

PRICE LIST



Laboratories of the Institute of Geology, Czech. Acad. Sci.



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Introduction

Before the start of the work, it is recommended to read the requirements for samples submitted for the respective analyses, or to address the respective contact persons (in the order given in the booklet) to consult the details and the time needed for the analyses to be completed. The samples should be clearly labelled including a reference to the person responsible. Results of the analyses will be released, together with the spared/excess sample portions (if required), in the form agreed upon during the submission (printed reports, electronic outputs, etc.). The prices are tentative in some cases; ultimate prices depend on sample types, adjustments needed against the standard setup of laboratory devices, numbers of samples etc.

Comments on individual categories covered by the price list, explanation of price categories

The prices presented in the tables below are in Czech Crowns (CZK) and vary with respect to the actual exchange rate of CZK to Euro (EUR). The actual exchange rate can be found, for example, here: <https://www.cnb.cz/en/index.html>.

Code	Service / device	Matrix/material (stated within some services)	Unit	Price (CZK)
Code on the basis of which the services can be ordered.	A simplified description of the service or method employed. The laboratory device is specified where needed.	Type of matrix or material required for the analysis (unless otherwise agreed upon)	Units used for price calculation (hour/sample/ spectrum/ pattern, etc.)	Prices in Czech. These prices are liable to VAT in compliance with regulations effective at the time of invoicing.

Addresses and locations:

Main Research Centre at Lysolaje

Rozvojeová 269
165 00 Praha 6 – Lysolaje
Czech Republic

Laboratory of sample preparation (grinding shop)
Laboratory of electron beam analysis (scanning electron microscopy and chemical microanalysis)
Laboratory of Raman and infrared spectroscopy
Laboratory of X-ray diffraction
Laboratories of physico-chemical parameters determination
Laboratories of element determination
Laboratory of mineral separation
Clean and ICP-MS/TIMS laboratory
Fission track analysis (FTA) laboratory
Field gamma-ray spectrometry
Soil/sedimentological descriptions and analyses
Micropaleontological analysis
Information Centre and Library

Research Centre at Průhonice

252 43 Průhonice
Czech Republic

Sample preparation for paleomagnetic and rock magnetic studies
Paleomagnetic study
Study of rock magnetic properties
Other magnetic methods



Department of Analytical Methods

Laboratory of sample preparation (grinding shop)

Specifications for samples (price variations)/notes: Samples should be provided cleaned and marked appropriately with a detailed description of the required type of processing. In general, it is strongly recommended to consult the sample processing details and any potential special requirements directly with a technician before ordering the service.

Contact: Jaroslava Jabůrková, jaburkova@gli.cas.cz, +420 233 087 244; Roman Skála, skala@gli.cas.cz, +420 233 087 249

Code	Service / product	Unit	Price (CZK)
380.1.1	Covered thin section, standard size	sample	400.-
380.1.2	Covered thin section, standard size, oriented	sample	500.-
380.1.3	Covered thin section, friable material	sample	550.-
380.1.4	Covered thin section, friable material, oriented	sample	600.-
380.1.5	Covered thin section, heavily friable material	sample	700.-
380.1.6	Polished thin section, standard size	sample	700.-
380.1.7	Polished thin section, standard size, friable	sample	800.-
380.1.8	Polished thin section from multiple grains, standard size	sample	800.-
380.1.9	Polished section, diameter of 2.5 cm (1 inch)	sample	550.-
380.1.10	Polished section, diameter of 2.5 cm (1 inch) from multiple grains	sample	700.-
380.1.11	Polished section, diameter of 3 cm	sample	600.-
380.1.12	Polished section, diameter of 3 cm from multiple grains	sample	900.-
380.1.13	Large thin section 4×3 cm	sample	price by agreement
380.1.14	Cutting & polishing of a plane	1 cm ²	price by agreement
380.1.15	Re-polishing of (thin) sections	1 cm ²	100.-
380.1.16	Modification of non-standard polished sections/thin sections for analysis by electron probe microanalyzer (see 380.2.2) or LA-ICP-MS (see 310.5.1, 310.5.2)	sample	price by agreement

Laboratory of electron beam analysis (scanning electron microscopy and chemical microanalysis)

Specifications for samples (price variations)/notes: In case of complex or unusual systems, a surcharge may apply to cover the expenses associated with the development and tuning of specific analytical protocols. The type of samples and their preparation must be consulted with analysts before ordering work. For analyses using an electron microanalyzer (380.2.2) or elemental mapping (380.2.3), we recommend sample preparation in the form of polished (thin) sections at Inst Geol (see services 380.1.6 to 380.1.12).

Contact: Zuzana Korbellová, korbellova@gli.cas.cz, +420 233 087 214; Noemi Mészárosóvá, meszarosova@gli.cas.cz; Eva Pecková, peckova@gli.cas.cz, +420 233 087 214; +420 233 087 256/214; Roman Skála, skala@gli.cas.cz, +420 233 087 249

Code	Service / device	Unit	Price (CZK)
380.2.1	Scanning electron microscope TESCAN VEGA3XMU + energy dispersive X-ray spectrometer Oxford Instruments Ultim Max 65 (EDS)	hour	1,400.-
380.2.2	Electron probe microanalyzer (microprobe) JEOL JXA-8230 with five wave-dispersive X-ray spectrometers (WDS), energy dispersive X-ray spectrometer (EDS) and panchromatic cathodoluminescence detector	hour	1,400.-
380.2.3	Elemental mapping of polished (thin) sections. Data postprocessing is required, which is not included in the quoted price (see 380.2.5)* [§]	sample	500.-
380.2.4	Unattended point microanalysis. Prior settings of measurement points is required, which is not included in the quoted price (see 380.2.5)* [§]	sample	500.-
380.2.5	Post processing of element distribution maps for item 380.2.3 or setting up of analytical points for overnight measurements for item 380.2.4.	hour	1,400.-
380.2.6	Carbon-coating of samples for chemical analyses (EDS or WDS) or for back-scattered electron (BSE) imaging [†]	sample	100.-
380.2.7	Gold-sputtering of samples for secondary electron (SE) imaging	sample	150.-

*The minimum payment charged for the map collection is for 6 hours regardless of actual time spent by the mapping.

