the Catalog.
The DCC Proficiency Test Programs (DCC-PTP) is offered three times a year.
Schedule: February, June and October.
Deliveries are made automatically. The orders are renewed each year.
The test methods are specified in the Download Excel Files. Abnormal test methods shall be indicated. Comparable CEN / EN / ISO / ASTM-standards or identical national standards, instrumental methods and in-house method are allowed.

Available test programs:
#1100 Hardcoal
#1200 solid Biofuels
#1300 Coke

In DCC-PTP three different samples will be sent.
The DCC Express Proficiency test registration is possible throughout the year.
Especially for accredited laboratories for an upcoming audit to demonstrate participation in proficiency testing in the short term, we offer the DCC-Express-PT. Shipping with DHL-Express and the evaluation is carried out within 48 hours after receiving the results.
Registration is possible throughout the year for the test objects # 1000- # 1050.

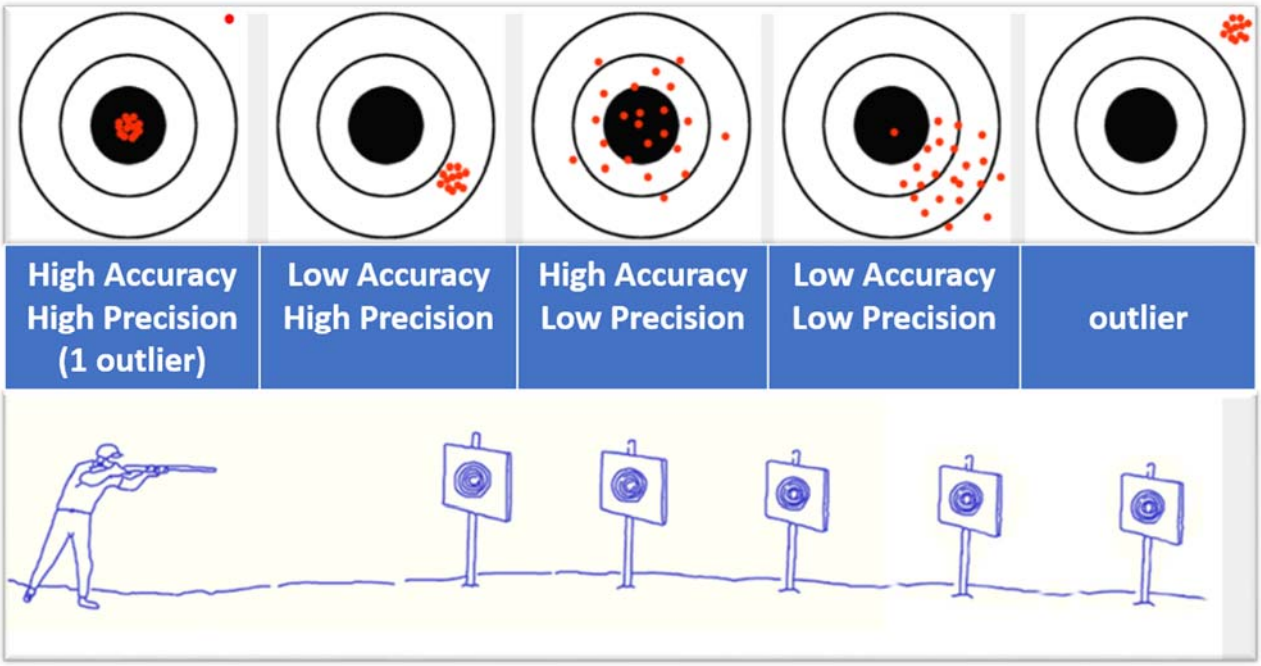
24 Homogeneity and stability of the proficiency test items:

The assessment of homogeneity will be performed before the distribution of the test items to the participants (according to ISO 17043, ISO 13528, ISO Guide 34 and ISO Guide 35). The assessment will be performed after the test items have been packaged in the final form.
If applicable there is a statistically random selection of a representative number of test items from the whole batch in order to check the homogeneity of the material. The "bottle-to-bottle" variability for significant parameter will determined.

25 Customs tariff numbers:
The Customs Tariff Numbers are available in the download below: **DCC 05 DE_EN**.pdf.

26 Terms of condition: The general trading conditions of the DCC-GmbH are valid.

27 Area of jurisdiction: Herten, Germany



10. Test objects

On the following pages, the 29 test objects with the test methods are listed by category offered in the Pr2ficiency tests. The test procedures are also included in the Excel files for submitting the results. Further alternative test methods are also listed in the Excel files.

(Download at: www.dcc-germany.org)

#1000 *IPTA*® Hardcoal

DCC Analytic, DCC PTP, DCC Express, < 3 mm, 50 g

Preparation	2016-07	ISO 13909-4
Moisture (inherent) of analysis sample	2013-07	ISO 11722
Ash 815°C	2010-06	ISO 1171
Volatile matter 900°C	2010-06	ISO 562
Sulfur, Total S	2006-10	ISO 19579
Carbon, Total C (TC)	2010-10	ISO 29541
Nitrogen N	2010-10	ISO 29541
Hydrogen H	2010-10	ISO 29541
Gross calorific value at constant volume Hov	2009-06	ISO 1928
Net calorific value at constant volume Huv	2009-06	ISO 1928
Net calorific value at constant pressure Hup	2009-06	ISO 1928
Fusibility of ash, oxidising atmosphere **		Ash by 815°C
Deformation temperature DT	2008-06	ISO 540
Sphere temperature ST	2008-06	ISO 540
Hemisphere temperature HT	2008-06	ISO 540
Flow temperature FT	2008-06	ISO 540
Fluorine F	2016-12	ISO 11724
Chlorine Cl	2013	ASTM D 4208
Decomposition method, microwave-assisted pressure	2014-07	DIN 22022-1
Arsenic As	2017-01	EN ISO 17294-2
Mercury Hg	2016-11	ISO 15237
Selenium Se	2017-01	EN ISO 17294-2
Thallium Tl	2017-01	EN ISO 17294-2

#1001 Hard coal Special-Testing (Coking coal)

DCC Analytic, DCC PTP, DCC Express, < 10 mm, 2 kg

Customs tarif no.:		27 011 290
issue date/Standard, Method */base/unit/expression of results	issue date	Standard
Preparation	2016-07	ISO 13909-4
Total moisture	2008-11	ISO 589
Free moisture	2008-11	ISO 589
Residual moisture	2008-11	ISO 589
Moisture (inherent) of analysis sample	2013-07	ISO 11722
Sulfur, Total S	2006-10	ISO 19579
Sulfur, forms of, Sulfide sulfur S^{2-}	1996-06	ISO 157
Sulfur, forms of, Disulfide sulfur (pyrite sulfur) S^{-}	1996-06	ISO 157
Sulfur, forms of, Sulfate sulfur SO_4^{2-}	1996-06	ISO 157
Carbonate carbon content	1997-05	ISO 925
Hardgrove-Index (HGI)	2016	ASTM D 409
Free-Swelling-Index (FSI) 1-2	2012-09	ISO 501
Free-Swelling-Index (FSI) 3-4	2012-09	ISO 501
Pet: Petrology of Coal, Maceral group composition		
Pet: Vitrinite	1988-12	ISO 7404-4
Pet: Inertinite	1988-12	ISO 7404-4
Pet: Liptinite (exinite)	1988-12	ISO 7404-4
Pet: Mineral	1988-12	ISO 7404-4
Pet: Sum	1988-12	ISO 7404-4
Pet: Rm reflectance on vitrinite, main population	2009-10	ISO 7404-5
Pet: Standard deviation 2s, main population	2009-10	ISO 7404-5
Pet: Number points, main population	2009-10	ISO 7404-5
Pet: Rm reflectance of vitrinite, all population	2009-10	ISO 7404-5
Pet: Standard deviation 2s, all population	2009-10	ISO 7404-5
Pet: Number points, all population	2009-10	ISO 7404-5
Dilatation: Swelling Properties, using a Dilatometer	1975-01	ISO 349
Dilatation: Softening temperature as T1	1975-01	ISO 349
Dilatation: Contraction temperature as T2	1975-01	ISO 349
Dilatation: Maximum dilatation temperature as T3	1975-01	ISO 349
Dilatation: Percent dilatation as %D	1975-01	ISO 349
Dilatation: Percent contraction as %C	1975-01	ISO 349
Gieseler plastometer method, Plastic properties,	2009-02	ISO 10329
Gieseler: Initial softening temperature	2009-02	ISO 10329
Gieseler: Maximum fluidity temperature	2009-02	ISO 10329
Gieseler: Solidification temperature	2009-02	ISO 10329
Gieseler: Maximum fluidity	2009-02	ISO 10329
Ignition point (according Wollers, Oxygen atmosphere)***	1939	Moore/Wollers
Density, solid (Thörner, pycnometer method)	1997-03	ISO 9088
Comments:	***(Moore, Wollers, Fried. Krupp AG)	

#1002 A Lignite

DCC Analytic, DCC PTP, DCC Express, < 10 mm, 2 kg

Customs tarif no.:		27 021 000
issue date/Standard, Method */base/unit/expression of results	issue date	Standard
Preparation	1983-12	ISO 5069-2
Total moisture	2007-02	ISO 5068-1
Moisture (inherent) of analysis sample	2007-02	ISO 5068-2
Sulfur, Total S	2006-10	ISO 19579
Sulfur, forms of, Sulfide sulfur S^{2-}	1996-06	ISO 157
Sulfur, forms of, Disulfide sulfur (pyrite sulfur) S^{-}	1996-06	ISO 157
Sulfur, forms of, Sulfate sulfur SO_4^{2-}	1996-06	ISO 157
Carbonate carbon content	1997-05	ISO 925
Hardgrove-Index (HGI)	2016	ASTM D 409
Pet: Petrology of Coal, Maceral group composition		
Pet: Huminite	1988-12	ISO 7404-4
Pet: Inertinite	1988-12	ISO 7404-4
Pet: Liptinite (exinite)	1988-12	ISO 7404-4
Pet: Mineral	1988-12	ISO 7404-4
Pet: Sum	1988-12	ISO 7404-4
Pet: Rm reflectance on Huminite, main population	2009-10	ISO 7404-5
Pet: Standard deviation 2s, main population	2009-10	ISO 7404-5
Pet: Number points, main population	2009-10	ISO 7404-5
Pet: Rm reflectance of Huminite, all population	2009-10	ISO 7404-5
Pet: Standard deviation 2s, all population	2009-10	ISO 7404-5
Pet: Number points, all population	2009-10	ISO 7404-5
Ignition point (according Wollers, Oxygen atmosphere)***	1939	Moore/Wollers
Density, solid (Thörner, pycnometer method)	1997-03	ISO 9088
Comments:	***(Moore, Wollers, Fried. Krupp AG)	

#1002 *IPTA®* Lignite

DCC Analytic, DCC PTP, DCC Express, < 3 mm, 0,08 kg

Customs tarif no.:		27 021 000
issue date/Standard, Method */base/unit/expression of results	issue date	Standard
Preparation	1983-12	ISO 5069-2
Total moisture	2007-02	ISO 5068-1
Moisture (inherent) of analysis sample	2007-02	ISO 5068-2
Ash 815°C	2010-06	ISO 1171
Volatile matter 900°C	2010-06	ISO 562
Sulfur, Total S	2006-10	ISO 19579
Total carbon C (TC)	2010-10	ISO 29541
Nitrogen N	2010-10	ISO 29541
Hydrogen H	2010-10	ISO 29541
Gross calorific value at constant volume Hov	2009-06	ISO 1928
Net calorific value at constant volume Huv	2009-06	ISO 1928
Net calorific value at constant pressure Hup	2009-06	ISO 1928
Fusibility of ash, oxidising atmosphere**		Ash by 815°C
Deformation temperature DT	2008-06	ISO 540
Sphere temperature ST	2008-06	ISO 540
Hemisphere temperature HT	2008-06	ISO 540
Flow temperature FT	2008-06	ISO 540
Fluorine F	2016-12	ISO 11724
Chlorine Cl	2013	ASTM D 4208
Decomposition method, microwave-assisted pressure	2001-02	DIN 22022-1
Arsenic As	2017-01	EN ISO 17294-2
Mercury Hg	2016-11	ISO 15237
Selenium Se	2017-01	EN ISO 17294-2
Thallium Tl	2017-01	EN ISO 17294-2

#1025 Peat

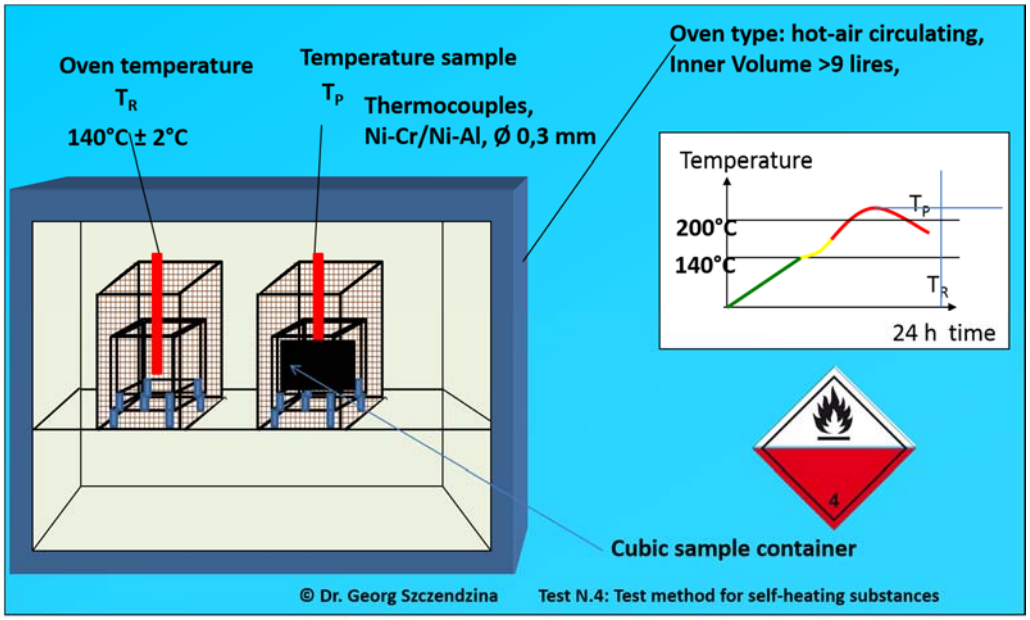
DCC Analytic, DCC PTP, DCC Express, < 10 mm, 500 g

Customs tarif no.:		27 021 000
issue date/Standard, Method */base/unit/expression of results	issue date	Standard
Preparation	1983-12	ISO 5069-2
Total moisture	2007-02	ISO 5068-1
Moisture (inherent) of analysis sample	2007-02	ISO 5068-2
Ash 815°C	2010-06	ISO 1171
Volatile matter 900°C	2010-06	ISO 562
Sulfur, Total S	2006-10	ISO 19579
Total carbon C (TC)	2010-10	ISO 29541
Nitrogen N	2010-10	ISO 29541
Hydrogen H	2010-10	ISO 29541
Gross calorific value at constant volume Hov	2009-06	ISO 1928
Net calorific value at constant volume Huv	2009-06	ISO 1928
Net calorific value at constant pressure Hup	2009-06	ISO 1928
Fusibility of ash, oxidising atmosphere**		Ash by 815°C
Deformation temperature DT	2008-06	ISO 540
Sphere temperature ST	2008-06	ISO 540
Hemisphere temperature HT	2008-06	ISO 540
Flow temperature FT	2008-06	ISO 540
Fluorine F	2016-12	ISO 11724
Chlorine Cl	2013	ASTM D 4208
Decomposition method, microwave-assisted pressure	2001-02	DIN 22022-1
Arsenic As	2017-01	EN ISO 17294-2
Mercury Hg	2016-11	ISO 15237
Selenium Se	2017-01	EN ISO 17294-2
Thallium Tl	2017-01	EN ISO 17294-2

#1020 Hard coal UN-N4 Test, Self heating

DCC Analytic, DCC PTP, DCC Express, < 10 mm, 2 kg

Customs tarif no.:		27 011 290
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
UN-N4-Test: 100 mm cube, self-heating substances 140°C	2013	UN-N4-Test
UN-N4-Test: 100 mm cube, Tmax. Temperature 0-24h	2013	UN-N4-Test
UN-N4-Test: 100 mm cube, tmax Reached after hours (h)	2013	UN-N4-Test
UN-N4-Test: 25 mm cube, self-heating substances 140°C	2013	UN-N4-Test
UN-N4-Test: 25 mm cube, Tmax. Temperature 0-24h	2013	UN-N4-Test
UN-N4-Test: 25 mm cube, tmax Reached after hours (h)	2013	UN-N4-Test



#1022 Transportable Moisture Limit (TML)

DCC Analytic, < 5 mm, 10 kg

TML	2010	IMSBC-code
Moisture content	2010	IMSBC-Code
Flow moisture point (FMP)	2013	IMSBC-Code
Transportable moisture limit (TML)	2013	IMSBC-Code
Comments Remarks:	INTERNATIONAL MARITIME SOLID BULK CARGOES (IMSBC) CODE	

According to Guidance for crews on the International Maritime Solid Bulk Cargoes Code (IMSBC), General requirements for carrying solid bulk cargoes applies: Concentrates or other cargoes which may liquefy shall only be accepted for loading when the actual moisture content of the cargo is less than its TML. The TML is the maximum moisture content considered safe for carriage.Solid Bulk Cargoes with a moisture content exceeding the TML may be transported with specially designed or fitted cargo ship in accordance with paragraph 7.3.2. We want to carry out this year a proficiency test for TML Transportable Moisture Limit (moisture limits for the transport: Vibration table test, penetration test, Proctor / Fagerberg test). The tests are to be carried out at Copper concentrates, zinc concentrates or Iron Ore Fines.

