



VERFAHRENSTECHNIK
FÜR ROHSTOFFE

UVR-FIA GmbH

Price List

January 2019

The price list contains mainly standard laboratory tests. For other test work or toll processing in our well-equipped pilot plant, see for example points 7 to 9, please send us your request by email to

info@uvr-fia.de

or call us by phone:

+49 3731 16212-20.

For questions about the examination methods,
please call the persons in charge as listed below.

Subject to amendment, please see www.uvr-fia.de for current prices.

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1 Preface

Sample delivery

Postal address:

UVR-FIA GmbH
Chemnitzer Straße 40
09599 FREIBERG/ SACHSEN
GERMANY

Loading/ unloading/ delivery of parcels:

Technical Centre and Laboratories
Entry Brückenstraße
09599 FREIBERG/ SACHSEN
GERMANY

Terms of payment

100 % after delivery of the analysis report and accounting by the contractor.

All prices are net plus German VAT. Shipping, packing and waste disposal will be charged at cost. Invoices are due 14 days after accounting for payment.

Description of your samples

The customer supplies a material safety data sheet (MSDS) prior to the tests (information for safe handling and disposal).

Results

Unless otherwise stated herein, all analyses are run as single determinations.

You receive the results as PDF file via e-mail. If desired, an additional postal delivery is possible.

For each mailing, 2.00 EUR postage and shipping costs will be charged.

The subsequent change of an analysis report (report format, language) entails additional charges, at least 20.00 EUR.

Quantity discount

More than 9 samples 10 % discount

Express order

For urgently required analysis results, a surcharge may be applied.

Storage of samples

Samples are retained for 4 weeks maximum. Customers may purchase additional storage time.

Return of samples will be charged at cost.



| 2 Particle size analysis | |
|---|--------------|
| 2.1 Laser diffraction | |
| <i>Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]juvr-fia.de)</i> | |
| Determination of particle size distributions according to ISO 13320-1 Instrument: Sympatec HELOS Measuring ranges: 0,18 - 35 µm; 0,9 - 175 µm; 1,8 - 350 µm; 4,5 - 875 µm | |
| • dry dispersion (dispersing device RODOS) single determination | 62,00 EUR |
| • dry dispersion (dispersing device RODOS) double determination | 92,00 EUR |
| • dispersion in water (dispersing device SUCELL) single determination | 85,00 EUR |
| • dispersion in water (dispersing device SUCELL) double determination | 114,00 EUR |
| • dispersion in ethanol/isopropyl alcohol (dispersing device SUCELL) ○ other dispersing agents upon request | 92,00 EUR |
| • presieving of dry samples in case of the exceeding of the measuring range | 30,00 EUR |
| • presieving of wet samples in case of the exceeding of the measuring range | 34,00 EUR |
| 2.2 Test sieving (sieve analysis with up to 6 screen cuts; screen cuts upon request) | |
| <i>Dipl.-Ing. Karen Grandissa (Tel.: +49 3731 16212-50, grandissa[at]juvr-fia.de)</i> | |
| • Sieve analysis with sieve shaker (tap sieving or oscillating screening machine) Sample mass: max. 500 g, measuring range: 0,025 - 8,0 mm procedure according to DIN 66165 method F | 80,00 EUR |
| • Ultrasonic screening with oscillating screening machine Sample mass: max. 500 g, measuring range: 0,025 - 8,0 mm procedure according to DIN 66165 method F | 105,00 EUR |
| • Wet sieving with analytical sieve shaker with rinsing device measuring range: 0,025 - 8,0 mm Procedure according to DIN 66165 method H | 128,00 EUR |
| • Ultrasonic wet screening with analytical sieve shaker with rinsing device measuring range: 0,025 - 8,0 mm Procedure according to DIN 66165 method H | 150,00 EUR |
| • Wet sieving, hand sieving measuring range: 0,025 - 8,0 mm Grain size analysis by hand sieving in stationary or non-stationary fluid; procedure according to DIN 66165 method B / C | upon request |
| • Sieve analysis with box sieve KSM 500 Feed grain size up to 150 mm, sample mass max. 10 kg, measuring range: 1,0 -90 mm | 110,00 EUR |
| • Grain size analysis of wood chips with box sieve KSM 500 measuring range: 1,0 - 90 mm Procedure according to ÖNORM M 7133 or EN 14961-1, EN 15415-1, DIN EN ISO 17827-1 (replacement for DIN EN 15149-1) | 116,00 EUR |