[§]Unattended analyses or mapping are realized without the presence of the operator based on his/her a priori set-up parameters, typically overnight or over the weekend. An operator must be contacted to decide on the feasibility of the selected analytical procedures before ordering these services.

[†]On condition that the analyses/measurements are taken in our laboratory, the item is not charged.



Laboratory of Raman and infrared spectroscopy

Specifications for samples (price variations)/notes: Raman spectra can be acquired from samples including fragments, powders, or polished section or thin sections, or liquids enclosed in suitable thin-walled vials. The samples must not be higher than 25 mm, wider than 80 mm and longer than 100 mm. Weight must not exceed 500 g. The collection of spectra is charged on the common hourly price basis. Finding the analysis spot and possible preparation of the sample for measurements (e.g., sample adjusting, photobleaching) are charged extra at the same price as spectra acquisition. Powdered samples are used to collect infrared spectra. Samples for which the customer explicitly requests their return will be stored for a maximum of 2 months after the analysis; other samples will be disposed of immediately after analysis. The data will be archived for a maximum of 1 year.

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Code	Service / device	Unit	Price (CZK)
380.3.1	Raman microspectrometer <i>S&I MonoVista CRS+</i> (location and documentation of measurement spots, selection of suitable excitation laser wavelength [wavelengths of 488, 532, 785 nm are available], measurement conditions optimization, spectrum collection, etc.)	hour	1,400.-
380.3.2	Fourier-transform infrared (FTIR) spectrometer <i>Nicolet i550</i> . Preferably, the spectra are taken by the Attenuated Total Reflection (ATR) technique. It is also possible to take spectra in transmission arrangement (typically in KBr pellet – see 380.3.3)	hour	1,400.-
380.3.3	Preparation of a KBr pellet	pellet	1,000.-
380.3.4	Identification of minerals with the RRUFF database, mathematic processing of spectra (baseline correction, spike removal, band deconvolution)	spectrum	price by agreement

Laboratory of X-ray diffraction

Diffraction patterns are normally collected with an X-ray powder diffractometer *Bruker D8 DISCOVER* in reflection Bragg-Brentano θ – 2θ geometry with $\text{CuK}\alpha_1$ radiation. Should the required type of analysis involve the need to change the configuration of the diffractometer, a one-time surcharge of CZK 10,000 will be charged to the price of the analysis/es.

Specifications for samples (price variations)/notes: Sample preparation is not included in the prices for data collection. In case that the sample is not provided ground to a powder of 10–20 μm grain size, a surcharge of CZK 200 per sample is added to the price of the analysis. Sample weight must not be larger than 500 g. Samples for which the customer explicitly requests their return will be stored for a maximum of 2 months after the analysis has been performed; other samples will be discarded immediately after analysis. The data will be archived for a maximum of 1 year.

Contact: Petr Mikysek, mikysek@gli.cas.cz, +420 233 087 289; Roman Skála, skala@gli.cas.cz, +420 233 087 249

Code	Service / device	Unit	Price (CZK)
380.4.1	Acquisition of preliminary overview pattern to optimize subsequent data collection strategy	pattern	400.-
380.4.2	Data collection for phase identification (typically in the range 3–70 $^{\circ}2\theta$ with a step width of 0.02 $^{\circ}2\theta$ and exposure of 1 s/step) [†]	pattern	600.-
380.4.3	Data acquisition of oriented specimens for clay mineral identification (normally in the range 2–40 $^{\circ}2\theta$ with a step width of 0.017 $^{\circ}2\theta$ and exposure of 0.8 s/step) ^{**}	pattern	600.-
380.4.4	Basic pattern evaluation – calculation of d's & I's	sample	200.-
380.4.5	Identification of clay minerals [‡]	sample	800.-
380.4.6	Qualitative phase analysis	sample	600.-
380.4.7	Semi-quantitative phase analysis of a mixture by the DIFFRAC.EVA [#] program	sample	1,000.-
380.4.8	Acquisition of powder pattern and/or data processing not quoted above	sample	price by agreement

[†]In the case that the data collection requires, based on the results of the preliminary overview diffraction pattern (380.4.1), a setting resulting in total experimental time exceeding 90 minutes, an extra payment of CZK 400 may be charged for each additional hour of data acquisition.

^{**}Normally, for clay mineral identification, two or three separate diffraction patterns are required for each sample; the first is collected from an oriented specimen of a separated clay fraction; the second is taken after saturating the specimen with ethylene glycol, and a potential third pattern is acquired after heating the sample to 550 $^{\circ}\text{C}$

^{**}Preparation of samples for clay mineral identification is not included in the price of the analysis; payments for the clay sample preparation are charged extra following the pricelist items Separation of clay fraction / Sample saturation by ethylene glycol / Sample heating of the Laboratory of mineral separation (see services 310.1.17 / 310.1.18 / 310.1.14)

[‡]Identification of clay minerals requires a collection of diffraction patterns of oriented specimens (see 380.4.3)

[#]The method requires that the corundum number for each phase in the mixture is available in the ICDD PDF2 database

**Department of Environmental Geology and Geochemistry****Laboratories of physico-chemical parameters determination**

Specifications for samples (price variations)/notes: Specific requirements for samples, matrices, etc. are given specifically for each analysis. Prices below are indicative only and may vary depending on the number of samples, the number of analysed elements, matrix, homogeneity of the sample, etc. Details on sample preparation for the required determinations and final costs of laboratory works should be consulted with the lab workers, preferably by email.