#1003 *IPTA*® Coke

DCC Analytic, DCC PTP, DCC Express, < 3 mm, 0,08 kg

Customs tarif no.:		27 040 019
issue date/Standard, Method */base/unit/expression of results	issue date	Standard
Preparation	2016-07	ISO 13909-4
Total moisture	2013-05	ISO 579
Moisture (inherent) of analysis sample	2010-06	ISO 687
Ash 815°C	2010-06	ISO 1171
Volatile matter 900°C	2010-06	ISO 562
Sulfur, Total S	2006-10	ISO 19579
Carbon, Total C (TC)	2010-10	ISO 29541
Nitrogen N	2010-10	ISO 29541
Hydrogen H	2010-10	ISO 29541
Gross calorific value at constant volume Hov	2009-06	ISO 1928
Net calorific value at constant volume Huv	2009-06	ISO 1928
Net calorific value at constant pressure Hup	2009-06	ISO 1928
Phosphorus P	2016-11	ISO 622
Ash major elements		**Ash by 815°C**
SiO_2	2012-05	ISO 13605
Al_2O_3	2012-05	ISO 13605
Fe_2O_3	2012-05	ISO 13605
CaO	2012-05	ISO 13605
MgO	2012-05	ISO 13605
Na_2O	2012-05	ISO 13605
K_2O	2012-05	ISO 13605
TiO_2	2012-05	ISO 13605
SO_3	2012-05	ISO 13605
P_2O_5	2012-05	ISO 13605
MnO_2	2012-05	ISO 13605
BaO	2012-05	ISO 13605
SrO	2012-05	ISO 13605

#1004 Coke, CRI, CSR

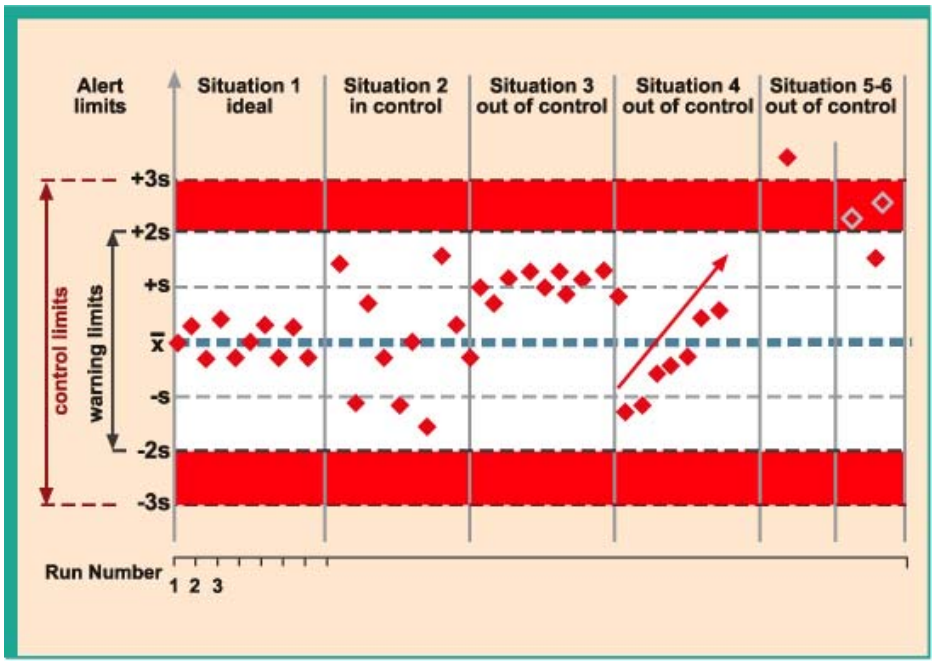
DCC Analytic, DCC PTP, DCC Express, 19-22,4 mm, 500 g

Customs tarif no.:		27 040 019
issue date/Standard, Method */base/unit/expression of results	issue date	Standard
Preparation	2001-12	ISO 13909-4
Total moisture	2013-05	ISO 579
Reactivity: CRI Coke reactivity index	2006-04	ISO 18894
Reactivity: CSR Coke strength after reaction	2006-04	ISO 18894

#1005 Furnace coke, MICUM IRSID

DCC Analytic, DCC PTP, DCC Express, < 40 mm, 55 kg

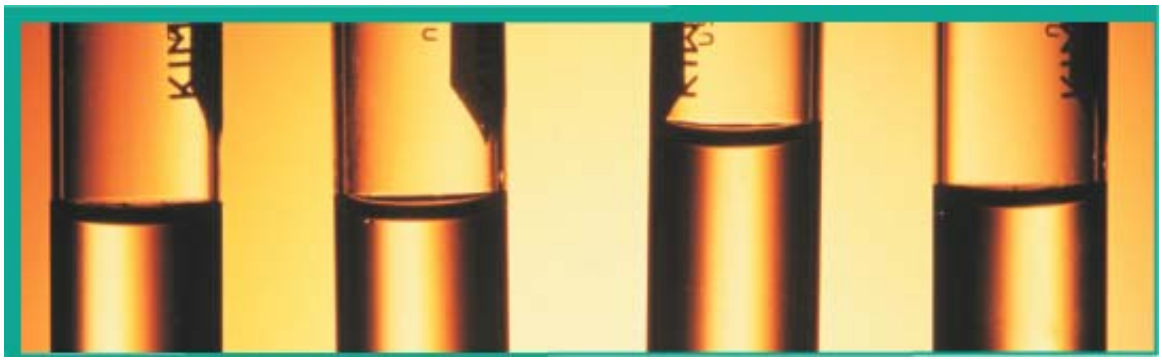
Customs tarif no.:		27 040 019
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Preparation	2001-12	ISO 13909-4
Total moisture	2013-05	ISO 579
IRSID I10 strength index, mechanical strength	1980-11	ISO 556
IRSID I40 strength index, mechanical strength	1980-11	ISO 556
MICUM 10, mechanical strength	1980-11	ISO 555
MiCUM 40, mechanical strength	1980-11	ISO 556



#1006 *IPTA*® Petroleum coke

DCC Analytic, DCC PTP, DCC Express, < 3 mm, 0,08 kg

Customs tarif no.:		27 131 100
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Preparation	2012-03	DIN 51940
Total moisture	2013-05	ISO 579
Moisture (inherent) of analysis sample	2008-11	ISO 11722
Ash 815°C	2010-06	ISO 1171
Volatile matter 900°C	2010-06	ISO 562
Sulfur, Total S	2006-10	ISO 19579
Carbon, Total C (TC)	2010-10	ISO 29541
Nitrogen N	2010-10	ISO 29541
Hydrogen H	2010-10	ISO 29541
Gross calorific value at constant volume Hov	2009-06	ISO 1928
Net calorific value at constant pressure Hup	2009-06	ISO 1928
Calcium Ca	2000-04	ISO 12980
Sodium Na	2000-04	ISO 12980
Nickel Ni	2000-04	ISO 12980
Phosphorus P	2000-04	ISO 12980
Silicium Si	2000-04	ISO 12980
Titanium Ti	2000-04	ISO 12980
Vanadium V	2000-04	ISO 12980
Zinc Zn	2000-04	ISO 12980
Iron Fe	2000-04	ISO 12980



#1007A Hard Coal Ash (815°C)

DCC Analytic, DCC PTP, DCC Express, < 0,1 mm, 10 g

Customs tarif no.:		25 219 000
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Ash major elements		**Ash by 815°C**
SiO_2	2012-05	ISO 13605
Al_2O_3	2012-05	ISO 13605
Fe_2O_3	2012-05	ISO 13605
CaO	2012-05	ISO 13605
MgO	2012-05	ISO 13605
Na_2O	2012-05	ISO 13605
K_2O	2012-05	ISO 13605
TiO_2	2012-05	ISO 13605
SO_3	2012-05	ISO 13605
P_2O_5	2012-05	ISO 13605
MnO_2	2012-05	ISO 13605
BaO	2012-05	ISO 13605
SrO	2012-05	ISO 13605
ZnO	2012-05	ISO 13605
PbO	2012-05	ISO 13605
NiO	2012-05	ISO 13605
V_2O_5	2012-05	ISO 13605
CuO	2012-05	ISO 13605

#1007B Lignite Coal Ash (815°C)

DCC Analytic, DCC PTP, DCC Express, < 0,1 mm, 10 g

Customs tarif no.:		26 219 000
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Ash major elements		**Ash by 815°C**
SiO_2	2012-05	ISO 13605
Al_2O_3	2012-05	ISO 13605
Fe_2O_3	2012-05	ISO 13605
CaO	2012-05	ISO 13605
MgO	2012-05	ISO 13605
Na_2O	2012-05	ISO 13605
K_2O	2012-05	ISO 13605
TiO_2	2012-05	ISO 13605
SO_3	2012-05	ISO 13605
P_2O_5	2012-05	ISO 13605
MnO_2	2012-05	ISO 13605
BaO	2012-05	ISO 13605
SrO	2012-05	ISO 13605
ZnO	2012-05	ISO 13605
PbO	2012-05	ISO 13605
NiO	2012-05	ISO 13605
V_2O_5	2012-05	ISO 13605
CuO	2012-05	ISO 13605

#1008 Hard Coal Fly Ash

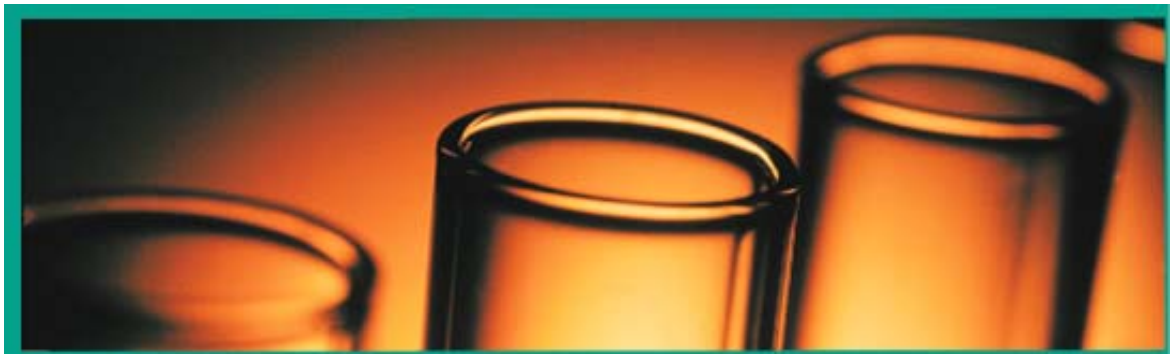
DCC Analytic, DCC PTP, DCC Express, < 0,2 mm, 500 g

Customs tarif no.:		26 211 000
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Preparation	2013-10	EN 196-2
Total moisture	2013-10	EN 196-2
Moisture (inherent) of analysis sample	2008-11	ISO 11722
Loss by combustion 950°C	2013-10	EN 196-2
Carbon, Total C (TC)	1996-08	ISO 10694
Chlorine Cl	2013-10	EN 196-2
Decomposition method (aqua regia)	2003-01	EN 13657
Antimony Sb	2009-09	EN ISO 11885
Arsenic As	2009-09	EN ISO 11885
Lead Pb	2009-09	EN ISO 11885
Cadmium Cd	2009-09	EN ISO 11885
Chromium Cr	2009-09	EN ISO 11885
Copper Cu	2009-09	EN ISO 11885
Manganese Mn	2009-09	EN ISO 11885
Nickel Ni	2009-09	EN ISO 11885
Mercury Hg	2007-07	EN 1483
Thallium Tl	2009-09	EN ISO 11885
Titanium Ti	2009-09	EN ISO 11885
Vanadium V	2009-09	EN ISO 11885
Zinc Zn	2009-09	EN ISO 11885
Tin Sn	2009-09	EN ISO 11885
SO_3	2013-10	EN 196-2
CaO free	2004-05	EN 451-1
CaO total	2013-10	EN 196-2
Na_2O-equivalent	2013-10	EN 196-2
Na_2O	2013-10	EN 196-2
K_2O	2013-10	EN 196-2
SiO_2	2013-10	EN 196-2
Al_2O_3	2013-10	EN 196-2
Fe_2O_3	2013-10	EN 196-2
Ammonia NH_3 steam distillation	1987-01	VGB-B 401, 4.4.2
P_2O_5, dissoluble	2012-10	EN 450-1
Density, Bulk density of solid particles	2010-05	EN 196-6
Density, Bulk density tamped	1995-10	EN ISO 787-11
Size, Particle size >0,045 mm	2009-10	EN 933-10

#1018A FGD Gypsum (Hardcoal firing)

DCC Analytic, DCC PTP, DCC Express, < 0,2 mm, 500 g

Customs tarif no.:		25201000
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Preparation	2008-12	VGB M701
Moisture (40-45°C)	2008-12	VGB M701
Crystallization water (350°C)	2008-12	VGB M701
Calcium sulphate dihydrate CaSO4x2 H2O (purity)	2008-12	VGB M701
pH value	2008-12	VGB M701
Sodium (water soluble) Na2O	2008-12	VGB M701
Magnesium (water soluble) MgO	2008-12	VGB M701
Chloride (water soluble) Cl	2008-12	VGB M701
Calcium sulphite hemihydrate CaSO3x1/2 H2O	2008-12	VGB M701
Calcium carbonate, carbonates as	2008-12	VGB M701
screening residues at 32 µm	2008-12	VGB M701
Colour Ry Lxaxbx	2008-12	VGB M701
Decomposition method, microwave-assisted pressure	2008-12	VGB M701
Aluminium Al	2008-12	VGB M701
Antimony Sb	2008-12	VGB M701
Arsenic As	2008-12	VGB M701
Lead Pb	2008-12	VGB M701
Cadmium Cd	2008-12	VGB M701
Chromium Cr	2008-12	VGB M701
Iron Fe	2008-12	VGB M701
Cobalt Co	2008-12	VGB M701
Copper Cu	2008-12	VGB M701
Manganese Mn	2008-12	VGB M701
Nickel Ni	2008-12	VGB M701
Mercury Hg	2008-12	VGB M701
Thallium Tl	2008-12	VGB M701
Vanadium V	2008-12	VGB M701
Zinc Zn	2008-12	VGB M701
Tin Sn	2008-12	VGB M701
Comments: VGB PowerTech e.V., Essen Germany, http://www.vgb.org		



#1018B FGD Gypsum (Lignite firing)

DCC Analytic, DCC PTP, DCC Express, < 0,2 mm, 500 g

Customs tarif no.:		25201000
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Preparation	2008-12	VGB M701
Moisture (40-45°C)	2008-12	VGB M701
Crystallization water (350°C)	2008-12	VGB M701
Calcium sulphate dihydrate CaSO4x2 H2O (purity)	2008-12	VGB M701
pH value	2008-12	VGB M701
Sodium (water soluble) Na2O	2008-12	VGB M701
Magnesium (water soluble) MgO	2008-12	VGB M701
Chloride (water soluble) Cl	2008-12	VGB M701
Calcium sulphite hemihydrate CaSO3x1/2 H2O	2008-12	VGB M701
Calcium carbonate, carbonates as	2008-12	VGB M701
screening residues at 32 µm	2008-12	VGB M701
Colour Ry Lxaxbx	2008-12	VGB M701
Decomposition method, microwave-assisted pressure	2008-12	VGB M701
Aluminium Al	2008-12	VGB M701
Antimony Sb	2008-12	VGB M701
Arsenic As	2008-12	VGB M701
Lead Pb	2008-12	VGB M701
Cadmium Cd	2008-12	VGB M701
Chromium Cr	2008-12	VGB M701
Iron Fe	2008-12	VGB M701
Cobalt Co	2008-12	VGB M701
Copper Cu	2008-12	VGB M701
Manganese Mn	2008-12	VGB M701
Nickel Ni	2008-12	VGB M701
Mercury Hg	2008-12	VGB M701
Thallium Tl	2008-12	VGB M701
Vanadium V	2008-12	VGB M701
Zinc Zn	2008-12	VGB M701
Tin Sn	2008-12	VGB M701
Comments: VGB PowerTech e.V., Essen Germany, http://www.vgb.org		