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| 2.3 Air jet sieving | |
| <i>Dipl.-Ing. Karen Grandissa (Tel.: +49 3731 16212-50, grandissa[at]uvr-fia.de)</i> | |
| Sieve analysis with air jet sieve, price per screen cut Procedure according to DIN 66165 method D, measuring range: 0,025 - 1,0 mm | 32,00 EUR |
| 3 Physical characterization | |
| 3.1 Surface area analysis according to BLAINE | |
| <i>Dipl.-Ing. Karen Grandissa (Tel.: +49 3731 16212-50, grandissa[at]uvr-fia.de)</i> | |
| Determination of the specific surface of powders by flow through method according to DIN 66126. True density required, if unknown, determination according to point 3.3. possible | 46,00 EUR |
| 3.2 Surface area analysis according to BET | |
| <i>Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]uvr-fia.de)</i> | |
| Determination of the specific surface of powders by nitrogen adsorption; single-point difference method developed by HAUL und DÜMBGEN according to DIN ISO 9277, Instrument: Differential-BET-Apparatus 'Area-Max I' (company Seifert Instruments UG), duplicate determination. True density required, if unknown, determination according to point 3.3. possible | 128,00 EUR |
| 3.3 Density | |
| <i>Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]uvr-fia.de)</i> | |
| <ul style="list-style-type: none"> • True density of solids by helium gas pycnometry Procedure according to DIN 66137, duplicate determination Instrument: Multivolume Pycnometer (company MICROMERITICS) | 45,00 EUR |
| <ul style="list-style-type: none"> • Density of coating materials and similar liquids Procedure according to DIN EN ISO 2811-1:2011, duplicate determination Instrument: ERICHSEN Pycnometer | 42,00 EUR |
| 3.4 Moisture content / loss in drying | |
| <i>Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]uvr-fia.de)</i> | |
| <ul style="list-style-type: none"> • Moisture content / loss in drying Material-specific drying with moisture analyzer: sample mass: 30 g max. | 22,00 EUR |
| <ul style="list-style-type: none"> • Moisture content / loss in drying of samples 20 kg resp. 10 l max. Material-specific drying with drying oven, only non-hygroscopic solids | 38,00 EUR |



| 3.5 Bulk density / apparent density | |
|--|-------------------------|
| <i>Dipl.-Ing. Karen Grandissa (Tel.: 03731 16212-50, grandissa[at]juvr-fia.de)</i> | |
| • Bulk density of bulk material Filling method with 1 l measuring vessel (in-house standard), triple determination | 47,00 EUR |
| • Apparent density of metallic powders Triple determination according to in-house standard based on DIN ISO 3923 part 1 | 47,00 EUR |
| 3.6 Loss on ignition | |
| <i>Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]juvr-fia.de)</i> | |
| Material-specific determination of the loss on ignition, in muffle furnace, up to 1300 °C, duplicate determination | 46,00 EUR |
| 3.7 Flowability of bulk solids | |
| <i>Dipl.-Ing. Karen Grandissa (Tel.: +49 3731 16212-50, grandissa[at]juvr-fia.de)</i> | |
| Determination of the flowability (flow channel) according to FISCHER | 135,00 EUR |
| Determination of the flowability according to IMSE | 78,00 EUR |
| Determination of the flowability/ pourability according to SONNTAG Price of the first measurement each additional measurement within an order | 122,00 EUR 48,00 EUR |
| 3.8 Rheological investigations | |
| <i>Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]juvr-fia.de)</i> | |
| Determination of flow curves and measurement of the dynamic viscosity Instrument: Rheotest-MLW viscometer | upon request |
| 3.9 Determination of compacted bulk volume and compacted bulk density | |
| <i>Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]juvr-fia.de)</i> | |
| Determination of compacted bulk volume and compacted bulk density, triple determination according to EN ISO 787-11 : 1995 Instrument: Stamping volumeter type STAV II (J. Engelmann AG) | 90,00 EUR |
| 3.10 X-ray fluorescence analysis | |
| <i>Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]juvr-fia.de)</i> | |
| Instrument: X-ray fluorescence analyzer NITON XL3t 980, Handheld instrument for powder samples and small pieces, determination of the content of the vast number of elements atomic numbers 12 (magnesium) to 83 (bismuth) and cerium, praseodymium, neodymium, thorium and uranium Minimum sample size for powder samples per measurement: 5 ml bulk volume | |
| Price of the first measurement each additional measurement within an order | 34,00 EUR 14,00 EUR |
| Determination of calibration data | upon request |