Contact: Jan Rohovec, rohovec@gli.cas.cz, +420 233 087 258; Šárka Matoušková, matouskov@gli.cas.cz, +420233 087 212; Tomáš Navrátil, navratilt@gli.cas.cz, +420 233 087 222

Code	Service / device	Matrix / material	Unit	Price (CZK)
	Basic sample workup before analysis			
340.352.1	Filtration through a 0.45 µm RC-disc	aqueous solution	sample	95.-
340.352.2	Filtration through a 0.45 µm (glass fiber disc)	aqueous solution	sample	110.-
340.352.3	Filtration through a paper filter (blue strip type)	aqueous solution	sample	80.-
340.352.4	Centrifugation of a liquid sample, 50 ml Apollo vial	aqueous solution	sample	50.-
	Drying, homogenization, calcination			
340.351.1	Lyophilization of a liquid sample or suspension	liquid or solid material	sample	750.-
340.346.1	Drying (overnight, dryer at 105 °C)	solid	sample	100.-
340.346.2	Water loss after drying at 105 °C in a dryer, overnight	solid, powdered	sample	120.-
340.346.3	Calcination at 550 °C	solid, powdered	sample	230.-
340.346.4	Weight loss after drying at 900 °C in an oven (LOI)	solid, powdered	sample	250.-
	Milling, oscillating mill			
340.330.1	Milling vessels: steel	solid	sample	520.-
340.330.2	Milling vessels: zirconia, without contamination with metals	solid	sample	560.-
340.330.3	Microscale milling; vessels: zirconia	solid	sample	620.-
340.330.4	Cryo-milling, T=77 K (liquid N ₂), vessels: steel	solid	sample	900.-
	Milling, agate ball mill			
340.346.5	Sample homogenisation in an agate mill	solid	sample	190.-

Code	Service / device	Matrix / material	Unit	Price (CZK)
	Sample decomposition			
340.346.10	Sample decomposition, mixture of HNO ₃ and HF in a PTFE beaker	solid, powdered, homogenised	sample	450.-
340.346.20	Sample decomposition, mixture of ultrapure HNO ₃ and HF in a PTFE vessel at normal pressure, for trace element analysis	solid, powdered, homogenised	sample	620.-
340.346.30	Sample decomposition in a mixture of HNO ₃ and HF, pressure ampoule, microwave oven	solid, powdered, homogenised	sample	950.-

Code	Service / device	Matrix / material	Unit	Price (CZK)
	Soil and sediments analyses			
340.348.1	Extraction according to the Mehlich III protocol. Element analyses please see 340.350.1	solid, powdered, homogenised	sample	200.-
340.348.2	Extraction with buffered oxalate according to Tamm. Element analyses please see 340.350.1	solid, powdered, homogenised	sample	200.-
340.348.3	Extraction with buffered citrate (pH 8.5). Element analyses please see 340.350.1	solid, powdered, homogenised	sample	200.-
340.348.4	Extraction according to the CBD protocol (citrate-bicarbonate-dithionite). Element analyses please see 340.350.1	solid, powdered, homogenised	sample	600.-
340.348.5	Determination of leachable calcium and phosphate, extraction with aq. HCl	solid, powdered, homogenised	sample	520.-
340.348.6	Determination of pH (active, in suspension)	soil, sieved	sample	125.-
340.348.7	Determination of pH (exchangable, KCl)	soil, sieved	sample	125.-
340.348.8	Determination of cationic exchange capacity (Na, K, Mg, Ca) with ammonium acetate	soil, sieved	sample	300.-
340.348.9	Determination of CEC with barium chloride according to the Mehlich procedure, pH 8.1	soil, sieved	sample	300.-



340.348.10	Determination of effective sorption capacity ECEC (Na, K, Mg, Ca)	soil, sieved	sample	250.-
340.348.11	Determination of exchangeable acidity in the extract	soil, sieved	sample	150.-
340.348.12	Extraction of powdered solid sample with aqua regia. Element analyses please see 340.350.1	solid, powdered, homogenised	sample	160.-

Code	Service / device	Matrix / material	Unit	Price (CZK)
	Electrochemical analyses			
340.352.5	Determination of pH (natural water)	aqueous solution	sample	75.-
340.352.6	Determination of conductivity (natural water)	aqueous solution	sample	60.-
340.352.7	Determination of fluoride (ISE)	aqueous solution	sample	75.-

Code	Service / device	Matrix / material	Unit	Price (CZK)
	Determination of anions using technique of high-pressure liquid chromatography – HPLC			
340.352.8	Simultaneous determination of chloride, sulphate and nitrate	not acidified aqueous solution freshly filtered through a 0.45µm filter	sample	550.-

Code	Service / device	Matrix / material	Unit	Price (CZK)
	Granulometry			
340.G.1	Basic granulometric analysis on a laser granulometer	particle size to 1 mm	sample	360.-
340.G.2	Granulometric analysis of a carbonate free sample	particle size to 1 mm	sample	360.-
340.G.3	Granulometric analysis of a sample without organic mas	particle size to 1 mm	sample	360.-

Laboratories of element determination

Specifications for samples (price variations)/notes: Specific requirements for samples, matrices, etc. are given specifically for each analysis. Prices below are indicative only and may vary depending on the number of samples, the number of analysed elements, matrix, homogeneity of the sample, etc. Details on sample preparation for the required determinations and final costs of laboratory works should be consulted with the lab workers, preferably by email.

Contact: Jan Rohovec, rohovec@gli.cas.cz, +420 233 087 258; Šárka Matoušková, matouskov@gli.cas.cz, +420 233 087 212; Tomáš Navrátil, navratilt@gli.cas.cz, +420 233 087 222

Code	Service / device	Matrix	Unit	Price (CZK)
	ICP OES: optical emission spectroscopy with inductively coupled plasma	filtered liquid solution, according to e.g. 340.352.1		
340.350.1	Basic set (Al, Ca, Fe, K, Mg, Mn, Na, P, S, Si)	aqueous solution, acidified	sample	600.-
340.350.2	One element (not included in the basic set) accessible for ICP EOS in concentration 1 - 100 ppm	salt-free aqueous solution, acidified	sample	150.-
340.350.3	One element (not included in the basic set) accessible for ICP EOS in concentration 0,5 - 1 ppm. Trace elements typically	salt-free aqueous solution, acidified	sample	200.-

Code	Service / device	Matrix	Unit	Price (CZK)
	Determination of mercury by CV AAS technique in a solid sample			
340.351.10	Determination of total mercury, THg content in the range of 0.2 ng·g ⁻¹ to 150 ng·g ⁻¹ of the sample	solid, homogenised powdered	sample	200.-
340.351.20	Determination of total mercury, THg content over 150 ng·g ⁻¹ of the sample	solid, homogenised powdered	sample	220.-
340.351.30	Determination of total mercury, THg in solid sample containing sulphur	solid, homogenised	sample	250.-
	Ultra trace total mercury determination by CV AFS technique in a liquid sample			
340.351.40	Determination of total mercury by CV AFS, limit of quantification 0.25 ppt Hg	liquid, stabilised sample, non-foaming	sample	800.-
	Determination of gaseous Hg⁰			
340.351.50	Determination of gaseous mercury Hg ⁰ in the atmosphere by a portable mercury-meter at the site	atmosphere at the measurement site	1 hour + travel expenses	1,800.- + travel expenses