#1024 Wood ash

DCC Analytic, DCC PTP, DCC Express, < 4 mm, 2 kg

Zolltarif-Nummer:		2621 9000
Ausgabedatum/Norm/Bezugsgröße/Dimension/Angabe Ergebnisse	issue date	Standard
Preparation	2016-01	ISO 14780
Total moisture	2015-09	ISO 18134-1
Moisture (Inherent) of analysis sample	2015-09	ISO 18134-3
Residue, dry	2007-03	DIN EN 14346
Aschegehalt 550°C	2015-10	ISO 18122
Aschegehalt 815°C	2015-10	ISO 18122
Original Substance (loss by combustion 550 °C)	2007-05	DIN EN 15169
Volatile matter 900°C	2015-10	ISO 18123
Sulfur, Total S	2015-04	ISO 16994
Carbon, Total C (TC)	2015-05	ISO 16948
Carbon TOC_{400}	2016-12	DIN 19539
Carbon ROC	2016-12	DIN 19539
Carbon TIC_{900}	2016-12	DIN 19539
Nitrogen N	2015-05	ISO 16948
Hydrogen H	2015-05	ISO 16948
Oxygen, calculated	2013-07	ISO 1170
Decomposition method (aqua regia)	1995-03	ISO 11466
Aluminium Al	2009-09	ISO 11885
Antimony Sb	2009-09	ISO 11885
Arsenic As	2009-09	ISO 11885
Lead Pb	2009-09	ISO 11885
Boron B	2009-09	ISO 11885
Cadmium Cd	2009-09	ISO 11885
Chromium Cr	2009-09	ISO 11885
Chromium ^{VI} Cr^{VI}	2007-02	DIN EN 15192
Iron Fe	2009-09	ISO 11885
Cobalt Co	2009-09	ISO 11885
Copper Cu	2009-09	ISO 11885
Manganese Mn	2009-09	ISO 11885
Sodium Na	2009-09	ISO 11885
Nickel Ni	2009-09	ISO 11885
Mercury Hg	2012-04	ISO 12846
Selenium Se	2009-09	ISO 11885
Thallium Tl	2009-09	ISO 11885
Vanadium V	2009-09	ISO 11885
Zinc Zn	2009-09	ISO 11885
Tin Sn	2009-09	ISO 11885
Sulfur, Total S	2009-09	ISO 11885
Potassium K_2O	2009-09	ISO 11885
Phosphorus P_2O_5	2009-09	ISO 11885
Magnesium Mg	2009-09	ISO 11885
Molybdenum Mo	2009-09	ISO 11885

#1024 Wood ash (continue page)

Ash major elements		Ash by 815°C
SiO_2	2015-07	ISO 16967
Al_2O_3	2015-07	ISO 16967
Fe_2O_3	2015-07	ISO 16967
CaO	2015-07	ISO 16967
MgO	2015-07	ISO 16967
Na_2O	2015-07	ISO 16967
K_2O	2015-07	ISO 16967
TiO_2	2015-07	ISO 16967
SO_3	2015-07	ISO 16967
P_2O_5	2015-07	ISO 16967
MnO_2	2015-07	ISO 16967
BaO	2015-07	ISO 16967
SrO	2015-07	ISO 16967
PCB 28	2008-05	EN 15308
PCB 52	2008-05	EN 15308
PCB 101	2008-05	EN 15308
PCB 138	2008-05	EN 15308
PCB 153	2008-05	EN 15308
PCB 180	2008-05	EN 15308
PCB Sum 6 PCB Ballschmiter	2008-05	EN 15308
PAH (EPA), GC/MS, Toluene-extraction	2008-09	EN 15527
Dioxin-/Furan-content PCDD/F (I-TEQ OMS)		HRGC/HRMS
Dioxin-/Furan-content PCDD/F		Düngemittelverordnung
dl-PCB (WHO-TEQ)		Düngemittelverordnung
Sum dl-PCB + PCDD/F (WHO-TEQ)		Düngemittelverordnung
Perfluorinated Tenside (PFT) (PFOA + PFOS) HPLC	2011-03	DIN 38407-42
pH value	2005-12	ISO 10390
alkaline active ingredients (as CaO)		Methodenbuch LUFA
Contrairies		Düngemittelverordnung
Particle size distribution		Düngemittelverordnung
Reactivity		Düngemittelverordnung
Chlorine Cl		Düngemittelverordnung
Comments:	www.holzaschen.de	

#1010 Wood Pellets

DCC Analytic, DCC PTP, DCC Express, ⌀ 6 mm, 2 kg

Customs tarif no.:		44 013 100 (020)
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Preparation	2016-01	ISO 14780
Total moisture	2015-09	ISO 18134-1
Moisture (Inherent) of analysis sample	2015-09	ISO 18134-3
Ash 550°C	2015-10	ISO 18122
Ash 815°C	2015-10	ISO 18122
Volatile matter 900°C	2015-10	ISO 18123
Sulfur, Total S	2015-04	ISO 16994
Carbon, Total C (TC)	2015-05	ISO 16948
Nitrogen N	2015-05	ISO 16948
Hydrogen H	2015-05	ISO 16948
Gross calorific value at constant volume Hov	2015-11	ISO/DIS 18125
Net calorific value at constant pressure Hup	2015-11	ISO/DIS 18125
Fusibility of ash, oxidising atmosphere**		Ash by 550°C
Shrinkage starting temperature SST	2006-12	CEN/TS 15370-1
Deformation temperature DT	2006-12	CEN/TS 15370-1
Hemisphere temperature HT	2006-12	CEN/TS 15370-1
Flow temperature FT	2006-12	CEN/TS 15370-1
Fluorine F	2004-11	ISO 11724
Chlorine Cl	2015-04	ISO 16994
EOX, extractable organic halogen	2014-04	DIN 38414-17
Decomposition method	2015-05	ISO 16968
Aluminium Al	2015-05	ISO 16968
Antimony Sb	2015-05	ISO 16968
Arsenic As	2015-05	ISO 16968
Lead Pb	2015-05	ISO 16968
Cadmium Cd	2015-05	ISO 16968
Chromium Cr	2015-05	ISO 16968
Iron Fe	2015-05	ISO 16968
Cobalt Co	2015-05	ISO 16968
Copper Cu	2015-05	ISO 16968
Manganese Mn	2015-05	ISO 16968
Nickel Ni	2015-05	ISO 16968
Mercury Hg	2015-05	ISO 16968
Thallium Tl	2015-05	ISO 16968
Vanadium V	2015-05	ISO 16968
Zinc Zn	2015-05	ISO 16968
Tin Sn	2015-05	ISO 16968
Ash, 13 major elements		**Ash by 550°C**
Oxide of Si, Al, Fe, Ca, Mg, Na, K, Ti, S, P, Mn, Ba, Sr	2015-07	ISO 16967
Density, Particle density	2012-01	EN 15150
Density, Bulk density (analog, lower volume <5L)	2015-12	ISO 17828
Abrasion <3,15 mm (Ligno-Test)	2005	LIGNO-Test
Mechanical durability DU	2015-12	ISO 17831-1
Diameter	2015-10	ISO 17829

#1011 Wood Chips

DCC Analytic, DCC PTP, DCC Express, < 30 mm, 10 L, 2 kg

Customs tarif no.:		44 012 200
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Preparation	2016-01	ISO 14780
Total moisture	2015-09	ISO 18134-1
Moisture (Inherent) of analysis sample	2015-09	ISO 18134-3
Ash 550°C	2015-10	ISO 18122
Ash 815°C	2015-10	ISO 18122
Volatile matter 900°C	2015-10	ISO 18123
Sulfur, Total S	2015-04	ISO 16994
Carbon, Total C (TC)	2015-05	ISO 16948
Nitrogen N	2015-05	ISO 16948
Hydrogen H	2015-05	ISO 16948
Gross calorific value at constant volume Hov	2015-11	ISO/DIS 18125
Net calorific value at constant pressure Hup	2015-11	ISO/DIS 18125
Fusibility of ash, oxidising atmosphere**		Ash by 550°C
Shrinkage starting temperature SST	2006-12	CEN/TS 15370-1
Deformation temperature DT	2006-12	CEN/TS 15370-1
Hemisphere temperature HT	2006-12	CEN/TS 15370-1
Flow temperature FT	2006-12	CEN/TS 15370-1
Fluorine F	2004-11	ISO 11724
Chlorine Cl	2015-04	ISO 16994
Decomposition method	2015-05	ISO 16968
Aluminium Al	2015-05	ISO 16968
Antimony Sb	2015-05	ISO 16968
Arsenic As	2015-05	ISO 16968
Lead Pb	2015-05	ISO 16968
Cadmium Cd	2015-05	ISO 16968
Chromium Cr	2015-05	ISO 16968
Iron Fe	2015-05	ISO 16968
Cobalt Co	2015-05	ISO 16968
Copper Cu	2015-05	ISO 16968
Manganese Mn	2015-05	ISO 16968
Nickel Ni	2015-05	ISO 16968
Mercury Hg	2015-05	ISO 16968
Thallium Tl	2015-05	ISO 16968
Vanadium V	2015-05	ISO 16968
Zinc Zn	2015-05	ISO 16968
Tin Sn	2015-05	ISO 16968
Ash, 13 major elements		**Ash by 550°C**
Oxide of Si, Al, Fe, Ca, Mg, Na, K, Ti, S, P, Mn, Ba, Sr	2015-07	ISO 16967

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#1023 Wood waste

DCC Analytic, DCC PTP, DCC Express, <3 mm, 0,1 kg

Customs tarif no.:		44 012 200
Ausgabedatum/Norm/Bezugsgröße/Dimension/Angabe Ergebnise	issue date	Standard
Preparation	2016-01	ISO 14780
Total moisture *	2015-09	ISO 18134-1
Moisture (Inherent) of analysis sample	2015-09	ISO 18134-3
Ash 550°C	2015-10	ISO 18122
Ash 815°C	2015-10	ISO 18122
Volatile matter 900°C	2015-10	ISO 18123
Sulfur, Total S	2015-04	ISO 16994
Carbon, Total C (TC)	2015-05	ISO 16948
Nitrogen N	2015-05	ISO 16948
Hydrogen H	2015-05	ISO 16948
Gross calorific value at constant volume Hov	2015-11	ISO/DIS 18125
Net calorific value at constant pressure Hup	2015-11	ISO/DIS 18125
Fusibility of ash, oxidising atmosphere**		Ash by 550°C
Shrinkage starting temperature SST	2006-12	CEN/TS 15370-1
Deformation temperature DT	2006-12	CEN/TS 15370-1
Hemisphere temperature HT	2006-12	CEN/TS 15370-1
Flow temperature FT	2006-12	CEN/TS 15370-1
Fluorine F *	1995-04	DIN EN ISO 10304
Chlorine Cl *	1995-04	DIN EN ISO 10304
Decomposition method (aqua regia)*	2011-04	EN 15297
Aluminium Al	2011-04	EN 15297
Antimony Sb	2011-04	EN 15297
Arsenic As *	1996-11	DIN EN ISO 11969
Lead Pb *	1998-04	DIN EN ISO 11885
Cadmium Cd *	1998-04	DIN EN ISO 11885
Chromium Cr *	1998-04	DIN EN ISO 11885
Iron Fe	2011-04	EN 15297
Cobalt Co	2011-04	EN 15297
Copper Cu *	1998-04	DIN EN ISO 11885
Manganese Mn	2011-04	EN 15297
Nickel Ni	2011-04	EN 15297
Mercury Hg *	1997-08	DIN EN 1483
Thallium Tl	2011-04	EN 15297
Vanadium V	2011-04	EN 15297
Zinc Zn	2011-04	EN 15297
Tin Sn	2011-04	EN 15297

#1023 Wood waste (continue page)

Ash major elements		Ash by 550°C
SiO_2	2015-07	ISO 16967
Al_2O_3	2015-07	ISO 16967
Fe_2O_3	2015-07	ISO 16967
CaO	2015-07	ISO 16967
MgO	2015-07	ISO 16967
Na_2O	2015-07	ISO 16967
K_2O	2015-07	ISO 16967
TiO_2	2015-07	ISO 16967
SO_3	2015-07	ISO 16967
P_2O_5	2015-07	ISO 16967
MnO_2	2015-07	ISO 16967
BaO	2015-07	ISO 16967
SrO	2015-07	ISO 16967
PCB 28 **	2008-05	EN 15308
PCB 52 **	2008-05	EN 15308
PCB 101 **	2008-05	EN 15308
PCB 138 **	2008-05	EN 15308
PCB 153 **	2008-05	EN 15308
PCB 180 **	2008-05	EN 15308
PCB Sum 6 PCB Ballschmiter **	2008-05	EN 15308
PCP Pentachlorphenol * (GC-ECD, GC-MS, HPLC)	2003-08	CEN/TR 14823
PAH (EPA), GC/MS, Toluene-extraction	2008-09	EN 15527

#1012 Charcoal

DCC Analytic, DCC PTP, DCC Express, < 10 mm, 1 kg

Customs tarif no.:		44 029 000
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Preparation	2001-12	ISO 13909-4
Total moisture	2008-11	ISO 589
Moisture (inherent) of analysis sample	2008-11	ISO 11722
Ash 710°C	2010-06	ISO 1171
Volatile matter 900°C	2010-06	ISO 562
Sulfur, Total S	2006-10	ISO 19579
Carbon, Total C (TC)	2010-10	ISO 29541
Nitrogen N	2010-10	ISO 29541
Hydrogen H	2010-10	ISO 29541
Gross calorific value at constant volume Hov	2009-06	ISO 1928
Net calorific value at constant pressure Hup	2009-06	ISO 1928

#1013 Olive kernel

DCC Analytic, DCC PTP, DCC Express, < 10 mm, 1,8 kg

Customs tarif no.:		44 013 080
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Preparation	2016-01	ISO 14780
Total moisture	2015-09	ISO 18134-1
Moisture (Inherent) of analysis sample	2015-09	ISO 18134-3
Ash 550°C	2015-10	ISO 18122
Ash 815°C	2015-10	ISO 18122
Volatile matter 900°C	2015-10	ISO 18123
Sulfur, Total S	2015-04	ISO 16994
Carbon, Total C (TC)	2015-05	ISO 16948
Nitrogen N	2015-05	ISO 16948
Hydrogen H	2015-05	ISO 16948
Gross calorific value at constant volume Hov	2015-11	ISO/DIS 18125
Net calorific value at constant pressure Hup	2015-11	ISO/DIS 18125
Fusibility of ash, oxidising atmosphere**		Ash by 550°C
Shrinkage starting temperature SST	2006-12	CEN/TS 15370-1
Deformation temperature DT	2006-12	CEN/TS 15370-1
Hemisphere temperature HT	2006-12	CEN/TS 15370-1
Flow temperature FT	2006-12	CEN/TS 15370-1
Fluorine F	2004-11	ISO 11724
Chlorine Cl	2015-04	ISO 16994
Decomposition method	2015-05	ISO 16968
Aluminium Al	2015-05	ISO 16968
Antimony Sb	2015-05	ISO 16968
Arsenic As	2015-05	ISO 16968
Lead Pb	2015-05	ISO 16968
Cadmium Cd	2015-05	ISO 16968
Chromium Cr	2015-05	ISO 16968
Iron Fe	2015-05	ISO 16968
Cobalt Co	2015-05	ISO 16968
Copper Cu	2015-05	ISO 16968
Manganese Mn	2015-05	ISO 16968
Nickel Ni	2015-05	ISO 16968
Mercury Hg	2015-05	ISO 16968
Thallium Tl	2015-05	ISO 16968
Vanadium V	2015-05	ISO 16968
Zinc Zn	2015-05	ISO 16968
Tin Sn	2015-05	ISO 16968
Ash, 13 major elements		**Ash by 550°C**
Oxide of Si, Al, Fe, Ca, Mg, Na, K, Ti, S, P, Mn, Ba, Sr	2015-07	ISO 16967

#1015 Palm kernel

DCC Analytic, DCC PTP, DCC Express, < 10 mm, 2 kg

Customs tarif no.:		44 013 080
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Preparation	2016-01	ISO 14780
Total moisture	2015-09	ISO 18134-1
Moisture (Inherent) of analysis sample	2015-09	ISO 18134-3
Ash 550°C	2015-10	ISO 18122
Ash 815°C	2015-10	ISO 18122
Volatile matter 900°C	2015-10	ISO 18123
Sulfur, Total S	2015-04	ISO 16994
Carbon, Total C (TC)	2015-05	ISO 16948
Nitrogen N	2015-05	ISO 16948
Hydrogen H	2015-05	ISO 16948
Gross calorific value at constant volume Hov	2015-11	ISO/DIS 18125
Net calorific value at constant pressure Hup	2015-11	ISO/DIS 18125
Fusibility of ash, oxidising atmosphere**		Ash by 550°C
Shrinkage starting temperature SST	2006-12	CEN/TS 15370-1
Deformation temperature DT	2006-12	CEN/TS 15370-1
Hemisphere temperature HT	2006-12	CEN/TS 15370-1
Flow temperature FT	2006-12	CEN/TS 15370-1
Fluorine F	2004-11	ISO 11724
Chlorine Cl	2015-04	ISO 16994
Decomposition method	2015-05	ISO 16968
Aluminium Al	2015-05	ISO 16968
Antimony Sb	2015-05	ISO 16968
Arsenic As	2015-05	ISO 16968
Lead Pb	2015-05	ISO 16968
Cadmium Cd	2015-05	ISO 16968
Chromium Cr	2015-05	ISO 16968
Iron Fe	2015-05	ISO 16968
Cobalt Co	2015-05	ISO 16968
Copper Cu	2015-05	ISO 16968
Manganese Mn	2015-05	ISO 16968
Nickel Ni	2015-05	ISO 16968
Mercury Hg	2015-05	ISO 16968
Thallium Tl	2015-05	ISO 16968
Vanadium V	2015-05	ISO 16968
Zinc Zn	2015-05	ISO 16968
Tin Sn	2015-05	ISO 16968
Ash, 13 major elements		**Ash by 550°C**
Oxide of Si, Al, Fe, Ca, Mg, Na, K, Ti, S, P, Mn, Ba, Sr	2015-07	ISO 16967

