VERFAHRENSTECHNIK
FÜR ROHSTOFFE

UVR-FIA GmbH

Price List

February 2018

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.

UVR-FIA GmbH
Chemnitzer Str. 40
D-09599 Freiberg
Germany
Amtsgericht Chemnitz, HRB 13450

Tel +49 3731 16212 20
Fax +49 3731 16212 99
Mail info@uvr-fia.de
Web www.uvr-fia.de

Management Board
Dr.-Ing. Andre Kamptner
Dr.-Ing. Henning Morgenroth

VAT-No. DE 184 559 397

Bank Account
Deutsche Bank AG
SWIFT: DEUT DE DB 879
IBAN: DE 61870700240050500800

Contents

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 client 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 a 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 max. Clients may purchase additional storage time.

Return of samples will be charged at cost.

2 Particle size analysis

2.1 Laser diffraction

Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]uvr-fia.de)

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	60,00 EUR
• dry dispersion (dispersing device RODOS) double determination	88,00 EUR
• dispersion in water (dispersing device SUCELL)	83,00 EUR
• dispersion in ethanol/isopropyl alcohol (dispersing device SUCELL) ○ other dispersing agents upon request	89,00 EUR
• presieving of dry samples in case of the exceeding of the measuring range	30,00 EUR

2.2 Test sieving (sieve analysis with up to 6 screen cuts; screen cuts upon request)

Dipl.-Ing. Karen Grandissa (Tel.: +49 3731 16212-50, grandissa[at]uvr-fia.de)

• 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	78,00 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	102,00 EUR
• Wet sieving with analytical sieve shaker with rinsing device measuring range: 0,025 - 8,0 mm Procedure according to DIN 66165 method H	124,00 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	145,00 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	107,00 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)	113,00 EUR

2.3 Air jet sieving	
Dipl.-Ing. Karen Grandissa (Tel.: +49 3731 16212-50, grandissa[at]uvr-fia.de)	
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	
Dipl.-Ing. Karen Grandissa (Tel.: +49 3731 16212-50, grandissa[at]uvr-fia.de)	
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	45,00 EUR
3.2 Surface area analysis according to BET	
Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]uvr-fia.de)	
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	
Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]uvr-fia.de)	
• True density of solids by helium gas pycnometry Procedure according to DIN 66137, duplicate determination Instrument: Multivolume Pyknometer (company MICROMERITICS)	45,00 EUR
• Density of coating materials and similar liquids Procedure according to DIN EN ISO 2811-1:2011, duplicate determination Instrument: ERICHSEN Pycnometer	41,00 EUR
3.4 Moisture content / loss in drying	
Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]uvr-fia.de)	
• Moisture content / loss in drying Material-specific drying with moisture analyzer: sample mass: 30 g max.	21,00 EUR
• Moisture content / loss in drying of samples 20 kg resp. 10 l max. Material-specific drying with drying oven, only non-hygroscopic solids	37,00 EUR

3.5 Bulk density / apparent density	
Dipl.-Ing. Karen Grandissa (Tel.: 03731 16212-50, grandissa[at]uvr-fia.de)	
• 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	
Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]uvr-fia.de)	
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	
Dipl.-Ing. Karen Grandissa (Tel.: +49 3731 16212-50, grandissa[at]uvr-fia.de)	
Determination of the flowability (flow channel) according to FISCHER	131,00 EUR
Determination of the flowability according to IMSE	76,00 EUR
3.8 Rheological investigations	
Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]uvr-fia.de)	
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	
Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]uvr-fia.de)	
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	
Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]uvr-fia.de)	
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	33,00 EUR 13,00 EUR
Determination of calibration data	upon request

4 Chemical analyses

Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]uvr-fia.de)

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

Dipl.-Chem. Wolfgang Ohmann (Tel.: +49 3731 16212-52, ohmann[at]uvr-fia.de)

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 according to MOHS	49,00 EUR

5.4 Float-sink-analysis by heavy liquid separation

Density analysis of raw materials by using heavy liquids up to 3.3 g/cm³ (Float-sink-analysis)	upon request

6 Grindability tests

Dipl.-Ing. Karen Grandissa (grandissa[at]uvr-fia.de)

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)	820,00 EUR
ZEISEL TEST Determination of the grindability index according to ZEISEL, incl. sample preparation, incl. determination of density, required sample quantity: minimum 1 kg	626,00 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	380,00 EUR
Recording of a grindability curve Grinding to defined grain sizes (grain size distribution, specific surface), carried out with laboratory ball mills (Ø 305 or 750 mm), sample preparation as agreed	upon request

7 Solid-liquid-separation

Dipl.-Chem. Wolfgang Ohmann (+49 3731 16212-52, ohmann[at]uvr-fia.de)

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

Dipl.-Chem. Wolfgang Ohmann (+49 3731 16212-52, ohmann[at]uvr-fia.de)	
Comminution (crushing, grinding), drying, sample splitting as required	at cost

9 Further services

Dr.-Ing. Andre Kamptner (Tel.: +49 3731 16212-22, kamptner[at]uvr-fia.de)

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