Code	Service / device	Matrix	Unit	Price (CZK)
	Speciation analyses			
340.347.1	Speciation analysis of Al using PCV technique (covering 3 items below)	liquid solution with no pH adjustment and no stabilisation	sample	1,100.-
	Monomeric organic Al			
	Total monomeric Al			
	Acid soluble Al			
340.347.2	Speciation analysis of sulphur (covering 4 items below)	solid homogeneous powdered	sample	3,150.-
	Ionic, exchangeable sulphate	as above		
	Organically bound sulphate	as above		
	Organically bound sulphide sulphur (reduced)	as above		
	Total content of sulphur (ICP OES)	as above		
340.347.3	Speciation analysis of iron (covering 3 items below)	liquid stabilised solution	sample	380.-
	Determination of bivalent Fe (UV VIS)	as above		
	Determination of trivalent Fe (UV VIS)	as above		
	Determination of total Fe (ICP EOS)	as above		
	Speciation analysis of phosphorus:			
340.347.4	Simplified fractionation: inorganic phosphate, organically bound phosphate (2 fractions in total)	solid homogeneous powdered	sample	750.-
340.347.5	Phosphate fractionation: exchangeable, Al/Fe oxyhydroxide bound, organically bound, apatite phosphate (4 fractions in total)	solid homogeneous powdered	sample	1,100.-

Code	Service / device	Matrix	Unit	Price (CZK)
	UV VIS spectrometry			
340.349.1	Determination of absorbance without adding an auxiliary reagent	turbidity-free aqueous solution	sample	120.-
340.349.2	Determination of absorbance at 410 nm	turbidity-free aqueous solution	sample	130.-
340.349.3	Determination of absorbance at 254 nm	turbidity-free natural water	sample	130.-
340.349.4	Determination of ferrous cation	stabilized, turbidity-free aqueous solution	sample	150.-
340.349.5	Determination of phosphate through phosphomolybdenane	liquid, acidified, filtered	sample	150.-
340.349.6	Determination of sulphide	stabilized, turbidity-free aqueous solution	sample	150.-
340.349.7	Determination of ammonium ion	acidified, turbidity-free aqueous solution	sample	150.-

Code	Service / device	Matrix	Unit	Price (CZK)
	Differential thermal analysis and differential scanning calorimetry, without interpretation			
340.349.11	Determination in corundum crucibles in air atmosphere, temperature range 20–1000 °C. DTA and DSC record	solid, powdered, homogenised	sample	1,800.-
340.349.12	Determination in platinum crucibles in Ar atmosphere, temperature range 20–700 °C. DTA and DSC record	solid, powdered, homogenised	sample	2,250.-
340.349.13	Special works according to customer request	solid, powdered, homogenised	sample	please contact dr. Matoušková

Code	Service / device	Matrix	Unit	Price (CZK)
	Determination of inorganic, organic and total carbon - DOC, IC, TOC			
340.349.20	Determination of dissolved organic carbon (DOC) in a liquid sample	aqueous solution	sample	440.-
340.349.21	Determination of total inorganic carbon (TOC) in a liquid sample	aqueous solution	sample	440.-
340.349.22	Determination total carbon (TC) in solid sample	solid, powdered, homogenised	sample	1,000.-



340.349.23	Determination of total inorganic carbon (IC) in a solid sample after decomposition with H ₃ PO ₄ (e.g., cave materials, industrially mined rocks)	solid, powdered, homogenised	sample	1,000.-
340.349.24	Determination of total organic carbon (TOC) in a solid sample of geological origin (e.g., slate, shale, coal, carbonaceous rocks)	solid, powdered, homogenised	sample	1,100.-

Code	Service / device	Matrix	Unit	Price (CZK)
	<i>Simultaneous determination of C, H, N, S</i>			
340.349.30	Determination of total organic C, H, N, S content; typical for biomass, soil, environmental samples	solid, powdered, homogenised	sample	450,-

Department of Paleobiology and Paleoecology

Micropaleontological analyses

Specifications for samples (price variations)/notes: Samples have to be prepared in accordance with demands of the laboratory workers, see the contacts below.

Contacts: Ladislav Slavík, slavik@gli.cas.cz, +420 233 087 247; Jiří Bek, bek@gli.cas.cz, +420 233 087 264

Code	Service	Unit	Price (CZK)
	<i>Palynological analysis</i>		
330.1.1	Preparation of palynological sample (maceration)	sample	1,000.-
330.1.2	Palynological evaluation report	sample	1,300.-
	<i>Conodont sample analysis</i>		
330.1.3	Conodont sample maceration, preparation of residue	each 5 kg	2,500.-
330.1.4	Concentration of insoluble residue	see 310.1.7	see 310.1.7
330.1.5	Biostratigraphic analysis	sample	3,100.-



Department of Geological Processes

Laboratory of mineral separation

Specifications for samples (price variations)/notes: The listed prices are approximate. Price increase or decrease may occur after the placement of an order and consultation, depending on the number of samples, the amount of material, the type of rock etc. Sample size should not exceed ca. 10 cm, otherwise a surcharge of CZK 60 is imposed for the crushing of oversized samples.

Contact: Lucie Mrázková, mrazkova@gli.cas.cz or Martin Štastný, stastny@gli.cas.cz, +420 233 087 233, +420 233 087 285. For rock block cutting with diamond cutting discs (310.1.20): Ladislav Polák, polakl@gli.cas.cz, +420 233 087 212; Michal Roll, roll@gli.cas.cz, +420 233 087 233; Šimon Kdýr, kdyr@gli.cas.cz, +420 272 690 115.