#1016 Coffee grounds (extraction residue)

DCC Analytic, DCC PTP, DCC Express, < 5 mm, 1,2 kg

Customs tarif no.:		23 080 090
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Preparation	2016-01	ISO 14780
Total moisture	2015-09	ISO 18134-1
Moisture (Inherent) of analysis sample	2015-09	ISO 18134-3
Ash 550°C	2015-10	ISO 18122
Ash 815°C	2015-10	ISO 18122
Volatile matter 900°C	2015-10	ISO 18123
Sulfur, Total S	2015-04	ISO 16994
Carbon, Total C (TC)	2015-05	ISO 16948
Nitrogen N	2015-05	ISO 16948
Hydrogen H	2015-05	ISO 16948
Gross calorific value at constant volume Hov	2015-11	ISO/DIS 18125
Net calorific value at constant pressure Hup	2015-11	ISO/DIS 18125
Fusibility of ash, oxidising atmosphere**		Ash by 550°C
Shrinkage starting temperature SST	2006-12	CEN/TS 15370-1
Deformation temperature DT	2006-12	CEN/TS 15370-1
Hemisphere temperature HT	2006-12	CEN/TS 15370-1
Flow temperature FT	2006-12	CEN/TS 15370-1
Fluorine F	2004-11	ISO 11724
Chlorine Cl	2015-04	ISO 16994
Decomposition method	2015-05	ISO 16968
Aluminium Al	2015-05	ISO 16968
Antimony Sb	2015-05	ISO 16968
Arsenic As	2015-05	ISO 16968
Lead Pb	2015-05	ISO 16968
Cadmium Cd	2015-05	ISO 16968
Chromium Cr	2015-05	ISO 16968
Iron Fe	2015-05	ISO 16968
Cobalt Co	2015-05	ISO 16968
Copper Cu	2015-05	ISO 16968
Manganese Mn	2015-05	ISO 16968
Nickel Ni	2015-05	ISO 16968
Mercury Hg	2015-05	ISO 16968
Thallium Tl	2015-05	ISO 16968
Vanadium V	2015-05	ISO 16968
Zinc Zn	2015-05	ISO 16968
Tin Sn	2015-05	ISO 16968
Ash, 13 major elements		**Ash by 550°C**
Oxide of Si, Al, Fe, Ca, Mg, Na, K, Ti, S, P, Mn, Ba, Sr	2015-07	ISO 16967

#1017 Biochar

DCC Analytic, DCC PTP, DCC Express, < 10 mm, 500 g

Customs tarif no.:		14 049 000
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Preparation	2016-01	ISO 14780
Total moisture	2015-09	ISO 18134-1
Moisture (inherent) of analysis sample	2015-09	ISO 18134-3
Ash 550°C	2015-10	ISO 18122
Ash 815°C	2015-10	ISO 18122
Volatile matter 900°C	2015-10	ISO 18123
Sulfur, Total S	2015-04	ISO 16994
Carbon, Total C (TC)	2015-05	ISO 16948
Total organic carbon TOC, calculated (TC-TICcarbonate)		
Carbonate carbon content	1997-05	ISO 925
H/C-quotient, calculated		
O/C-quotient, calculated		
Nitrogen N	2015-05	ISO 16948
Hydrogen H	2015-05	ISO 16948
Oxygen, calculated	2013-07	ISO 1170
Gross calorific value at constant volume Hov	2015-11	ISO/DIS 18125
Net calorific value at constant pressure Hup	2015-11	ISO/DIS 18125
Decomposition method, microwave-assisted pressure	2015-05	ISO 16968
Aluminium Al	2015-05	ISO 16968
Antimony Sb	2015-05	ISO 16968
Arsenic As	2015-05	ISO 16968
Lead Pb	2015-05	ISO 16968
Cadmium Cd	2015-05	ISO 16968
Chromium Cr	2015-05	ISO 16968
Iron Fe	2015-05	ISO 16968
Cobalt Co	2015-05	ISO 16968
Copper Cu	2015-05	ISO 16968
Manganese Mn	2015-05	ISO 16968
Nickel Ni	2015-05	ISO 16968
Mercury Hg	2015-05	ISO 16968
Thallium Tl	2015-05	ISO 16968
Vanadium V	2015-05	ISO 16968
Zinc Zn	2015-05	ISO 16968
Tin Sn	2015-05	ISO 16968
Ash, 13 major elements		**Ash by 815°C**
Oxide of Si, Al, Fe, Ca, Mg, Na, K, Ti, S, P, Mn, Ba, Sr	2015-07	ISO 16967
PCB 28	2008-05	EN 15308
PCB 52	2008-05	EN 15308
PCB 101	2008-05	EN 15308
PCB 138	2008-05	EN 15308
PCB 153	2008-05	EN 15308
PCB 180	2008-05	EN 15308
PCB Sum 6 PCB Ballschmiter	2008-05	EN 15308
PAH (EPA), GC/MS, Toluene-extraction	2008-09	EN 15527
Dioxin-content PCDD (I-TEQ OMS)		HRGC/HRMS
Furan-content PCDF (I-TEQ OMS)		HRGC/HRMS
pH value	2005-12	ISO 10390
Specific surface area, BET method	2014-11	ISO 9277
Electrical conductivity (salinity)	2008-11	ISO 11265

#1019 Miscanthus-Pellets

DCC Analytic, DCC PTP, DCC Express, ⦸ 6 mm, 1 kg

Customs tarif no.:		12149090
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Preparation	2016-01	ISO 14780
Total moisture	2015-09	ISO 18134-1
Moisture (Inherent) of analysis sample	2015-09	ISO 18134-3
Ash 550°C	2015-10	ISO 18122
Ash 815°C	2015-10	ISO 18122
Volatile matter 900°C	2015-10	ISO 18123
Sulfur, Total S	2015-04	ISO 16994
Carbon, Total C (TC)	2015-05	ISO 16948
Nitrogen N	2015-05	ISO 16948
Hydrogen H	2015-05	ISO 16948
Gross calorific value at constant volume Hov	2015-11	ISO/DIS 18125
Net calorific value at constant pressure Hup	2015-11	ISO/DIS 18125
Fusibility of ash, oxidising atmosphere**		Ash by 550°C
Shrinkage starting temperature SST	2006-12	CEN/TS 15370-1
Deformation temperature DT	2006-12	CEN/TS 15370-1
Hemisphere temperature HT	2006-12	CEN/TS 15370-1
Flow temperature FT	2006-12	CEN/TS 15370-1
Fluorine F	2004-11	ISO 11724
Chlorine Cl	2015-04	ISO 16994
EOX, extractable organic halogen	2014-04	DIN 38414-17
Decomposition method	2015-05	ISO 16968
Aluminium Al	2015-05	ISO 16968
Antimony Sb	2015-05	ISO 16968
Arsenic As	2015-05	ISO 16968
Lead Pb	2015-05	ISO 16968
Cadmium Cd	2015-05	ISO 16968
Chromium Cr	2015-05	ISO 16968
Iron Fe	2015-05	ISO 16968
Cobalt Co	2015-05	ISO 16968
Copper Cu	2015-05	ISO 16968
Manganese Mn	2015-05	ISO 16968
Nickel Ni	2015-05	ISO 16968
Mercury Hg	2015-05	ISO 16968
Thallium Tl	2015-05	ISO 16968
Vanadium V	2015-05	ISO 16968
Zinc Zn	2015-05	ISO 16968
Tin Sn	2015-05	ISO 16968
Ash, 13 major elements		**Ash by 550°C**
Oxide of Si, Al, Fe, Ca, Mg, Na, K, Ti, S, P, Mn, Ba, Sr	2015-07	ISO 16967
Density, Particle density	2012-01	EN 15150
Density, Bulk density (analog, lower volume <5L)	2015-12	ISO 17828
Abrasion <3,15 mm (Ligno-Test)	2005	LIGNO-Test
Mechanical durability DU	2015-12	ISO 17831-1
Diameter	2015-10	ISO 17829

#1014 Solid recovered fuels

DCC Analytic, DCC PTP, DCC Express, < 4 mm, 250 g

Customs tarif no.:		38 259 090
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Contrairies	2011-11	EN 15413
Preparation	2011-11	EN 15413
Total moisture	2010-10	EN 15414-1
Moisture (Inherent) of analysis sample	2011-05	EN 15414-3
Ash 550°C	2011-05	EN 15403
Volatile matter 900°C	2011-05	EN 15402
Sulfur, Total S	2011-05	EN 15408
Carbon Total carbon C (TC)	2011-05	EN 15407
Carbon Total inorganic carbon C (TIC)	2001-12	EN 13137
Carbon,Total organic carbon C (TOC)	2001-12	EN 13137
Bio: Biomass content x_B	2012-10	EN 15440
Bio: Non-biomass content x_{NB}	2012-10	EN 15440
Bio: Biomass content % percentage by TC X_b^{TC}	2012-10	EN 15440
Bio: **^{14}C Method** Biomass % TC X_b^{TC}	2012-10	EN 15440 **add C**
Nitrogen N	2011-05	EN 15407
Hydrogen H	2011-05	EN 15407
Gross calorific value at constant volume Hov	2011-05	EN 15400
Net calorific value at constant pressure Hup	2011-05	EN 15400
Fusibility of ash, oxidising atmosphere**		Ash by 550°C
Shrinkage starting temperature SST	2010-11	CEN/TR 15404
Deformation temperature DT	2010-11	CEN/TR 15404
Hemisphere temperature HT	2010-11	CEN/TR 15404
Flow temperature FT	2010-11	CEN/TR 15404
Fluorine F	2011-05	EN 15408
Chlorine Cl	2011-05	EN 15408
EOX, extractable organic halogen	2014-04	DIN 38414-17
Decomposition method	2011-11	EN 15411
Aluminium Al metallic	2010-09	CEN/TS 15412
Aluminium Al	2011-11	EN 15411
Antimony Sb	2011-11	EN 15411
Arsenic As	2011-11	EN 15411
Lead Pb	2011-11	EN 15411
Cadmium Cd	2011-11	EN 15411
Chromium Cr	2011-11	EN 15411
Cobalt Co	2011-11	EN 15411
Copper Cu	2011-11	EN 15411
Manganese Mn	2011-11	EN 15411
Nickel Ni	2011-11	EN 15411
Mercury Hg	2011-11	EN 15411
Thallium Tl	2011-11	EN 15411
Vanadium V	2011-11	EN 15411
Zinc Zn	2011-11	EN 15411
Tin Sn	2011-11	EN 15411
Ash, 13 major elements		**Ash by 550°C**
Oxide of Si, Al, Fe, Ca, Mg, Na, K, Ti, S, P, Mn, Ba, Sr	2011-11	EN 15410

#1009 Sewage Sludge, dry (sterile)

DCC Analytic, DCC Express, < 1 mm, 50 g

Customs tarif no.:		38 252 000
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Preparation	2012-11	EN 16179
Total moisture	2012-11	EN 15934
Moisture (Inherent) of analysis sample	2015-12	DIN EN ISO 18134-3
Loss by combustion 550°C	2012-11	DIN EN 15935
Loss by combustion 815°C	2010-06	ISO 1171
Ash 815°C	2010-06	ISO 1171
Volatile matter 900°C	2010-06	ISO 562
Sulfur, Total S	2015-04	DIN EN 14582
Carbon, Total C (TC)	2015-09	DIN EN ISO 16948
Nitrogen N	2015-09	DIN EN ISO 16948
Hydrogen H	2015-09	DIN EN ISO 16948
Gross calorific value at constant volume Hov	2014-03	DIN CEN/TS 16023
Net calorific value at constant pressure Hup	2014-03	DIN CEN/TS 16023
Fluorine F	2015-04	DIN EN 14582
Chlorine Cl	2015-04	DIN EN 14582
AOX, adsorbable organically bound halogens	1989-11	DIN 38414-18
Decomposition method (aqua regia)	2003-01	EN 13657
Aluminium Al	2014-12	EN ISO 17294-2
Antimony Sb	2014-12	EN ISO 17294-2
Arsenic As	2014-12	EN ISO 17294-2
Lead Pb	2014-12	EN ISO 17294-2
Cadmium Cd	2014-12	EN ISO 17294-2
Chromium Cr	2014-12	EN ISO 17294-2
Cobalt Co	2014-12	EN ISO 17294-2
Copper Cu	2014-12	EN ISO 17294-2
Manganese Mn	2014-12	EN ISO 17294-2
Nickel Ni	2014-12	EN ISO 17294-2
Phosphorus P	2014-12	EN ISO 17294-2
Mercury Hg	2015-10	DIN EN 16175-1
Thallium Tl	2014-12	EN ISO 17294-2
Titanium Ti	2014-12	EN ISO 17294-2
Vanadium V	2014-12	EN ISO 17294-2
Zinc Zn	2014-12	EN ISO 17294-2
Tin Sn	2014-12	EN ISO 17294-2
PCB 28	2016-01	DIN EN 15308
PCB 52	2016-01	DIN EN 15308
PCB 101	2016-01	DIN EN 15308
PCB 138	2016-01	DIN EN 15308
PCB 153	2016-01	DIN EN 15308
PCB 180	2016-01	DIN EN 15308
PCB Sum 6 PCB Ballschmiter	2016-01	DIN EN 15308
Bio: C_{bio} = C (TC) - C_{foss} ❶	2012-10	EN 15440
Bio: ^{14}**C Method** Biomass % of TC	2012-10	EN 15440 **add C**
Comments: ❶ C_{foss} = fossil Carbon, TEHG, DEHSt, Guidline 2003/87/EU		

#1050 Iron ore

DCC Analytic, DCC Express, <0,1 mm, 50 g

Customs tarif no.:		2601 1100
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Moisture (Inherent) of analysis sample	2011-05	EN 15414-3
Decomposition method		Handbuch für das Eisenhüttenlaboratorium
Iron Fe	2003-04	ISO 9516-1
Silicon Si	2003-04	ISO 9516-1
Aluminium Al	2003-04	ISO 9516-1
Phosphorus P	2003-04	ISO 9516-1
Comments: Handbuch für das Eisenhüttenlaboratorium		

#1100 PTP-Program Hard coal

DCC-PTP, Shipping. February, June, October

DCC Analytic, DCC PTP, DCC Express, < 10 mm, 2 kg

Customs tarif no.:		26 011 290
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Preparation	2001-12	ISO 13909-4
Moisture (inherent) of analysis sample	2008-11	ISO 11722
Ash 815°C	2010-06	ISO 1171
Volatile matter 900°C	2010-06	ISO 562
Sulfur, Total S	2006-10	ISO 19579
Carbon, Total C (TC)	2010-10	ISO 29541
Nitrogen N	2010-10	ISO 29541
Hydrogen H	2010-10	ISO 29541
Gross calorific value at constant volume Hov	2009-06	ISO 1928
Net calorific value at constant volume Huv	2009-06	ISO 1928
Net calorific value at constant pressure Hup	2009-06	ISO 1928
Fusibility of ash, oxidising atmosphere **		Ash by 815°C
Deformation temperature DT	2008-06	ISO 540
Sphere temperature ST	2008-06	ISO 540
Hemisphere temperature HT	2008-06	ISO 540
Flow temperature FT	2008-06	ISO 540
Fluorine F	2008-06	ISO 11724
Chlorine Cl	2013	ASTM D4208
Decomposition method, microwave-assisted pressure	2001-02	DIN 22022-1
Arsenic As	2007-02	EN ISO 17294-2
Mercury Hg	2003-12	ISO 15237
Selenium Se	2007-02	EN ISO 17294-2
Thallium Tl	2007-02	EN ISO 17294-2

#1200 PTP-Program Solid Biofuels

The DCC Proficiency Test Programs (DCC-PTP) is offered three times a year.
Schedule: February, June and October. Three different samples.

The following test objects are available:

#1024 Wood ash **NEW**
#1025 Peat **NEW**
#1009 Sewage sludhe (sterile)
#1010 Wood pellets
#1011 Wood chips
#1023 Wood waste
#1012 Charcaol, Barbecue
#1013 Olive kernel
#1015 Palm kernel
#1016 Coffee grounds (Ectraction residue)
#1017 Biochar
#1019 Miscanthus-Pellets

Three different samples from the test objects listed above are sent to the laboratories in February, June, October. The test methods can be found in this catalog.