| 4 Chemical analyses | |
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| <i>Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]uvr-fia.de)</i> | |
| Chemical extractions of ions (digestion) for analyses | upon request |
| Chemical analyses, especially for the chemical analysis of minerals | upon request |
| Analysis of spar: determination of the content of CaCO ₃ , CaF ₂ , SiO ₂ and BaSO ₄ of samples bearing Fluorite and Barite | upon request |
| Realization and optimization of chemical processes | upon request |
| 5 Mineralogical investigations | |
| <i>Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]uvr-fia.de)</i> | |
| 5.1 X-ray diffraction | |
| Analytical overview Qualitative identification of main phases of polycrystalline substances, powder sample Instrument: SIEMENS X-ray diffractometer D 5000 | 166,00 EUR |
| Analytical overview (detailed phases), quantitative phase identification and high temperature measurements | upon request |
| 5.2 Mineralogical analyses of ores and minerals | |
| Stereomicroscopy, identification of minerals; determination of the point of mineral liberation, etc. | upon request |
| 5.3 Mohs hardness | |
| Surface hardness (MOHS-scale) | 50,00 EUR |
| 5.4 Float-sink-analysis by heavy liquid separation | |
| Density analysis of solid raw materials by using heavy liquids up to 3.3 g/cm ³ (Float-sink-analysis) | upon request |



| 6 Grindability tests | |
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| <i>Dipl.-Ing. Karen Grandissa (grandissa[at]uvr-fia.de)</i> | |
| BOND grindability test Determination of BOND ball mill work index W_i (BOND-Index) incl. sample preparation, required sample quantity: approx. 10 kg, optional: sieve analysis of the feed material (plus 100.00 EUR) | 845,00 EUR |
| ZEISEL TEST Determination of the grindability index according to ZEISEL, incl. sample preparation, incl. determination of density, required sample quantity: minimum 1 kg | 645,00 EUR |
| HARDGROVE grindability test – HGI Determination of the grindability index of coal according to HARDGROVE incl. sample preparation, required sample quantity: minimum 2 kg, procedure according to DIN 51742 | 392,00 EUR |
| Recording of a grindability curve Grinding to defined grain sizes (grain size distribution, specific surface), carried out with laboratory ball mills (\varnothing 305 or 750 mm), sample preparation as agreed | upon request |
| 7 Solid-liquid-separation | |
| <i>Dipl.-Chem. Wolfgang Ohmann (+49 3731 16212-52, ohmann[at]uvr-fia.de)</i> | |
| Preparation of samples Simulation of chemical processes, production of suspensions, dispersing by stirring, intensive stirring (Ultra-Turrax), ultrasonic | upon request |
| Filtration test according to VDI 2762 Characterization of the vacuum or pressure filtration behaviour, tests also possible with acidic, alkaline and organic substances, under inert gas or tempered atmosphere | upon request |
| Hydrocyclone tests Tests on material separation by hydrocyclones, nominal diameter of the hydrocyclones 20 - 100 mm, larger hydrocyclones on request, test series incl. product evaluation and interpretation of the results | upon request |
| Centrifugal separation tests Tests on material separation by centrifugal forces with the available technology solid bowl centrifuge, centrifugal filtration, etc. (laboratory scale), test series incl. product evaluation and interpretation of the results | upon request |
| Sedimentation tests; settling behaviour of suspensions | upon request |
| 8 Preparation of samples | |
| <i>Dipl.-Chem. Wolfgang Ohmann (+49 3731 16212-52, ohmann[at]uvr-fia.de)</i> | |
| Comminution (crushing, grinding), drying, sample splitting as required | at cost |



| 9 Further services | |
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| <i>Dr.-Ing. Andre Kamptner (Tel.: +49 3731 16212-22, kamptner[at]juvr-fia.de)</i> | |
| 9.1 Investigations in laboratory and pilot-scale (single apparatus or apparatus group) by process engineering methods | |
| Comminution Machines in laboratory and pilot-scale for coarse and fine comminution (several breaker mills, impact crushers, roll mills, grinding mills, etc.), wet and dry grinding | upon request |
| Classification Several screening machines and air classifiers, upstream classifiers, hydrocyclone technique | upon request |
| Separation Density separation, electrostatic separation, magnetic separation, flotation, cleansing, scrubbing and leaching | upon request |
| Agglomeration: granulation, pelletization, briquetting | upon request |
| Mixing and homogenization | upon request |
| Compressive and flexural strength of granulates, pellets | upon request |
| 9.2 Development and tests for the processing of raw materials, intermediates and industrial waste | upon request |
| 9.3 Field analyses for the assessment and optimization of operational facilities, in particular industrial grinding plants | upon request |
| 9.4 Dimensioning, adjustment, optimization and modeling of grinding plants | upon request |
| 9.5 Investigations on the use of grinding aids and for the reduction of the specific energy consumption | upon request |
| 9.6 Grinding, recycling in contract work | upon request |
| 9.7 Creation of special products in ultra-fine grain sizes | upon request |