Code	Service	Unit	Price (CZK)
310.1.1	Crushing	each 1 kg	140.-
310.1.2	Draining	each 1 kg	90.-
310.1.3	Drying	each 1 kg	50.-
310.1.4	Floating	each 1 kg	110.-
310.1.5	Sieving	each 1 kg	150.-
310.1.6	Magnetic separation	each 5 kg	300.-
310.1.7	Separation in bromoform	each 100 g	250.-
310.1.8	Separation in methylene iodide	each 5 g	250.-
310.1.9	Separation in Clerici solution	each 5 g	250.-
310.1.10	Purification by centrifugation in heavy liquids	each 2 g	150.-
310.1.11	Purification in magnetic separator	each 3 g	200.-
310.1.12	Grinding for analytic methods	sample 100 g	190.-
310.1.13	Annealing of sample under 105 °C	sample	50.-
310.1.14	Annealing of sample under 550 °C	sample	90.-
310.1.15	Decomposition of organic matter with hydrogen peroxide	sample	150.-
310.1.16	Decomposition of carbonate with monochloroacetic acid	sample	50.-
310.1.17	Separation of clay fraction	sample	120.-
310.1.18	Sample saturation by ethylene glycol	sample	60.-
310.1.19	Rock block cutting	hour	1,000.-
310.1.20	Separation of zircon from soft rocks (crushing, sieving, floating, drying, magnetic separation, separation in heavy liquids)	sample	2,500.-
310.1.21	Separation of zircon from hard rocks (crushing, sieving, floating, drying, magnetic separation, separation in heavy liquids)	sample	3,000.-

Clean and ICP-MS/TIMS laboratory

Specifications for samples (price variations)/notes: Powdered samples for the analyses (200 mesh) should weigh at least 0.5 g and MUST be delivered in plastic bottles whose size reflects the amount of the sample. For the determination of highly siderophile elements (Os, Ir, Ru, Pd, Pt and Re) and ¹⁸⁷Os/¹⁸⁸Os isotopic ratios, we request 0.2 to 5 g of material depending on the expected concentrations of these elements (rock matrix). For archaeological materials and their Sr and Pb isotopic analyses, at least 20 mg and 0.2 g of material, respectively, are needed. The Re-Os dating of molybdenite usually requires 10 to 50 mg of material depending on the size of molybdenite crystals and expected Re contents. In general, all decomposition procedures and the type of the analyses should be consulted with laboratory staff listed below.

Solid samples for the laser ablation analyses should be prepared as rounded-polished sections (2.5 cm in diameter) and/or thin sections at least 150 µm thick (300 µm if possible). Exact positions of the analysed points need to be adjusted before the analyses; please consult the details on this with the corresponding laboratory staff listed below.

The listed prices may vary depending on the amounts of analysed samples, the number of analysed elements, type of material, solution matrix etc.

Contact: Jana Ďurišová, durisova@gli.cas.cz, +420 233 087 212 (ICP-MS/LA-ICP-MS trace element and Pb isotopic analyses); Šárka Matoušková, matouskov@gli.cas.cz, +420 233 087 212 (ICP-MS trace element analyses, LA-ICP-MS, U-Pb carbonate geochronology, Pb isotopic analyses); Lukáš Ackerman, ackerman@gli.cas.cz, +420 233 087 240 (clean lab, highly siderophile element and Re-Os isotopic analyses, Re-Os geochronology, TIMS analyses); Martin Svojtka, svojtka@gli.cas.cz, +420 233 087 242 (LA-ICP-MS U-Pb geochronology and LA-ICP-MS trace element analyses); Jiří Sláma, slama@gli.cas.cz, +420 233 087 236 (LA-ICP-MS U-Pb geochronology and Lu-Hf geochronology isotopic analyses)

Code	Service / device	Unit	Price (CZK)
	Decomposition and separation protocols		
310.2.1	Decomposition of silicate rocks (HF + HNO ₃)	sample	480.-
310.2.2	Decomposition of silicate rocks (HF + HNO ₃) with fusion (e.g., zircon and/or spinel-bearing rocks)	sample	820.-
310.2.3	Decomposition of carbonate-rich rocks	sample	320.-