#1300 PTP-Program Coke

The DCC Proficiency Test Programs (DCC-PTP) is offered three times a year.
Schedule: February, June and October. Three different samples.
for CRI/CSR 19-22,4 mm, 500 g, rest parameter three ***IPTA***-Test-samples, 50g, <3mm

Customs tarif no.:		28 040 019
issue date/Standard, Method/base/unit/expression of results	issue date	Standard
Preparation	2016-07	ISO 13909-4
Total moisture	2013-05	ISO 579
Moisture (inherent) of analysis sample	2010-06	ISO 687
Ash 815°C	2010-06	ISO 1171
Volatile matter 900°C	2010-06	ISO 562
Total sulfur S	2006-10	ISO 19579
Total carbon C (TC)	2010-10	ISO 29541
Nitrogen N	2010-10	ISO 29541
Hydrogen H	2010-10	ISO 29541
Gross calorific value at constant volume Hov	2009-06	ISO 1928
Net calorific value at constant volume Huv	2009-06	ISO 1928
Net calorific value at constant pressure Hup	2009-06	ISO 1928
Phosphorus P	2016-11	ISO 622
CRI Coke reactivity index	2006-04	ISO 18894
CSR Coke strength after reaction	2006-04	ISO 18894

11. Test parameters, alphabetically sorted

Parameter	Standard	Number	Test object
Abrasion <3,15 mm (Ligno-Test)	LIGNO-Test	#1010	Wood Pellets
Abrasion <3,15 mm (Ligno-Test)	LIGNO-Test	#1019	Miscanthus-Pellets
Al_2O_3	ISO 13605	#1003	Coke
Al_2O_3	ISO 13605	#1007 A	Hard coal ash
Al_2O_3	ISO 13605	#1007 B	Lignite ash
Al_2O_3	EN 196-2	#1008	Hard Coal Fly Ash
Al_2O_3	ISO 16967	#1010	Wood Pellets
Al_2O_3	ISO 16967	#1011	Wood Chips
Al_2O_3	ISO 16967	#1013	Olive kernel
Al_2O_3	EN 15410	#1014	Solid recovered Fuels
Al_2O_3	ISO 16967	#1015	Palm kernel
Al_2O_3	ISO 16967	#1016	Coffee Grounds
Al_2O_3	ISO 16967	#1017	Biochar
Al_2O_3	ISO 16967	#1019	Miscanthus-Pellets
Al_2O_3	ISO 16967	#1023	Wood Waste
Al_2O_3	ISO 16967	#1024	Wood Ash
alkaline active ingredients (as CaO)	Methodenbuch LUFA	#1024	Wood Ash
Aluminium Al	ISO 9516-1	#1050	Iron ore
Aluminium Al	EN ISO 17294-2	#1009	Sewage Sludge
Aluminium Al	ISO 16968	#1010	Wood Pellets
Aluminium Al	ISO 16968	#1011	Wood Chips
Aluminium Al	ISO 16968	#1013	Olive kernel
Aluminium Al	ISO 16968	#1015	Palm kernel
Aluminium Al	ISO 16968	#1016	Coffee Grounds
Aluminium Al	ISO 16968	#1017	Biochar
Aluminium Al	ISO 16968	#1019	Miscanthus-Pellets
Aluminium Al	EN 15297	#1023	Wood Waste
Aluminium Al	ISO 11885	#1024	Wood Ash
Aluminium Al	EN 15411	#1014	Solid recovered Fuels
Aluminium Al	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Aluminium Al	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Aluminium Al metallic	CEN/TS 15412	#1014	Solid recovered Fuels
Ammonia NH_3 steam distillation	VGB-B 401, 4.4.2	#1008	Hard Coal Fly Ash
Antimony Sb	ISO 16968	#1010	Wood Pellets
Antimony Sb	ISO 16968	#1011	Wood Chips
Antimony Sb	ISO 16968	#1013	Olive kernel
Antimony Sb	EN 15411	#1014	Solid recovered Fuels
Antimony Sb	ISO 16968	#1015	Palm kernel
Antimony Sb	ISO 16968	#1016	Coffee Grounds
Antimony Sb	ISO 16968	#1017	Biochar
Antimony Sb	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Antimony Sb	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Antimony Sb	ISO 16968	#1019	Miscanthus-Pellets
Antimony Sb	EN 15297	#1023	Wood Waste
Antimony Sb	ISO 11885	#1024	Wood Ash
Antimony Sb	EN ISO 11885	#1008	Hard Coal Fly Ash
Antimony Sb	EN ISO 17294-2	#1009	Sewage Sludge
AOX, adsorbable organically bound halogens	DIN 38414-18	#1009	Sewage Sludge
Arsenic As	EN ISO 17294-2	#1000	Hardcoal
Arsenic As	EN ISO 17294-2	#1002	Lignite
Arsenic As	EN ISO 17294-2	#1009	Sewage Sludge
Arsenic As	ISO 16968	#1010	Wood Pellets
Arsenic As	ISO 16968	#1011	Wood Chips
Arsenic As	ISO 16968	#1013	Olive kernel
Arsenic As	EN 15411	#1014	Solid recovered Fuels
Arsenic As	ISO 16968	#1015	Palm kernel
Arsenic As	ISO 16968	#1016	Coffee Grounds
Arsenic As	ISO 16968	#1017	Biochar
Arsenic As	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Arsenic As	VGB M701	#1018 B	FGD Gypsum (lignite fiering)

Parameter	Standard	Number	Test object
Arsenic As	ISO 16968	#1019	Miscanthus-Pellets
Arsenic As	ISO 11885	#1024	Wood Ash
Arsenic As	EN ISO 17294-2	#1025	Peat
Arsenic As	EN ISO 11885	#1008	Hard Coal Fly Ash
Arsenic As *	DIN EN ISO 11969	#1023	Wood Waste
Aschegehalt 550°C	ISO 18122	#1024	Wood Ash
Aschegehalt 815°C	ISO 18122	#1024	Wood Ash
Ash 550°C	ISO 18122	#1011	Wood Chips
Ash 550°C	ISO 18122	#1013	Olive kernel
Ash 550°C	EN 15403	#1014	Solid recovered Fuels
Ash 550°C	ISO 18122	#1015	Palm kernel
Ash 550°C	ISO 18122	#1016	Coffee Grounds
Ash 550°C	ISO 18122	#1010	Wood Pellets
Ash 550°C	ISO 18122	#1017	Biochar
Ash 550°C	ISO 18122	#1019	Miscanthus-Pellets
Ash 550°C	ISO 18122	#1023	Wood Waste
Ash 710°C	ISO 1171	#1012	Char Coal
Ash 815°C	ISO 1171	#1002	Lignite
Ash 815°C	ISO 1171	#1003	Coke
Ash 815°C	ISO 1171	#1006	Petroleum coke
Ash 815°C	ISO 18122	#1010	Wood Pellets
Ash 815°C	ISO 18122	#1011	Wood Chips
Ash 815°C	ISO 18122	#1013	Olive kernel
Ash 815°C	ISO 18122	#1015	Palm kernel
Ash 815°C	ISO 18122	#1016	Coffee Grounds
Ash 815°C	ISO 18122	#1017	Biochar
Ash 815°C	ISO 18122	#1019	Miscanthus-Pellets
Ash 815°C	ISO 18122	#1023	Wood Waste
Ash 815°C	ISO 1171	#1025	Peat
Ash 815°C	ISO 1171	#1000	Hardcoal
Ash 815°C	ISO 1171	#1009	Sewage Sludge
Ash major elements	**Ash by 815°C**	#1007 A	Hard coal ash
Ash major elements	**Ash by 815°C**	#1007 B	Lignite ash
Ash major elements	**Ash by 550°C**	#1010	Wood Pellets
Ash major elements	**Ash by 550°C**	#1011	Wood Chips
Ash major elements	**Ash by 550°C**	#1013	Olive kernel
Ash major elements	**Ash by 550°C**	#1015	Palm kernel
Ash major elements	**Ash by 550°C**	#1016	Coffee Grounds
Ash major elements	**Ash by 815°C**	#1017	Biochar
Ash major elements	**Ash by 550°C**	#1019	Miscanthus-Pellets
Ash major elements	**Ash by 550°C**	#1023	Wood Waste
Ash major elements	**Ash by 815°C**	#1003	Coke
Ash major elements	**Ash by 815°C**	#1024	Wood Ash
Ash major elements	**Ash by 550°C**	#1014	Solid recovered Fuels
BaO	ISO 13605	#1003	Coke
BaO	ISO 13605	#1007 A	Hard coal ash
BaO	ISO 13605	#1007 B	Lignite ash
BaO	ISO 16967	#1010	Wood Pellets
BaO	ISO 16967	#1011	Wood Chips
BaO	ISO 16967	#1013	Olive kernel
BaO	EN 15410	#1014	Solid recovered Fuels
BaO	ISO 16967	#1015	Palm kernel
BaO	ISO 16967	#1016	Coffee Grounds
BaO	ISO 16967	#1017	Biochar
BaO	ISO 16967	#1019	Miscanthus-Pellets
BaO	ISO 16967	#1023	Wood Waste
BaO	ISO 16967	#1024	Wood Ash
Bio: ^{14}**C Method** Biomass % of TC	EN 15440 **add C**	#1009	Sewage Sludge
Bio: ^{14}**C Method** Biomass % TC X_b^{TC}	EN 15440 **add C**	#1014	Solid recovered Fuels
Bio: Biomass content x_B	EN 15440	#1014	Solid recovered Fuels
Bio: Biomass content % percentage by TC X_b^{TC}	EN 15440	#1014	Solid recovered Fuels

Parameter	Standard	Number	Test object
Bio: C_{bio} = C (TC) - C_{foss} ❶	EN 15440	#1009	Sewage Sludge
Bio: Non-biomass content x_{NB}	EN 15440	#1014	Solid recovered Fuels
Boron B	ISO 11885	#1024	Wood Ash
Cadmium Cd	ISO 16968	#1010	Wood Pellets
Cadmium Cd	ISO 16968	#1011	Wood Chips
Cadmium Cd	ISO 16968	#1013	Olive kernel
Cadmium Cd	EN 15411	#1014	Solid recovered Fuels
Cadmium Cd	ISO 16968	#1015	Palm kernel
Cadmium Cd	ISO 16968	#1016	Coffee Grounds
Cadmium Cd	ISO 16968	#1017	Biochar
Cadmium Cd	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Cadmium Cd	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Cadmium Cd	ISO 16968	#1019	Miscanthus-Pellets
Cadmium Cd	ISO 11885	#1024	Wood Ash
Cadmium Cd	EN ISO 17294-2	#1009	Sewage Sludge
Cadmium Cd	EN ISO 11885	#1008	Hard Coal Fly Ash
Cadmium Cd *	DIN EN ISO 11885	#1023	Wood Waste
Calcium Ca	ISO 12980	#1006	Petroleum coke
Calcium carbonate, carbonates as	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Calcium carbonate, carbonates as	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Calcium sulphate dihydrate CaSO4x2 H2O (purity)	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Calcium sulphate dihydrate CaSO4x2 H2O (purity)	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Calcium sulphite hemihydrate CaSO3x1/2 H2O	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Calcium sulphite hemihydrate CaSO3x1/2 H2O	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
CaO	ISO 13605	#1003	Coke
CaO	ISO 13605	#1007 A	Hard coal ash
CaO	ISO 13605	#1007 B	Lignite ash
CaO	ISO 16967	#1010	Wood Pellets
CaO	ISO 16967	#1011	Wood Chips
CaO	ISO 16967	#1013	Olive kernel
CaO	EN 15410	#1014	Solid recovered Fuels
CaO	ISO 16967	#1015	Palm kernel
CaO	ISO 16967	#1016	Coffee Grounds
CaO	ISO 16967	#1017	Biochar
CaO	ISO 16967	#1019	Miscanthus-Pellets
CaO	ISO 16967	#1023	Wood Waste
CaO	ISO 16967	#1024	Wood Ash
CaO free	EN 451-1	#1008	Hard Coal Fly Ash
CaO total	EN 196-2	#1008	Hard Coal Fly Ash
Carbon ROC	DIN 19539	#1024	Wood Ash
Carbon ROC	DIN 19539	#1014	Solid recovered Fuels
Carbon TIC_{900}	DIN 19539	#1014	Solid recovered Fuels
Carbon TOC_{400}	DIN 19539	#1014	Solid recovered Fuels
Carbon TIC_{900}	DIN 19539	#1024	Wood Ash
Carbon TOC_{400}	DIN 19539	#1024	Wood Ash
Carbon Total carbon C (TC)	EN 15407	#1014	Solid recovered Fuels
Carbon Total inorganic carbon C (TIC)	EN 13137	#1014	Solid recovered Fuels
Carbon, Total C (TC)	ISO 16948	#1017	Biochar
Carbon, Total C (TC)	ISO 29541	#1000	Hardcoal
Carbon, Total C (TC)	ISO 29541	#1006	Petroleum coke
Carbon, Total C (TC)	ISO 16948	#1011	Wood Chips
Carbon, Total C (TC)	ISO 16948	#1013	Olive kernel
Carbon, Total C (TC)	ISO 16948	#1015	Palm kernel
Carbon, Total C (TC)	ISO 16948	#1016	Coffee Grounds
Carbon, Total C (TC)	ISO 10694	#1008	Hard Coal Fly Ash
Carbon, Total C (TC)	ISO 16948	#1010	Wood Pellets
Carbon, Total C (TC)	ISO 29541	#1012	Char Coal
Carbon, Total C (TC)	ISO 16948	#1019	Miscanthus-Pellets
Carbon, Total C (TC)	ISO 16948	#1023	Wood Waste
Carbon, Total C (TC)	ISO 16948	#1024	Wood Ash
Carbon, Total C (TC)	DIN EN ISO 16948	#1009	Sewage Sludge

Parameter	Standard	Number	Test object
Carbon, Total C (TC)	ISO 29541	#1003	Coke
Carbon,Total organic carbon C (TOC)	EN 13137	#1014	Solid recovered Fuels
Carbonate carbon content	ISO 925	#1001	Cocking coal
Carbonate carbon content	ISO 925	#1002 A	Lignite
Carbonate carbon content	ISO 925	#1017	Biochar
Chloride (water soluble) Cl	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Chloride (water soluble) Cl	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Chlorine Cl	DIN EN 14582	#1009	Sewage Sludge
Chlorine Cl	ASTM D 4208	#1002	Lignite
Chlorine Cl	EN 196-2	#1008	Hard Coal Fly Ash
Chlorine Cl	ISO 16994	#1010	Wood Pellets
Chlorine Cl	ISO 16994	#1011	Wood Chips
Chlorine Cl	ISO 16994	#1013	Olive kernel
Chlorine Cl	EN 15408	#1014	Solid recovered Fuels
Chlorine Cl	ISO 16994	#1015	Palm kernel
Chlorine Cl	ISO 16994	#1016	Coffee Grounds
Chlorine Cl	ISO 16994	#1019	Miscanthus-Pellets
Chlorine Cl	ASTM D 4208	#1025	Peat
Chlorine Cl	ASTM D 4208	#1000	Hardcoal
Chlorine Cl	Düngemittelverordnung	#1024	Wood Ash
Chlorine Cl *	DIN EN ISO 10304	#1023	Wood Waste
Chromium Cr	EN ISO 11885	#1008	Hard Coal Fly Ash
Chromium Cr	EN ISO 17294-2	#1009	Sewage Sludge
Chromium Cr	ISO 16968	#1010	Wood Pellets
Chromium Cr	ISO 16968	#1011	Wood Chips
Chromium Cr	ISO 16968	#1013	Olive kernel
Chromium Cr	EN 15411	#1014	Solid recovered Fuels
Chromium Cr	ISO 16968	#1015	Palm kernel
Chromium Cr	ISO 16968	#1016	Coffee Grounds
Chromium Cr	ISO 16968	#1017	Biochar
Chromium Cr	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Chromium Cr	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Chromium Cr	ISO 16968	#1019	Miscanthus-Pellets
Chromium Cr	ISO 11885	#1024	Wood Ash
Chromium Cr *	DIN EN ISO 11885	#1023	Wood Waste
Chromium $^{VI}Cr^{VI}$	DIN EN 15192	#1024	Wood Ash
Cobalt Co	EN ISO 17294-2	#1009	Sewage Sludge
Cobalt Co	ISO 16968	#1010	Wood Pellets
Cobalt Co	ISO 16968	#1011	Wood Chips
Cobalt Co	ISO 16968	#1013	Olive kernel
Cobalt Co	EN 15411	#1014	Solid recovered Fuels
Cobalt Co	ISO 16968	#1015	Palm kernel
Cobalt Co	ISO 16968	#1016	Coffee Grounds
Cobalt Co	ISO 16968	#1017	Biochar
Cobalt Co	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Cobalt Co	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Cobalt Co	ISO 16968	#1019	Miscanthus-Pellets
Cobalt Co	EN 15297	#1023	Wood Waste
Cobalt Co	ISO 11885	#1024	Wood Ash
Colour Ry Lxaxbx	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Colour Ry Lxaxbx	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Contrairies	Düngemittelverordnung	#1024	Wood Ash
Contrairies	EN 15413	#1014	Solid recovered Fuels
Copper Cu	EN ISO 11885	#1008	Hard Coal Fly Ash
Copper Cu	EN ISO 17294-2	#1009	Sewage Sludge
Copper Cu	ISO 16968	#1010	Wood Pellets
Copper Cu	ISO 16968	#1011	Wood Chips
Copper Cu	ISO 16968	#1013	Olive kernel
Copper Cu	EN 15411	#1014	Solid recovered Fuels
Copper Cu	ISO 16968	#1015	Palm kernel
Copper Cu	ISO 16968	#1016	Coffee Grounds