310.2.4	Decomposition of silicate rocks and/or sulphides for the determination of sulphur contents	sample	450.-
310.2.5	Decomposition of silicate rocks and/or sulphides for the determination of Ir, Ru, Pd, Pt + anion exchange separation + determination of Ir, Ru, Pd, Pt contents by ICP-MS (isotopic dilution); data processing	sample	5,700.-
310.2.6	Silicate rock digestion, ion chromatography separation of Hf and determination of Hf isotopic composition ($^{176}\text{Hf}/^{177}\text{Hf}$) using MC-ICP-MS instrument; data processing	sample	3,000.-
310.2.7	Silicate rock digestion, ion chromatography separation of Hf, determination of Hf isotopic composition ($^{176}\text{Hf}/^{177}\text{Hf}$) and precise Hf concentration (isotopic dilution) using MC-ICP-MS instrument; data processing	sample	3,800.-
310.2.8	Silicate rock digestion, ion chromatography separation of Hf and Lu, determination of Hf isotopic composition ($^{176}\text{Hf}/^{177}\text{Hf}$) and precise Hf and Lu concentration (isotopic dilution) using MC-ICP-MS instrument; data processing	sample	5,300.-
310.2.9	Decomposition of silicate rocks or sulfides for the determination of Re and Os + anion exchange and CHCl_3 separation + determination of Re contents by ICP-MS (isotopic dilution) + determination of Os content and $^{187}\text{Os}/^{188}\text{Os}$ by N-TIMS; data processing	sample	6,850.-
310.2.10	Decomposition of SiO_2 -rich silicate rocks (e.g., basalt) for the determination of Re, Os, Ir, Ru, Pd, Pt + anion exchange and CHCl_3 separation + determination of Ir, Ru, Pd, Pt, Re contents by ICP-MS (isotopic dilution) + determination of Os content and $^{187}\text{Os}/^{188}\text{Os}$ by N-TIMS; data processing	sample	8,450.-
310.2.11	Decomposition of sulfides/meteorites for the determination of Re, Os, Ir, Ru, Pd, Pt + anion exchange and CHCl_3 separation + determination of Ir, Ru, Pd, Pt, Re contents by ICP-MS (isotopic dilution) + determination of Os content and $^{187}\text{Os}/^{188}\text{Os}$ by N-TIMS; data processing	sample	8,450.-
310.2.12	Decomposition of silicate or carbonate-rich rocks (including furnace ashing for C-rich samples); Mo separation by anion exchange chromatography; determination of stable Mo isotopic composition ($\delta^{98}\text{Mo}$) a Mo content (isotopic dilution) using MC-ICPMS instrument; data processing	sample	6,060.-
310.2.13	Decomposition of silicate rocks (fusion); Si separation by ion exchange chromatography; determination of Si isotopic composition ($\delta^{30}\text{Si}$) by MC-ICPMS instrument, data processing	sample	6,360.-
310.2.14	Decomposition of archeological material (enamel, bones) or carbonate; Sr separation using ion exchange chromatography, determination of $^{87}\text{Sr}/^{86}\text{Sr}$ using TIMS; data processing	sample	3,020.-
310.2.15	Decomposition of archeological material (e.g., metal artefacts, slag) for the determination of Re, Os + anion exchange and CHCl_3 separation + determination of Re contents by ICP-MS (isotopic dilution) + determination of Os content and $^{187}\text{Os}/^{188}\text{Os}$ by N-TIMS; data processing	sample	5,900.-
310.2.16	Decomposition of archeological material (enamel, bones); Sr and Pb separation using ion exchange chromatography, determination of $^{87}\text{Sr}/^{86}\text{Sr}$, $^{206}\text{Pb}/^{204}\text{Pb}$, $^{207}\text{Pb}/^{204}\text{Pb}$ a $^{208}\text{Pb}/^{204}\text{Pb}$ using TIMS; data processing	sample	4,600.-
310.2.17	Decomposition of silicate- or carbonate-rich rocks; Sr and Nd separation using ion exchange chromatography, determination of $^{87}\text{Sr}/^{86}\text{Sr}$ and $^{143}\text{Nd}/^{144}\text{Nd}$ using TIMS; data processing	sample	5,700.-
310.2.18	Decomposition of silicate- or carbonate-rich rocks; Sr, Nd and Pb separation using ion exchange chromatography, determination of $^{87}\text{Sr}/^{86}\text{Sr}$, $^{143}\text{Nd}/^{144}\text{Nd}$, $^{206}\text{Pb}/^{204}\text{Pb}$, $^{207}\text{Pb}/^{204}\text{Pb}$ a $^{208}\text{Pb}/^{204}\text{Pb}$ using TIMS; data processing	sample	7,900.-
310.2.19	Decomposition of silicate rock or biological material; Cd separation by anion exchange chromatography; determination of stable Cd isotopic composition ($\delta^{114}\text{Cd}$) and Cd content (isotopic dilution) using TIMS instrument; data processing	sample	5,800.-
310.2.20	Sm-Nd geochronology – isochron approach and high-precision Sm-Nd analyses (decomposition of silicate rocks or minerals; Sm and Nd separation using ion exchange chromatography, determination of Sm and Nd contents using isotopic dilution and TIMS and $^{143}\text{Nd}/^{144}\text{Nd}$ using TIMS; data processing)	sample	5,900.-
310.2.21	Re-Os geochronology of black shales – isochron approach (decomposition of C-rich silicate rocks using $\text{CrO}_3\text{-H}_2\text{SO}_4$; Re and Os separation using ion exchange chromatography and CHCl_3 , determination of Re and Os contents using isotopic dilution and HR-ICP-MS/TIMS and $^{187}\text{Os}/^{188}\text{Os}$ using TIMS; data processing)	1 point on isochron	8,900.-
310.2.22	Re-Os geochronology of molybdenite (sample decomposition, determinations of Re and ^{187}Os contents using N-TIMS, data processing); error on the determined age is in the range of 0.6–1.2%	sample	13,700.-



ICP-MS analyses (HR-ICP-MS Element 2)			
Solution trace element analyses			
310.3.1	Low mass resolution (Li, Be, Rb, Sr, Y, Cs, Ba, Zr, Hf, Nb, Ta, Pd, Ag, Cd, Sn, Sb, Te, Pt, Au, Tl, Pb, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Th, U)	sample	300–1,200.-
310.3.2	Middle/High mass resolution (Sc, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Ga, Ge, As, Se, P)	sample	400–1,200.-
Solution isotopic ratios analyses			
310.4.1	Pb: $^{206}\text{Pb}/^{207}\text{Pb}$, $^{208}\text{Pb}/^{206}\text{Pb}$ (precision <0.5 %)	sample	800.-
310.4.2	Re (determination of isotopic ratios for the concentration calculation using isotopic dilution technique with a precision of <0.2 %)	sample	800.-
310.4.3	Re, Ir, Ru, Pd, Pt (determination of isotopic ratios for the concentration calculation using isotopic dilution technique with a precision of <0.2%)	sample	2,400.-
310.4.4	U-Th geochronology of carbonates using ICP-MS , sample decomposition will be accomplished by external laboratory – ING PAN Warsaw, will be charged together with ICP-MS measuring in total	sample	10,900.-
Laser ablation ICP-MS analyses			
310.5.1	Laser ablation trace element ICP-MS analyses	hour	2,500.-
310.5.2	U-Pb zircon geochronology using laser ablation ICP-MS analyses	hour	2,500.-
High-precision isotopic analyses using TIMS (Thermo Triton Plus)			
310.6.1	$^{87}\text{Sr}/^{86}\text{Sr}$ isotopic analyses	sample	800.-
310.6.2	$^{143}\text{Nd}/^{144}\text{Nd}$ isotopic analyses	sample	1,370.-
310.6.3	$^{206}\text{Pb}/^{204}\text{Pb}$, $^{207}\text{Pb}/^{204}\text{Pb}$ and $^{208}\text{Pb}/^{204}\text{Pb}$ isotopic analyses	sample	1,370.-
310.6.3	$^{187}\text{Os}/^{188}\text{Os}$ isotopic analyses (N-TIMS technique)	sample	1,450.-

Fission track analysis (FTA) laboratory

Specifications for samples (price variations)/notes: The clients may deliver bulk rock samples and use the Laboratory of mineral separation (see 310.1.1 – 310.1.20), or already separated apatite grains. The details need to be consulted and agreed upon in advance with the laboratory staff. The price below does not include potential mineral separation.