Parameter	Standard	Number	Test object
Copper Cu	ISO 16968	#1017	Biochar
Copper Cu	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Copper Cu	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Copper Cu	ISO 16968	#1019	Miscanthus-Pellets
Copper Cu	ISO 11885	#1024	Wood Ash
Copper Cu *	DIN EN ISO 11885	#1023	Wood Waste
Crystallization water (350°C)	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Crystallization water (350°C)	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
CuO	ISO 13605	#1007 A	Hard coal ash
CuO	ISO 13605	#1007 B	Lignite ash
Decomposition method	ISO 16968	#1011	Wood Chips
Decomposition method	ISO 16968	#1013	Olive kernel
Decomposition method	ISO 16968	#1015	Palm kernel
Decomposition method	ISO 16968	#1016	Coffee Grounds
Decomposition method	ISO 16968	#1010	Wood Pellets
Decomposition method	ISO 16968	#1019	Miscanthus-Pellets
Decomposition method	EN 15411	#1014	Solid recovered Fuels
Decomposition method	Handbuch für das Eisenhüt	#1050	Iron ore
Decomposition method (aqua regia)	EN 13657	#1009	Sewage Sludge
Decomposition method (aqua regia)	EN 13657	#1008	Hard Coal Fly Ash
Decomposition method (aqua regia)	ISO 11466	#1024	Wood Ash
Decomposition method (aqua regia)*	EN 15297	#1023	Wood Waste
Decomposition method, microwave-assisted pressure	DIN 22022-1	#1000	Hardcoal
Decomposition method, microwave-assisted pressure	DIN 22022-1	#1002	Lignite
Decomposition method, microwave-assisted pressure	ISO 16968	#1017	Biochar
Decomposition method, microwave-assisted pressure	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Decomposition method, microwave-assisted pressure	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Decomposition method, microwave-assisted pressure	DIN 22022-1	#1025	Peat
Deformation temperature DT	ISO 540	#1002	Lignite
Deformation temperature DT	CEN/TR 15404	#1014	Solid recovered Fuels
Deformation temperature DT	ISO 540	#1025	Peat
Deformation temperature DT	ISO 540	#1000	Hardcoal
Deformation temperature DT	CEN/TS 15370-1	#1010	Wood Pellets
Deformation temperature DT	CEN/TS 15370-1	#1019	Miscanthus-Pellets
Deformation temperature DT	CEN/TS 15370-1	#1011	Wood Chips
Deformation temperature DT	CEN/TS 15370-1	#1013	Olive kernel
Deformation temperature DT	CEN/TS 15370-1	#1015	Palm kernel
Deformation temperature DT	CEN/TS 15370-1	#1016	Coffee Grounds
Deformation temperature DT	CEN/TS 15370-1	#1023	Wood Waste
Density, Bulk density (analog, lower volume <5L)	ISO 17828	#1010	Wood Pellets
Density, Bulk density (analog, lower volume <5L)	ISO 17828	#1019	Miscanthus-Pellets
Density, Bulk density of solid particles	EN 196-6	#1008	Hard Coal Fly Ash
Density, Bulk density tamped	EN ISO 787-11	#1008	Hard Coal Fly Ash
Density, Particle density	EN 15150	#1010	Wood Pellets
Density, Particle density	EN 15150	#1019	Miscanthus-Pellets
Density, solid (Thörner, pycnometer method)	ISO 9088	#1001	Cocking coal
Density, solid (Thörner, pycnometer method)	ISO 9088	#1002 A	Lignite
Diameter	ISO 17829	#1010	Wood Pellets
Diameter	ISO 17829	#1019	Miscanthus-Pellets
Dilatation: Contraction temperature as T2	ISO 349	#1001	Cocking coal
Dilatation: Maximum dilatation temperature as T3	ISO 349	#1001	Cocking coal
Dilatation: Percent contraction as %C	ISO 349	#1001	Cocking coal
Dilatation: Percent dilatation as %D	ISO 349	#1001	Cocking coal
Dilatation: Softening temperature as T1	ISO 349	#1001	Cocking coal
Dilatation: Swelling Properties, using a Dilatometer	ISO 349	#1001	Cocking coal
Dioxin-/Furan-content PCDD/F	Düngemittelverordnung	#1024	Wood Ash
Dioxin-/Furan-content PCDD/F (I-TEQ OMS)	HRGC/HRMS	#1024	Wood Ash
Dioxin-content PCDD (I-TEQ OMS)	HRGC/HRMS	#1017	Biochar
dl-PCB (WHO-TEQ)	Düngemittelverordnung	#1024	Wood Ash
Electrical conductivity (salinity)	ISO 11265	#1017	Biochar
EOX, extractable organic halogen	DIN 38414-17	#1014	Solid recovered Fuels

Parameter	Standard	Number	Test object
EOX, extractable organic halogen	DIN 38414-17	#1010	Wood Pellets
EOX, extractable organic halogen	DIN 38414-17	#1019	Miscanthus-Pellets
Fe_2O_3	ISO 13605	#1003	Coke
Fe_2O_3	ISO 13605	#1007 A	Hard coal ash
Fe_2O_3	ISO 13605	#1007 B	Lignite ash
Fe_2O_3	EN 196-2	#1008	Hard Coal Fly Ash
Fe_2O_3	ISO 16967	#1010	Wood Pellets
Fe_2O_3	ISO 16967	#1011	Wood Chips
Fe_2O_3	ISO 16967	#1013	Olive kernel
Fe_2O_3	EN 15410	#1014	Solid recovered Fuels
Fe_2O_3	ISO 16967	#1015	Palm kernel
Fe_2O_3	ISO 16967	#1016	Coffee Grounds
Fe_2O_3	ISO 16967	#1017	Biochar
Fe_2O_3	ISO 16967	#1019	Miscanthus-Pellets
Fe_2O_3	ISO 16967	#1023	Wood Waste
Fe_2O_3	ISO 16967	#1024	Wood Ash
Flow temperature FT	ISO 540	#1002	Lignite
Flow temperature FT	CEN/TR 15404	#1014	Solid recovered Fuels
Flow temperature FT	ISO 540	#1025	Peat
Flow temperature FT	ISO 540	#1000	Hardcoal
Flow temperature FT	CEN/TS 15370-1	#1010	Wood Pellets
Flow temperature FT	CEN/TS 15370-1	#1011	Wood Chips
Flow temperature FT	CEN/TS 15370-1	#1013	Olive kernel
Flow temperature FT	CEN/TS 15370-1	#1019	Miscanthus-Pellets
Flow temperature FT	CEN/TS 15370-1	#1023	Wood Waste
Flow temperature FT	CEN/TS 15370-1	#1016	Coffee Grounds
Flow temperature FT	CEN/TS 15370-1	#1015	Palm kernel
Fluorine F	DIN EN 14582	#1009	Sewage Sludge
Fluorine F	ISO 11724	#1000	Hardcoal
Fluorine F	ISO 11724	#1002	Lignite
Fluorine F	ISO 11724	#1010	Wood Pellets
Fluorine F	ISO 11724	#1011	Wood Chips
Fluorine F	ISO 11724	#1013	Olive kernel
Fluorine F	EN 15408	#1014	Solid recovered Fuels
Fluorine F	ISO 11724	#1015	Palm kernel
Fluorine F	ISO 11724	#1016	Coffee Grounds
Fluorine F	ISO 11724	#1019	Miscanthus-Pellets
Fluorine F	ISO 11724	#1025	Peat
Fluorine F *	DIN EN ISO 10304	#1023	Wood Waste
Free moisture	ISO 589	#1001	Cocking coal
Free-Swelling-Index (FSI) 1-2	ISO 501	#1001	Cocking coal
Free-Swelling-Index (FSI) 3-4	ISO 501	#1001	Cocking coal
Furan-content PCDF (I-TEQ OMS)	HRGC/HRMS	#1017	Biochar
Fusibility of ash, oxidising atmosphere **	Ash by 815°C	#1000	Hardcoal
Fusibility of ash, oxidising atmosphere**	Ash by 815°C	#1002	Lignite
Fusibility of ash, oxidising atmosphere**	Ash by 550°C	#1010	Wood Pellets
Fusibility of ash, oxidising atmosphere**	Ash by 550°C	#1011	Wood Chips
Fusibility of ash, oxidising atmosphere**	Ash by 550°C	#1013	Olive kernel
Fusibility of ash, oxidising atmosphere**	Ash by 550°C	#1014	Solid recovered Fuels
Fusibility of ash, oxidising atmosphere**	Ash by 550°C	#1015	Palm kernel
Fusibility of ash, oxidising atmosphere**	Ash by 550°C	#1016	Coffee Grounds
Fusibility of ash, oxidising atmosphere**	Ash by 550°C	#1019	Miscanthus-Pellets
Fusibility of ash, oxidising atmosphere**	Ash by 550°C	#1023	Wood Waste
Fusibility of ash, oxidising atmosphere**	Ash by 815°C	#1025	Peat
Gieseler plastometer method, Plastic properties,	ISO 10329	#1001	Cocking coal
Gieseler: Initial softening temperature	ISO 10329	#1001	Cocking coal
Gieseler: Maximum fluidity	ISO 10329	#1001	Cocking coal
Gieseler: Maximum fluidity temperature	ISO 10329	#1001	Cocking coal
Gieseler: Solidification temperature	ISO 10329	#1001	Cocking coal
Gross calorific value at constant volume Hov	ISO 1928	#1000	Hardcoal
Gross calorific value at constant volume Hov	ISO 1928	#1002	Lignite

Parameter	Standard	Number	Test object
Gross calorific value at constant volume Hov	ISO 1928	#1003	Coke
Gross calorific value at constant volume Hov	ISO 1928	#1006	Petroleum coke
Gross calorific value at constant volume Hov	DIN CEN/TS 16023	#1009	Sewage Sludge
Gross calorific value at constant volume Hov	ISO/DIS 18125	#1010	Wood Pellets
Gross calorific value at constant volume Hov	ISO/DIS 18125	#1011	Wood Chips
Gross calorific value at constant volume Hov	ISO 1928	#1012	Char Coal
Gross calorific value at constant volume Hov	ISO/DIS 18125	#1013	Olive kernel
Gross calorific value at constant volume Hov	EN 15400	#1014	Solid recovered Fuels
Gross calorific value at constant volume Hov	ISO/DIS 18125	#1015	Palm kernel
Gross calorific value at constant volume Hov	ISO/DIS 18125	#1016	Coffee Grounds
Gross calorific value at constant volume Hov	ISO/DIS 18125	#1017	Biochar
Gross calorific value at constant volume Hov	ISO/DIS 18125	#1019	Miscanthus-Pellets
Gross calorific value at constant volume Hov	ISO/DIS 18125	#1023	Wood Waste
Gross calorific value at constant volume Hov	ISO 1928	#1025	Peat
H/C-quotient, calculated		#1017	Biochar
Hardgrove-Index (HGI)	ASTM D 409	#1001	Cocking coal
Hardgrove-Index (HGI)	ASTM D 409	#1002 A	Lignite
Hemisphere temperature HT	ISO 540	#1002	Lignite
Hemisphere temperature HT	ISO 540	#1025	Peat
Hemisphere temperature HT	CEN/TR 15404	#1014	Solid recovered Fuels
Hemisphere temperature HT	ISO 540	#1000	Hardcoal
Hemisphere temperature HT	CEN/TS 15370-1	#1010	Wood Pellets
Hemisphere temperature HT	CEN/TS 15370-1	#1011	Wood Chips
Hemisphere temperature HT	CEN/TS 15370-1	#1013	Olive kernel
Hemisphere temperature HT	CEN/TS 15370-1	#1015	Palm kernel
Hemisphere temperature HT	CEN/TS 15370-1	#1016	Coffee Grounds
Hemisphere temperature HT	CEN/TS 15370-1	#1019	Miscanthus-Pellets
Hemisphere temperature HT	CEN/TS 15370-1	#1023	Wood Waste
Hydrogen H	ISO 29541	#1002	Lignite
Hydrogen H	EN 15407	#1014	Solid recovered Fuels
Hydrogen H	ISO 29541	#1025	Peat
Hydrogen H	ISO 16948	#1017	Biochar
Hydrogen H	ISO 29541	#1000	Hardcoal
Hydrogen H	DIN EN ISO 16948	#1009	Sewage Sludge
Hydrogen H	ISO 29541	#1006	Petroleum coke
Hydrogen H	ISO 16948	#1011	Wood Chips
Hydrogen H	ISO 29541	#1012	Char Coal
Hydrogen H	ISO 16948	#1013	Olive kernel
Hydrogen H	ISO 16948	#1015	Palm kernel
Hydrogen H	ISO 16948	#1016	Coffee Grounds
Hydrogen H	ISO 16948	#1010	Wood Pellets
Hydrogen H	ISO 16948	#1019	Miscanthus-Pellets
Hydrogen H	ISO 16948	#1023	Wood Waste
Hydrogen H	ISO 16948	#1024	Wood Ash
Hydrogen H	ISO 29541	#1003	Coke
Ignition point (according Wollers, Oxygen atmosphere)***	Moore/Wollers	#1001	Cocking coal
Ignition point (according Wollers, Oxygen atmosphere)***	Moore/Wollers	#1002 A	Lignite
Initial weight	UN-N4-Test	#1020	UN-N4 Test
Iron Fe	ISO 16968	#1010	Wood Pellets
Iron Fe	ISO 16968	#1011	Wood Chips
Iron Fe	ISO 16968	#1013	Olive kernel
Iron Fe	ISO 16968	#1015	Palm kernel
Iron Fe	ISO 16968	#1016	Coffee Grounds
Iron Fe	ISO 16968	#1017	Biochar
Iron Fe	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Iron Fe	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Iron Fe	ISO 16968	#1019	Miscanthus-Pellets
Iron Fe	EN 15297	#1023	Wood Waste
Iron Fe	ISO 11885	#1024	Wood Ash
Iron Fe	ISO 9516-1	#1050	Iron ore
Iron Fe	ISO 12980	#1006	Petroleum coke

Parameter	Standard	Number	Test object
IRSID I10 strength index, mechanical strength	ISO 556	#1005	Furnace coke
IRSID I40 strength index, mechanical strength	ISO 556	#1005	Furnace coke
K_2O	ISO 13605	#1003	Coke
K_2O	ISO 13605	#1007 A	Hard coal ash
K_2O	ISO 13605	#1007 B	Lignite ash
K_2O	EN 196-2	#1008	Hard Coal Fly Ash
K_2O	ISO 16967	#1010	Wood Pellets
K_2O	ISO 16967	#1011	Wood Chips
K_2O	ISO 16967	#1013	Olive kernel
K_2O	EN 15410	#1014	Solid recovered Fuels
K_2O	ISO 16967	#1015	Palm kernel
K_2O	ISO 16967	#1016	Coffee Grounds
K_2O	ISO 16967	#1017	Biochar
K_2O	ISO 16967	#1019	Miscanthus-Pellets
K_2O	ISO 16967	#1023	Wood Waste
K_2O	ISO 16967	#1024	Wood Ash
Lead Pb	ISO 16968	#1010	Wood Pellets
Lead Pb	ISO 16968	#1011	Wood Chips
Lead Pb	ISO 16968	#1013	Olive kernel
Lead Pb	EN 15411	#1014	Solid recovered Fuels
Lead Pb	ISO 16968	#1015	Palm kernel
Lead Pb	ISO 16968	#1016	Coffee Grounds
Lead Pb	ISO 16968	#1017	Biochar
Lead Pb	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Lead Pb	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Lead Pb	ISO 16968	#1019	Miscanthus-Pellets
Lead Pb	ISO 11885	#1024	Wood Ash
Lead Pb	EN ISO 11885	#1008	Hard Coal Fly Ash
Lead Pb	EN ISO 17294-2	#1009	Sewage Sludge
Lead Pb *	DIN EN ISO 11885	#1023	Wood Waste
Loss by combustion 550°C	DIN EN 15935	#1009	Sewage Sludge
Loss by combustion 815°C	ISO 1171	#1009	Sewage Sludge
Loss by combustion 950°C	EN 196-2	#1008	Hard Coal Fly Ash
Magnesium (water soluble) MgO	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Magnesium (water soluble) MgO	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Magnesium Mg	ISO 11885	#1024	Wood Ash
Manganese Mn	ISO 16968	#1010	Wood Pellets
Manganese Mn	ISO 16968	#1011	Wood Chips
Manganese Mn	ISO 16968	#1013	Olive kernel
Manganese Mn	EN 15411	#1014	Solid recovered Fuels
Manganese Mn	ISO 16968	#1015	Palm kernel
Manganese Mn	ISO 16968	#1016	Coffee Grounds
Manganese Mn	ISO 16968	#1017	Biochar
Manganese Mn	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Manganese Mn	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Manganese Mn	ISO 16968	#1019	Miscanthus-Pellets
Manganese Mn	EN 15297	#1023	Wood Waste
Manganese Mn	ISO 11885	#1024	Wood Ash
Manganese Mn	EN ISO 17294-2	#1009	Sewage Sludge
Manganese Mn	EN ISO 11885	#1008	Hard Coal Fly Ash
Mechanical durability DU	ISO 17831-1	#1010	Wood Pellets
Mechanical durability DU	ISO 17831-1	#1019	Miscanthus-Pellets
Mercury Hg	ISO 15237	#1000	Hardcoal
Mercury Hg	ISO 15237	#1002	Lignite
Mercury Hg	DIN EN 16175-1	#1009	Sewage Sludge
Mercury Hg	ISO 16968	#1010	Wood Pellets
Mercury Hg	ISO 16968	#1011	Wood Chips
Mercury Hg	ISO 16968	#1013	Olive kernel
Mercury Hg	EN 15411	#1014	Solid recovered Fuels
Mercury Hg	ISO 16968	#1015	Palm kernel
Mercury Hg	ISO 16968	#1016	Coffee Grounds

Parameter	Standard	Number	Test object
Mercury Hg	ISO 16968	#1017	Biochar
Mercury Hg	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Mercury Hg	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Mercury Hg	ISO 16968	#1019	Miscanthus-Pellets
Mercury Hg	ISO 12846	#1024	Wood Ash
Mercury Hg	ISO 15237	#1025	Peat
Mercury Hg	EN 1483	#1008	Hard Coal Fly Ash
Mercury Hg *	DIN EN 1483	#1023	Wood Waste
MgO	ISO 13605	#1003	Coke
MgO	ISO 13605	#1007 A	Hard coal ash
MgO	ISO 13605	#1007 B	Lignite ash
MgO	ISO 16967	#1010	Wood Pellets
MgO	ISO 16967	#1011	Wood Chips
MgO	ISO 16967	#1013	Olive kernel
MgO	EN 15410	#1014	Solid recovered Fuels
MgO	ISO 16967	#1015	Palm kernel
MgO	ISO 16967	#1016	Coffee Grounds
MgO	ISO 16967	#1017	Biochar
MgO	ISO 16967	#1019	Miscanthus-Pellets
MgO	ISO 16967	#1023	Wood Waste
MgO	ISO 16967	#1024	Wood Ash
MICUM 10, mechanical strength	ISO 555	#1005	Furnace coke
MiCUM 40, mechanical strength	ISO 556	#1005	Furnace coke
MnO_2	ISO 13605	#1003	Coke
MnO_2	ISO 13605	#1007 A	Hard coal ash
MnO_2	ISO 13605	#1007 B	Lignite ash
MnO_2	ISO 16967	#1010	Wood Pellets
MnO_2	ISO 16967	#1011	Wood Chips
MnO_2	ISO 16967	#1013	Olive kernel
MnO_2	EN 15410	#1014	Solid recovered Fuels
MnO_2	ISO 16967	#1015	Palm kernel
MnO_2	ISO 16967	#1016	Coffee Grounds
MnO_2	ISO 16967	#1017	Biochar
MnO_2	ISO 16967	#1019	Miscanthus-Pellets
MnO_2	ISO 16967	#1023	Wood Waste
MnO_2	ISO 16967	#1024	Wood Ash
Moisture (40-45°C)	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Moisture (40-45°C)	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Moisture (inherent) of analysis sample	ISO 11722	#1001	Cocking coal
Moisture (inherent) of analysis sample	ISO 5068-2	#1002 A	Lignite
Moisture (inherent) of analysis sample	ISO 687	#1003	Coke
Moisture (inherent) of analysis sample	ISO 11722	#1006	Petroleum coke
Moisture (inherent) of analysis sample	ISO 11722	#1008	Hard Coal Fly Ash
Moisture (Inherent) of analysis sample	ISO 18134-3	#1011	Wood Chips
Moisture (inherent) of analysis sample	ISO 11722	#1012	Char Coal
Moisture (Inherent) of analysis sample	ISO 18134-3	#1013	Olive kernel
Moisture (Inherent) of analysis sample	EN 15414-3	#1014	Solid recovered Fuels
Moisture (Inherent) of analysis sample	ISO 18134-3	#1015	Palm kernel
Moisture (Inherent) of analysis sample	ISO 18134-3	#1016	Coffee Grounds
Moisture (Inherent) of analysis sample	EN 15414-3	#1050	Iron ore
Moisture (inherent) of analysis sample	ISO 11722	#1000	Hardcoal
Moisture (inherent) of analysis sample	ISO 5068-2	#1002	Lignite
Moisture (Inherent) of analysis sample	DIN EN ISO 18134-3	#1009	Sewage Sludge
Moisture (Inherent) of analysis sample	ISO 18134-3	#1010	Wood Pellets
Moisture (inherent) of analysis sample	ISO 18134-3	#1017	Biochar
Moisture (Inherent) of analysis sample	ISO 18134-3	#1019	Miscanthus-Pellets
Moisture (Inherent) of analysis sample	ISO 18134-3	#1023	Wood Waste
Moisture (Inherent) of analysis sample	ISO 18134-3	#1024	Wood Ash
Moisture (inherent) of analysis sample	ISO 5068-2	#1025	Peat
Molybdenum Mo	ISO 11885	#1024	Wood Ash
Na_2O	ISO 13605	#1003	Coke

Parameter	Standard	Number	Test object
Na_2O	ISO 13605	#1007 A	Hard coal ash
Na_2O	ISO 13605	#1007 B	Lignite ash
Na_2O	EN 196-2	#1008	Hard Coal Fly Ash
Na_2O	ISO 16967	#1010	Wood Pellets
Na_2O	ISO 16967	#1011	Wood Chips
Na_2O	ISO 16967	#1013	Olive kernel
Na_2O	EN 15410	#1014	Solid recovered Fuels
Na_2O	ISO 16967	#1015	Palm kernel
Na_2O	ISO 16967	#1016	Coffee Grounds
Na_2O	ISO 16967	#1017	Biochar
Na_2O	ISO 16967	#1019	Miscanthus-Pellets
Na_2O	ISO 16967	#1023	Wood Waste
Na_2O	ISO 16967	#1024	Wood Ash
Na_2O-equivalent	EN 196-2	#1008	Hard Coal Fly Ash
Net calorific value at constant pressure Hup	ISO 1928	#1000	Hardcoal
Net calorific value at constant pressure Hup	ISO 1928	#1002	Lignite
Net calorific value at constant pressure Hup	ISO 1928	#1003	Coke
Net calorific value at constant pressure Hup	ISO 1928	#1006	Petroleum coke
Net calorific value at constant pressure Hup	DIN CEN/TS 16023	#1009	Sewage Sludge
Net calorific value at constant pressure Hup	ISO/DIS 18125	#1010	Wood Pellets
Net calorific value at constant pressure Hup	ISO/DIS 18125	#1011	Wood Chips
Net calorific value at constant pressure Hup	ISO 1928	#1012	Char Coal
Net calorific value at constant pressure Hup	ISO/DIS 18125	#1013	Olive kernel
Net calorific value at constant pressure Hup	EN 15400	#1014	Solid recovered Fuels
Net calorific value at constant pressure Hup	ISO/DIS 18125	#1015	Palm kernel
Net calorific value at constant pressure Hup	ISO/DIS 18125	#1016	Coffee Grounds
Net calorific value at constant pressure Hup	ISO/DIS 18125	#1017	Biochar
Net calorific value at constant pressure Hup	ISO/DIS 18125	#1019	Miscanthus-Pellets
Net calorific value at constant pressure Hup	ISO/DIS 18125	#1023	Wood Waste
Net calorific value at constant pressure Hup	ISO 1928	#1025	Peat
Net calorific value at constant volume Huv	ISO 1928	#1000	Hardcoal
Net calorific value at constant volume Huv	ISO 1928	#1002	Lignite
Net calorific value at constant volume Huv	ISO 1928	#1003	Coke
Net calorific value at constant volume Huv	ISO 1928	#1025	Peat
Nickel Ni	EN ISO 17294-2	#1009	Sewage Sludge
Nickel Ni	ISO 16968	#1010	Wood Pellets
Nickel Ni	ISO 16968	#1011	Wood Chips
Nickel Ni	ISO 16968	#1013	Olive kernel
Nickel Ni	EN 15411	#1014	Solid recovered Fuels
Nickel Ni	ISO 16968	#1015	Palm kernel
Nickel Ni	ISO 16968	#1016	Coffee Grounds
Nickel Ni	ISO 16968	#1017	Biochar
Nickel Ni	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Nickel Ni	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Nickel Ni	ISO 16968	#1019	Miscanthus-Pellets
Nickel Ni	EN 15297	#1023	Wood Waste
Nickel Ni	ISO 11885	#1024	Wood Ash
Nickel Ni	EN ISO 11885	#1008	Hard Coal Fly Ash
Nickel Ni	ISO 12980	#1006	Petroleum coke
NiO	ISO 13605	#1007 A	Hard coal ash
NiO	ISO 13605	#1007 B	Lignite ash
Nitrogen N	ISO 29541	#1002	Lignite
Nitrogen N	EN 15407	#1014	Solid recovered Fuels
Nitrogen N	ISO 29541	#1025	Peat
Nitrogen N	ISO 16948	#1017	Biochar
Nitrogen N	ISO 29541	#1000	Hardcoal
Nitrogen N	DIN EN ISO 16948	#1009	Sewage Sludge
Nitrogen N	ISO 16948	#1010	Wood Pellets
Nitrogen N	ISO 16948	#1011	Wood Chips
Nitrogen N	ISO 16948	#1013	Olive kernel
Nitrogen N	ISO 16948	#1015	Palm kernel

Parameter	Standard	Number	Test object
Nitrogen N	ISO 16948	#1016	Coffee Grounds
Nitrogen N	ISO 16948	#1019	Miscanthus-Pellets
Nitrogen N	ISO 16948	#1023	Wood Waste
Nitrogen N	ISO 16948	#1024	Wood Ash
Nitrogen N	ISO 29541	#1006	Petroleum coke
Nitrogen N	ISO 29541	#1012	Char Coal
Nitrogen N	ISO 29541	#1003	Coke
O/C-quotient, calculated		#1017	Biochar
Original Substance (loss by combustion 550 °C)	DIN EN 15169	#1024	Wood Ash
Oxygen, calculated	ISO 1170	#1017	Biochar
Oxygen, calculated	ISO 1170	#1024	Wood Ash
P_2O_5	ISO 13605	#1003	Coke
P_2O_5	ISO 13605	#1007 A	Hard coal ash
P_2O_5	ISO 13605	#1007 B	Lignite ash
P_2O_5	ISO 16967	#1010	Wood Pellets
P_2O_5	ISO 16967	#1011	Wood Chips
P_2O_5	ISO 16967	#1013	Olive kernel
P_2O_5	EN 15410	#1014	Solid recovered Fuels
P_2O_5	ISO 16967	#1015	Palm kernel
P_2O_5	ISO 16967	#1016	Coffee Grounds
P_2O_5	ISO 16967	#1017	Biochar
P_2O_5	ISO 16967	#1019	Miscanthus-Pellets
P_2O_5	ISO 16967	#1023	Wood Waste
P_2O_5	ISO 16967	#1024	Wood Ash
P_2O_5, dissoluble	EN 450-1	#1008	Hard Coal Fly Ash
PAH (EPA), GC/MS, Toluene-extraction	EN 15527	#1017	Biochar
PAH (EPA), GC/MS, Toluene-extraction	EN 15527	#1023	Wood Waste
PAH (EPA), GC/MS, Toluene-extraction	EN 15527	#1024	Wood Ash
Particle size distribution	Düngemittelverordnung	#1024	Wood Ash
PbO	ISO 13605	#1007 A	Hard coal ash
PbO	ISO 13605	#1007 B	Lignite ash
PCB 101	DIN EN 15308	#1009	Sewage Sludge
PCB 101	EN 15308	#1017	Biochar
PCB 101	EN 15308	#1024	Wood Ash
PCB 101 **	EN 15308	#1023	Wood Waste
PCB 138	EN 15308	#1024	Wood Ash
PCB 138	DIN EN 15308	#1009	Sewage Sludge
PCB 138	EN 15308	#1017	Biochar
PCB 138 **	EN 15308	#1023	Wood Waste
PCB 153	DIN EN 15308	#1009	Sewage Sludge
PCB 153	EN 15308	#1017	Biochar
PCB 153	EN 15308	#1024	Wood Ash
PCB 153 **	EN 15308	#1023	Wood Waste
PCB 180	DIN EN 15308	#1009	Sewage Sludge
PCB 180	EN 15308	#1017	Biochar
PCB 180	EN 15308	#1024	Wood Ash
PCB 180 **	EN 15308	#1023	Wood Waste
PCB 28	DIN EN 15308	#1009	Sewage Sludge
PCB 28	EN 15308	#1017	Biochar
PCB 28	EN 15308	#1024	Wood Ash
PCB 28 **	EN 15308	#1023	Wood Waste
PCB 52	DIN EN 15308	#1009	Sewage Sludge
PCB 52	EN 15308	#1017	Biochar
PCB 52	EN 15308	#1024	Wood Ash
PCB 52 **	EN 15308	#1023	Wood Waste
PCB Sum 6 PCB Ballschmiter	EN 15308	#1024	Wood Ash
PCB Sum 6 PCB Ballschmiter	DIN EN 15308	#1009	Sewage Sludge
PCB Sum 6 PCB Ballschmiter	EN 15308	#1017	Biochar
PCB Sum 6 PCB Ballschmiter **	EN 15308	#1023	Wood Waste
PCP Pentachlorphenol * (GC-ECD, GC-MS, HPLC)	CEN/TR 14823	#1023	Wood Waste
Perfluorinated Tenside (PFT) (PFOA + PFOS) HPLC	DIN 38407-42	#1024	Wood Ash

Parameter	Standard	Number	Test object
Pet: Huminite	ISO 7404-4	#1002 A	Lignite
Pet: Inertinite	ISO 7404-4	#1001	Cocking coal
Pet: Inertinite	ISO 7404-4	#1002 A	Lignite
Pet: Liptinite (exinite)	ISO 7404-4	#1001	Cocking coal
Pet: Liptinite (exinite)	ISO 7404-4	#1002 A	Lignite
Pet: Mineral	ISO 7404-4	#1001	Cocking coal
Pet: Mineral	ISO 7404-4	#1002 A	Lignite
Pet: Number points, all population	ISO 7404-5	#1001	Cocking coal
Pet: Number points, all population	ISO 7404-5	#1002 A	Lignite
Pet: Number points, main population	ISO 7404-5	#1001	Cocking coal
Pet: Number points, main population	ISO 7404-5	#1002 A	Lignite
Pet: Petrology of Coal, Maceral group composition		#1001	Cocking coal
Pet: Petrology of Coal, Maceral group composition		#1002 A	Lignite
Pet: Rm reflectance of Huminite, all population	ISO 7404-5	#1002 A	Lignite
Pet: Rm reflectance of vitrinite, all population	ISO 7404-5	#1001	Cocking coal
Pet: Rm reflectance on Huminite, main population	ISO 7404-5	#1002 A	Lignite
Pet: Rm reflectance on vitrinite, main population	ISO 7404-5	#1001	Cocking coal
Pet: Standard deviation 2s, all population	ISO 7404-5	#1001	Cocking coal
Pet: Standard deviation 2s, all population	ISO 7404-5	#1002 A	Lignite
Pet: Standard deviation 2s, main population	ISO 7404-5	#1001	Cocking coal
Pet: Standard deviation 2s, main population	ISO 7404-5	#1002 A	Lignite
Pet: Sum	ISO 7404-4	#1001	Cocking coal
Pet: Sum	ISO 7404-4	#1002 A	Lignite
Pet: Vitrinite	ISO 7404-4	#1001	Cocking coal
pH value	ISO 10390	#1017	Biochar
pH value	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
pH value	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
pH value	ISO 10390	#1024	Wood Ash
Phosphorus P	ISO 622	#1003	Coke
Phosphorus P	ISO 12980	#1006	Petroleum coke
Phosphorus P	ISO 9516-1	#1050	Iron ore
Phosphorus P	EN ISO 17294-2	#1009	Sewage Sludge
Phosphorus P_2O_5	ISO 11885	#1024	Wood Ash
Potassium K_2O	ISO 11885	#1024	Wood Ash
Preparation	ISO 13909-4	#1000	Hardcoal
Preparation	ISO 13909-4	#1001	Cocking coal
Preparation	ISO 5069-2	#1002	Lignite
Preparation	ISO 5069-2	#1002 A	Lignite
Preparation	ISO 13909-4	#1003	Coke
Preparation	ISO 13909-4	#1004	Coke
Preparation	ISO 13909-4	#1005	Furnace coke
Preparation	EN 196-2	#1008	Hard Coal Fly Ash
Preparation	EN 16179	#1009	Sewage Sludge
Preparation	ISO 14780	#1010	Wood Pellets
Preparation	ISO 14780	#1011	Wood Chips
Preparation	ISO 13909-4	#1012	Char Coal
Preparation	ISO 14780	#1013	Olive kernel
Preparation	ISO 14780	#1015	Palm kernel
Preparation	ISO 14780	#1016	Coffee Grounds
Preparation	ISO 14780	#1017	Biochar
Preparation	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Preparation	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Preparation	ISO 14780	#1019	Miscanthus-Pellets
Preparation	ISO 14780	#1023	Wood Waste
Preparation	ISO 14780	#1024	Wood Ash
Preparation	ISO 5069-2	#1025	Peat
Preparation	ISO 9516-1	#1050	Iron ore
Preparation	DIN 51940	#1006	Petroleum coke
Preparation	EN 15413	#1014	Solid recovered Fuels
Reactivity	Düngemittelverordnung	#1024	Wood Ash
Reactivity: CRI Coke reactivity index	ISO 18894	#1004	Coke