Contact: Dagmar Kořínková, korinkova@gli.cas.cz, +420 233 087 216; Martin Svojtka, svojtka@gli.cas.cz, +420 233 087 242

FTA data can be effectively complemented by follow-up time from the Low-temperature (U-Th)/He (apatite, zircon) dating method using the Alphachron thermochronology instrument. This method is implemented by the Department of Neotectonics and Thermochronology at the Institute of Rock Structure and Mechanics of the Czech Academy of Sciences. The price of analyses and associated sample preparation must be consulted directly with the head of the laboratory: Erhan Gülyüz, gulyuz@irms.cas.cz, +420 266 009 325) or Ivana Kolesárová (kolesarova@irms.cas.cz, +420 266 009 322)

Code	Service / device	Unit	Price (CZK)
Fission track dating and modelling of time-temperature curves			
310.7	Preparation of polished sections from separated minerals (apatite); etching of samples and preparation for analysis, fission track analysis, age calculation using ICP-MS and modelling of results	sample	6,500.-

Field gamma-ray spectrometry

Specifications for samples (price variations)/notes: The client should be well prepared for fieldwork and should provide information needed for the evaluation of measurement difficulty and effectiveness prior to the onset of fieldwork, including the measurement interval, safety etc. (maps, photographic documentation of measured outcrops or strata where possible).

Contact: Leona Chadimová, chadimova@gli.cas.cz, +420 233 087 280

Code	Service / device	Unit	Price (CZK)
Field gamma-ray spectrometry			
310.8	Measurements on GR-320 Exploranium; RS-230 BGO Super-SPEC Georadis	day (including an operator)	8,400.-



Soil/sedimentological descriptions and analyses

Specifications for samples (price variations)/notes: Please provide bulk samples for grain size and pH analyses (fraction below 1.5 mm) in amounts of at least 20 g. Micromorphological analysis is performed either for supplied samples or supplied thin sections. However, an overall geoarchaeological processing of the site requires that the samples are taken directly on the spot, i.e., it is necessary to add the price related to sample collection plus the price for the production of the thin section. This price is based on the current price list of Czech and foreign thin sectioning laboratories and on the distance to the collection point. Reconnaissance of the terrain without further sampling is charged based on prior mutual agreement.

Contact: Lenka Lisá, lisa@gli.cas.cz, +420 233 087 230

Code	Service / device	Unit	Price (CZK)
	Gran size analyses and pH		
310.9.1	Basic grain size analysis using Cillas 2000 laser analyser	sample	360.-
310.9.2	Grain size analysis without carbonates	sample	360.-
310.9.3	Grain size analysis without organic matter	sample	360.-
310.9.4	pH	sample	100.-
	Micromorphology		
310.9.5	Micromorphological description and interpretation of small-size thin sections (including sampling and thin section preparation)	thin section	1,500.-
310.9.6	Micromorphological description of thin section of mammoth size (including sampling and thin section preparation)	thin section	3,000.-
310.9.7	pXRF analysis (Nitton device)	sample	200.-



Department of Paleomagnetism

Specifications for samples (price variations)/notes: Specifications for rock samples: samples must be acquired by the staff of the Department of Paleomagnetism, Institute of Geology, Czech Acad Sci, or by individuals trained by the staff. Travel expenses of the Department of Paleomagnetism staff are not included in the price list and will be calculated separately according to the sampling location. Samples of solid rocks for analyses must have one of the following shapes and dimensions: (1) a cube 2x2x2 cm in size or (2) a cylinder 2.5 cm in diameter and 2.1 cm in length. Samples of unconsolidated (loose) sediments/soils must be placed in a special non-magnetic plastic box with a volume of 6.7 cm³.

The samples must be clean, compact, and free of any leaking water/liquids.

Sample transport by train, underground, trolleybus, and/or tramway must be avoided.

Price of instrument usage for PhD students measuring their samples in the paleomagnetic lab will be calculated on an *ad hoc* basis depending on the duration and type of work and the degree of needed assistance by the trained staff of the Institute of Geology, Czech Acad Sci.

Contact: Lada Kouklikova, kouklikova@gli.cas.cz; Šimon Kdýr, kdyr@gli.cas.cz; +420 725 261 015, +420 773 071 208

Sample preparation for paleomagnetic and rock magnetic study

Code	Service/device	Unit	Price (CZK)
360.1.1	Sampling	unit*	*
360.1.2	Acquisition of oriented hand sample	sample	80.-
360.1.3	Acquisition of drilled oriented sample	sample	160.-
360.1.4	Acquisition of loose oriented sample	sample	80.-**
360.1.5	Mechanical preparation of a rock sample into cube samples (1)	sample cube	110.-
360.1.6	Mechanical preparation of a 2.5 cm diam. core sample into cylinder samples (2)	sample cylinder	30.-
360.1.7	Mechanical preparation of a rock sample into cylinder samples (2)	sample cylinder	90.-
360.1.8	Magnetic separation using the Wolbach method	sample	160.-

**unit price includes: direct person/day costs (daily allowances according to CZ law + accommodation – multiplied by the number of personnel involved in sampling) and costs of transport according to CZ law incl. car consumption and use per 1 km (car).*

***plus the price for a plastic box (subject to change).*

Paleomagnetic study

The table below shows prices for the first ten (pilot) samples; for additional samples 75% of the price will be charged.

Specification of complex analyses:

RM measurement during a thermal demagnetization – sample cutting, 17 RM steps, 16 TD steps, 17 k step.

RM measurement during alternating field demagnetization – sample cutting, 15 RM steps, 14 AF steps, 1 k step.

Code	Service/device	Unit	Price (CZK)
360.2.1	Remanent magnetization (RM) using the JR-5 or JR-6A Spinner Magnetometer	step	90.-
360.2.2	Remanent magnetization (RM) using the Superconducting Rock Magnetometer	step	180.-
360.2.3	Thermal demagnetization TD (MAVACS, MMTD80)	step	60.-
360.2.4	Alternating field demagnetization AF (LDA -5A)	step	30.-
360.2.5	Magnetic susceptibility <i>k</i> using KLF-3A	step	30.-
360.2.6	RM measurement during thermal demagnetization	analysis	2,650.-
360.2.7	RM measurement during alternating field demagnetization	analysis	1,750.-
360.2.8	Interpretation of paleomagnetic data and creation of graphical outputs	hour	750.-



Study of rock magnetic properties

The table shows prices for the first ten (pilot) samples, for additional samples 75 % of the price will be charged.