Parameter	Standard	Number	Test object
Reactivity: CSR Coke strength after reaction	ISO 18894	#1004	Coke
Residual moisture	ISO 589	#1001	Cocking coal
Residue, dry	DIN EN 14346	#1024	Wood Ash
screening residues at 32 µm	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
screening residues at 32 µm	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Selenium Se	ISO 11885	#1024	Wood Ash
Selenium Se	EN ISO 17294-2	#1000	Hardcoal
Selenium Se	EN ISO 17294-2	#1002	Lignite
Selenium Se	EN ISO 17294-2	#1025	Peat
Shrinkage starting temperature SST	CEN/TR 15404	#1014	Solid recovered Fuels
Shrinkage starting temperature SST	CEN/TS 15370-1	#1016	Coffee Grounds
Shrinkage starting temperature SST	CEN/TS 15370-1	#1023	Wood Waste
Shrinkage starting temperature SST	CEN/TS 15370-1	#1010	Wood Pellets
Shrinkage starting temperature SST	CEN/TS 15370-1	#1011	Wood Chips
Shrinkage starting temperature SST	CEN/TS 15370-1	#1013	Olive kernel
Shrinkage starting temperature SST	CEN/TS 15370-1	#1015	Palm kernel
Shrinkage starting temperature SST	CEN/TS 15370-1	#1019	Miscanthus-Pellets
Silicium Si	ISO 12980	#1006	Petroleum coke
Silicon Si	ISO 9516-1	#1050	Iron ore
SiO_2	ISO 13605	#1003	Coke
SiO_2	ISO 13605	#1007 A	Hard coal ash
SiO_2	ISO 13605	#1007 B	Lignite ash
SiO_2	EN 196-2	#1008	Hard Coal Fly Ash
SiO_2	ISO 16967	#1010	Wood Pellets
SiO_2	ISO 16967	#1011	Wood Chips
SiO_2	ISO 16967	#1013	Olive kernel
SiO_2	EN 15410	#1014	Solid recovered Fuels
SiO_2	ISO 16967	#1015	Palm kernel
SiO_2	ISO 16967	#1016	Coffee Grounds
SiO_2	ISO 16967	#1017	Biochar
SiO_2	ISO 16967	#1019	Miscanthus-Pellets
SiO_2	ISO 16967	#1023	Wood Waste
SiO_2	ISO 16967	#1024	Wood Ash
Size, Particle size >0,045 mm	EN 933-10	#1008	Hard Coal Fly Ash
SO_3	ISO 13605	#1003	Coke
SO_3	ISO 13605	#1007 A	Hard coal ash
SO_3	ISO 13605	#1007 B	Lignite ash
SO_3	ISO 16967	#1010	Wood Pellets
SO_3	ISO 16967	#1011	Wood Chips
SO_3	ISO 16967	#1013	Olive kernel
SO_3	EN 15410	#1014	Solid recovered Fuels
SO_3	ISO 16967	#1015	Palm kernel
SO_3	ISO 16967	#1016	Coffee Grounds
SO_3	ISO 16967	#1017	Biochar
SO_3	ISO 16967	#1019	Miscanthus-Pellets
SO_3	ISO 16967	#1023	Wood Waste
SO_3	ISO 16967	#1024	Wood Ash
SO_3	EN 196-2	#1008	Hard Coal Fly Ash
Sodium (water soluble) Na2O	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Sodium (water soluble) Na2O	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Sodium Na	ISO 12980	#1006	Petroleum coke
Sodium Na	ISO 11885	#1024	Wood Ash
Specific surface area, BET method	ISO 9277	#1017	Biochar
Sphere temperature ST	ISO 540	#1002	Lignite
Sphere temperature ST	ISO 540	#1025	Peat
Sphere temperature ST	ISO 540	#1000	Hardcoal
SrO	ISO 13605	#1003	Coke
SrO	ISO 13605	#1007 A	Hard coal ash
SrO	ISO 13605	#1007 B	Lignite ash
SrO	ISO 16967	#1010	Wood Pellets
SrO	ISO 16967	#1011	Wood Chips

Parameter	Standard	Number	Test object
SrO	ISO 16967	#1013	Olive kernel
SrO	EN 15410	#1014	Solid recovered Fuels
SrO	ISO 16967	#1015	Palm kernel
SrO	ISO 16967	#1016	Coffee Grounds
SrO	ISO 16967	#1017	Biochar
SrO	ISO 16967	#1019	Miscanthus-Pellets
SrO	ISO 16967	#1023	Wood Waste
SrO	ISO 16967	#1024	Wood Ash
Sulfur, forms of, Sulfide sulfur S^{2-}	ISO 157	#1001	Cocking coal
Sulfur, forms of, Sulfide sulfur S^{2-}	ISO 157	#1002 A	Lignite
Sulfur, forms of, Disulfide sulfur (pyrite sulfur) S^{-}	ISO 157	#1001	Cocking coal
Sulfur, forms of, Disulfide sulfur (pyrite sulfur) S^{-}	ISO 157	#1002 A	Lignite
Sulfur, forms of, Sulfate sulfur SO_4^{2-}	ISO 157	#1001	Cocking coal
Sulfur, forms of, Sulfate sulfur SO_4^{2-}	ISO 157	#1002 A	Lignite
Sulfur, Total S	EN 15408	#1014	Solid recovered Fuels
Sulfur, Total S	ISO 16994	#1017	Biochar
Sulfur, Total S	ISO 19579	#1000	Hardcoal
Sulfur, Total S	ISO 11885	#1024	Wood Ash
Sulfur, Total S	ISO 19579	#1006	Petroleum coke
Sulfur, Total S	DIN EN 14582	#1009	Sewage Sludge
Sulfur, Total S	ISO 16994	#1011	Wood Chips
Sulfur, Total S	ISO 19579	#1012	Char Coal
Sulfur, Total S	ISO 16994	#1015	Palm kernel
Sulfur, Total S	ISO 16994	#1016	Coffee Grounds
Sulfur, Total S	ISO 19579	#1003	Coke
Sulfur, Total S	ISO 16994	#1010	Wood Pellets
Sulfur, Total S	ISO 16994	#1019	Miscanthus-Pellets
Sulfur, Total S	ISO 16994	#1023	Wood Waste
Sulfur, Total S	ISO 16994	#1024	Wood Ash
Sulfur, Total S	ISO 16994	#1013	Olive kernel
Sulfur, Total S	ISO 19579	#1002	Lignite
Sulfur, Total S	ISO 19579	#1025	Peat
Sulfur, Total S	ISO 19579	#1001	Cocking coal
Sulfur, Total S	ISO 19579	#1002 A	Lignite
Sum dl-PCB + PCDD/F (WHO-TEQ)	Düngemittelverordnung	#1024	Wood Ash
Thallium Tl	ISO 16968	#1010	Wood Pellets
Thallium Tl	ISO 16968	#1011	Wood Chips
Thallium Tl	ISO 16968	#1013	Olive kernel
Thallium Tl	EN 15411	#1014	Solid recovered Fuels
Thallium Tl	ISO 16968	#1015	Palm kernel
Thallium Tl	ISO 16968	#1016	Coffee Grounds
Thallium Tl	ISO 16968	#1017	Biochar
Thallium Tl	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Thallium Tl	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Thallium Tl	ISO 16968	#1019	Miscanthus-Pellets
Thallium Tl	EN 15297	#1023	Wood Waste
Thallium Tl	ISO 11885	#1024	Wood Ash
Thallium Tl	EN ISO 17294-2	#1000	Hardcoal
Thallium Tl	EN ISO 17294-2	#1002	Lignite
Thallium Tl	EN ISO 17294-2	#1009	Sewage Sludge
Thallium Tl	EN ISO 17294-2	#1025	Peat
Thallium Tl	EN ISO 11885	#1008	Hard Coal Fly Ash
Tin Sn	ISO 16968	#1010	Wood Pellets
Tin Sn	ISO 16968	#1011	Wood Chips
Tin Sn	ISO 16968	#1013	Olive kernel
Tin Sn	EN 15411	#1014	Solid recovered Fuels
Tin Sn	ISO 16968	#1015	Palm kernel
Tin Sn	ISO 16968	#1016	Coffee Grounds
Tin Sn	ISO 16968	#1017	Biochar
Tin Sn	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Tin Sn	VGB M701	#1018 B	FGD Gypsum (lignite fiering)

Parameter	Standard	Number	Test object
Tin Sn	ISO 16968	#1019	Miscanthus-Pellets
Tin Sn	EN 15297	#1023	Wood Waste
Tin Sn	ISO 11885	#1024	Wood Ash
Tin Sn	EN ISO 17294-2	#1009	Sewage Sludge
Tin Sn	EN ISO 11885	#1008	Hard Coal Fly Ash
TiO_2	ISO 13605	#1003	Coke
TiO_2	ISO 13605	#1007 A	Hard coal ash
TiO_2	ISO 13605	#1007 B	Lignite ash
TiO_2	ISO 16967	#1010	Wood Pellets
TiO_2	ISO 16967	#1011	Wood Chips
TiO_2	ISO 16967	#1013	Olive kernel
TiO_2	EN 15410	#1014	Solid recovered Fuels
TiO_2	ISO 16967	#1015	Palm kernel
TiO_2	ISO 16967	#1016	Coffee Grounds
TiO_2	ISO 16967	#1017	Biochar
TiO_2	ISO 16967	#1019	Miscanthus-Pellets
TiO_2	ISO 16967	#1023	Wood Waste
TiO_2	ISO 16967	#1024	Wood Ash
Titanium Ti	ISO 12980	#1006	Petroleum coke
Titanium Ti	EN ISO 17294-2	#1009	Sewage Sludge
Titanium Ti	EN ISO 11885	#1008	Hard Coal Fly Ash
TML	IMSBC-code	#1022	TML
TML: Flow moisture point (FMP)	IMSBC-Code	#1022	TML
TML: Moisture content	IMSBC-Code	#1022	TML
TML: Transportable moisture limit (TML)	IMSBC-Code	#1022	TML
Total carbon C (TC)	ISO 29541	#1002	Lignite
Total carbon C (TC)	ISO 29541	#1025	Peat
Total moisture	ISO 589	#1001	Cocking coal
Total moisture	ISO 5068-1	#1002	Lignite
Total moisture	ISO 5068-1	#1002 A	Lignite
Total moisture	ISO 579	#1003	Coke
Total moisture	ISO 579	#1004	Coke
Total moisture	ISO 579	#1005	Furnace coke
Total moisture	ISO 579	#1006	Petroleum coke
Total moisture	EN 196-2	#1008	Hard Coal Fly Ash
Total moisture	ISO 18134-1	#1010	Wood Pellets
Total moisture	ISO 18134-1	#1011	Wood Chips
Total moisture	ISO 589	#1012	Char Coal
Total moisture	ISO 18134-1	#1013	Olive kernel
Total moisture	EN 15414-1	#1014	Solid recovered Fuels
Total moisture	ISO 18134-1	#1015	Palm kernel
Total moisture	ISO 18134-1	#1016	Coffee Grounds
Total moisture	ISO 18134-1	#1017	Biochar
Total moisture	ISO 18134-1	#1019	Miscanthus-Pellets
Total moisture	ISO 18134-1	#1024	Wood Ash
Total moisture	ISO 5068-1	#1025	Peat
Total moisture	EN 15934	#1009	Sewage Sludge
Total moisture *	ISO 18134-1	#1023	Wood Waste
Total organic carbon TOC, calculated (TC-TICcarbonate)		#1017	Biochar
UN-N4-Test: 100 mm cube, self-heating substances 140°	UN-N4-Test	#1020	UN-N4 Test
UN-N4-Test: 100 mm cube, tmax Reached after hours (h)	UN-N4-Test	#1020	UN-N4 Test
UN-N4-Test: 100 mm cube, Tmax. Temperature 0-24h	UN-N4-Test	#1020	UN-N4 Test
UN-N4-Test: 25 mm cube, self-heating substances 140°C	UN-N4-Test	#1020	UN-N4 Test
UN-N4-Test: 25 mm cube, tmax Reached after hours (h)	UN-N4-Test	#1020	UN-N4 Test
UN-N4-Test: 25 mm cube, Tmax. Temperature 0-24h	UN-N4-Test	#1020	UN-N4 Test
UN-N4-Test: Initial weight	UN-N4-Test	#1020	UN-N4 Test
V_2O_5	ISO 13605	#1007 A	Hard coal ash
V_2O_5	ISO 13605	#1007 B	Lignite ash
Vanadium V	EN ISO 17294-2	#1009	Sewage Sludge
Vanadium V	ISO 16968	#1010	Wood Pellets
Vanadium V	ISO 16968	#1011	Wood Chips

Parameter	Standard	Number	Test object
Vanadium V	ISO 16968	#1013	Olive kernel
Vanadium V	EN 15411	#1014	Solid recovered Fuels
Vanadium V	ISO 16968	#1015	Palm kernel
Vanadium V	ISO 16968	#1016	Coffee Grounds
Vanadium V	ISO 16968	#1017	Biochar
Vanadium V	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Vanadium V	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Vanadium V	ISO 16968	#1019	Miscanthus-Pellets
Vanadium V	EN 15297	#1023	Wood Waste
Vanadium V	ISO 11885	#1024	Wood Ash
Vanadium V	EN ISO 11885	#1008	Hard Coal Fly Ash
Vanadium V	ISO 12980	#1006	Petroleum coke
Volatile matter 900°C	ISO 562	#1000	Hardcoal
Volatile matter 900°C	ISO 562	#1002	Lignite
Volatile matter 900°C	ISO 562	#1003	Coke
Volatile matter 900°C	ISO 562	#1006	Petroleum coke
Volatile matter 900°C	ISO 18123	#1011	Wood Chips
Volatile matter 900°C	ISO 562	#1012	Char Coal
Volatile matter 900°C	ISO 18123	#1013	Olive kernel
Volatile matter 900°C	EN 15402	#1014	Solid recovered Fuels
Volatile matter 900°C	ISO 18123	#1015	Palm kernel
Volatile matter 900°C	ISO 18123	#1016	Coffee Grounds
Volatile matter 900°C	ISO 562	#1025	Peat
Volatile matter 900°C	ISO 562	#1009	Sewage Sludge
Volatile matter 900°C	ISO 18123	#1010	Wood Pellets
Volatile matter 900°C	ISO 18123	#1017	Biochar
Volatile matter 900°C	ISO 18123	#1019	Miscanthus-Pellets
Volatile matter 900°C	ISO 18123	#1023	Wood Waste
Volatile matter 900°C	ISO 18123	#1024	Wood Ash
Zinc Zn	EN ISO 11885	#1008	Hard Coal Fly Ash
Zinc Zn	EN ISO 17294-2	#1009	Sewage Sludge
Zinc Zn	ISO 16968	#1010	Wood Pellets
Zinc Zn	ISO 16968	#1011	Wood Chips
Zinc Zn	ISO 16968	#1013	Olive kernel
Zinc Zn	EN 15411	#1014	Solid recovered Fuels
Zinc Zn	ISO 16968	#1015	Palm kernel
Zinc Zn	ISO 16968	#1016	Coffee Grounds
Zinc Zn	ISO 16968	#1017	Biochar
Zinc Zn	VGB M701	#1018 A	FGD Gypsum (hardcoal fiering)
Zinc Zn	VGB M701	#1018 B	FGD Gypsum (lignite fiering)
Zinc Zn	ISO 16968	#1019	Miscanthus-Pellets
Zinc Zn	EN 15297	#1023	Wood Waste
Zinc Zn	ISO 11885	#1024	Wood Ash
Zinc Zn	ISO 12980	#1006	Petroleum coke
ZnO	ISO 13605	#1007 A	Hard coal ash
ZnO	ISO 13605	#1007 B	Lignite ash

DCC Delta Coal Control GmbH
Brandstraße 8
45701 Herten
GERMANY

Telefon: +49 209-1658-9429
Telefax: +49 209-1658-9431
E-Mail: info@dcc-germany.org

General Manager: K. Josten
District court: Amtsgericht Recklinghausen HRB 5574
VAT ID: DE 814 722 389
Tax-No.: 395/5749/1575

Bank account:
Sparkasse Vest Recklinghausen
Herzogenwall 5
45657 Recklinghausen / GERMANY
Konto-Nr.: 55 031 116
BLZ: 426 501 50
IBAN: DE 24 4265 0150 0055 0311 16
SWIFT: BIC WELADED1REK

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