Specification of complex analyses:

Standard magnetomineralogical analysis – sample cutting, 36 RM steps, 24 DC field magnetization steps, 12 AF steps, dependence of magnetic susceptibility on high temperature (CS-3) and low temperature (CS-L).

Simplified magnetomineralogical analysis – sample cutting, 36 RM steps, 24 DC field magnetization steps, 12 AF steps, high temperature magnetic susceptibility dependence (CS-3)

Lowrie method 3 IRM acquisition steps – 17 RM steps, 16 TD steps, 17 k steps

Kruiver's IRM acquisition curve analysis – 24 RM steps, 24 DC field magnetization steps

Code	Service/device	Unit	Price (CZK)
360.3.1	Direct field magnetization	step	30.-
360.3.2	Alternating field demagnetization AF (LDA -5A)	step	30.-
360.3.3	Anhysteresis magnetization on LDA-5A/PAM1	step	30.-
360.3.4	Field-dependent magnetic susceptibility (MFK-1)	analysis	50.-
360.3.5	Frequency dependence of magnetic susceptibility (MFK-1)	analysis	50.-
360.3.6	Measurement and calculation of Königsberg Q parameter	analysis	110.-
360.3.7	Temperature dependence of magnetic susceptibility up to +700 °C (CS-3)	analysis	1,230.-
360.3.8	Temperature dependence of magnetic susceptibility in range of -190 – 0 °C (CS-L)	analysis	1,230.-
360.3.9	Anisotropy of magnetic susceptibility (KLY-4A, MFK-1)	analysis	60.-
360.3.10	Anisotropy of anhysteretic remanent magnetization (LDA5, PAM1, JR6)	analysis	880.-
360.3.11	Standard magnetomineralogical analysis	analysis	3,630.-
360.3.12	Simplified magnetomineralogical analysis	analysis	2,750.-
360.3.13	Lowrie method	analysis	2,750.-
360.3.14	Acquisition of IRM including Kruiver analysis	analysis	1,880.-
360.3.15	Interpretation of magnetomineralogical data and creating graphic outputs	hour	750.-

Other magnetic methods

Notes: Inst Geol staff members can borrow the SM-30 magnetic susceptibility meter free of charge.

Code	Service/device	Unit	Price (CZK)
360.4.1	Vacuating to 1×10^{-6} mbar (Pfeifer HiCube 80)	process*	12,000.-
360.4.2	Measurement of magnetic field by Fluxgate magnetometer (Applied Physics FM 520 and/or C3MAG), measurement with an operator not including travel expenses	hour	750.-
360.4.3	Measurement of magnetic susceptibility in the field (SM30, KT-10) measurement with an operator not including travel expenses	hour	370.-

* 4 days-long lasting process



Information Centre and Library

Specifications for samples (price variations)/notes: The prices can change depending on current prices in co-operating libraries.

Contact: library@gli.cas.cz ; +420 233 087 272, +420 233 087 273

Service / method	Unit	Price (CZK)
Copying in the study room	1 item	2.-
Interlibrary reprographic service within the CR via VPK	1 page	2.-
Interlibrary reprographic service within the CR as an electronic delivery of a printed copy via VPK – a scan of a printed document (for libraries only)	1 page	2.- + copyright fee*
Interlibrary reprographic service within the CR as an electronic delivery of a printed copy via VPK – a copy from licensed online databases (for libraries only)	up to 7 pages from 8 pages	5.- / page 15.- / article
International interlibrary reprographic service (basal price – subject to change, specified by the requested library)	every 10 pages	80.-
International interlibrary reprographic service (higher price – subject to change, specified by the requested library)	1 article	350.-
International interlibrary loan service (basal price)	1 volume	250.-
International interlibrary loan service (higher price)	1 volume	500.-

*Copyright fee ranges between CZK 12.10–90.75 (including VAT) depending on the number of pages

VPK = Virtual Polytechnical Library (a joint project of some Czech libraries, Institute of Geology is a part of this project) – for further information see <https://www.techlib.cz/en/2879-virtual-polytechnical-library-vpk>

Service / method	Ring diameter (mm)	Price (CZK) (internal / external)
Ring-binding machine OPERA 25 (format A4)	6	9,- / 15,-
	8	9,- / 16,-
	10	11,- / 18,-
	12,5	11,- / 19,-
	14	11,- / 20,-
	16	12,- / 22,-
	19	13,- / 24,-
	22	14,- / 26,-
	25	15,- / 28,-
	32	21,- / 30,-
	38	26,- / 35,-
	45	33,- / 42,-
51	38,- / 47,-	

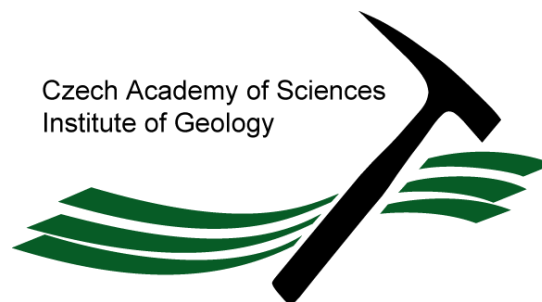
Service / method	Type	Price (CZK) (internal / external)
Thermo-binding machine UniBinder 120 (format A4)	1; 2; 3; 5; 7	31,- / 38,-
	9; 12	32,- / 39,-
	15	36,- / 45,-
	18	39,- / 48,-
	21	43,- / 53,-

Expertises

Employees of the Institute of Geology may, upon request and under a contract, elaborate a professional expertise, an expert opinion, report or other expert work in scientific fields covered by the individual departments of the Institute of Geology. In reports not requiring analytical data or instrumental measurements, the time spent on such report is remunerated by CZK 1,320.- / hour.



Thank you for your interest to co-operate



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Compiled by M. Filippi (filippi@gli.cas.cz) based on information provided by heads of departments and analytical workers.

English revised by J. Adamovič

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<https://www.gli.cas.cz/cs/ceniky>

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