



INFRALEUNA<sup>®</sup>



# Analytic laboratory services

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## Analytic laboratory services

The department analytic laboratory services of InfraLeuna is:

a testing laboratory accredited by the DAkkS (Deutsche Akkreditierungsstelle - German Accreditation Body) according to DIN EN ISO/IEC 17025. The accreditation is for, as mentioned in the certificate of accreditation, the listed procedures;

a listed analytical investigation body for drinking water pursuant to § 15 par. 4 sentence 1 of the drinking water ordinance 2001 for physical, physico-chemical, chemical and microbiological analysis drinking water;

certified according to DIN EN ISO 9001, DIN EN 14001 and SCC-checklist.

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### 1. Competence

We are your competent contact person concerning analytical problems of the water, waste water, product, fouling and waste analysis. Due to our immediate vicinity to your plants and many years of experience in analytical monitoring of industrial plants for water treatment, waste water treatment, power generation and of closed cooling systems you can benefit of many advantages.

Our range of services comprises nearly all standard methods of the water and waste water, the inorganic and organic trace analysis and the microbiology. Appropriate analysis methods can be chosen targeted for the solution of your problems. The results are transferred to you in requested form after short processing time. Our modern laboratory and information management system offers the possibility to prepare the analysis results in a test report or in table form and transmit them via email or fax.

Furthermore the undertaking of complex laboratory analytical monitoring tasks for the process management of your plants ranging from the sampling to the daily result transmission is part of our range of services.

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## Analytic laboratory services

### 2. Main activities

Analysis accompanying processes and analytical monitoring of quality parameter:

Industrial water treatment:

- fresh water and industrial water treatment,
- condensate and feed water treatment,
- e.g. analytical monitoring of decarbonization, coagulation, reverse osmosis, desalination, ion exchanger;

Power generation plants and steam generators:

- monitoring of water-steam circulations according to statutory regulations (VGB and VdTÜV),
- ultrapure water analysis,
- flue gas desulphurization, REA-plaster (according to VGB-M 701);

Cooling circuits:

- cooling water treatment, cooling water conditioning,
- microbiological testing in cooling circuits;

Waste water treatment:

- waste water declaration analysis,
- control of waste water discharges according to statutory regulations,
- supervision of biological waste water treatment plants;

Drinking water analysis, hot water systems (chemically, physical-chemically, microbiologically):

- drinking water treatment, distribution networks,
- installation of in-house water systems,
- water pipe releases;

Ground water analysis:

- ground water purification plant,
- ground water gauge networks,
- landfill leachates;

Check of measuring devices by means of on-site laboratory testing and control testing with portable testing facilities;

Development of customer-specific solutions and standards for measuring devices;

Waste and residue analysis:

- declaration analysis relating to the landfill (LAGA-regulations, TA Abfall),
- declaration analysis for the reassembly at the chemical site Leuna;

Composition of foulings in industrial plants.

### 3. Services offered

On over 1,200 sqm laboratory area with over 20 qualified, permanent employees in immediate customer vicinity we give the warranty for a reliable, competent and long-standing secured cooperation on a technically advanced level. Due to our modern equipment technology we can offer you a comprehensive parameter spectrum of various sample matrices.

## Analytic laboratory services

### Sampling:

- drinking water
- waste water
- ground water
- waste, building rubble;

### Element determination:

- elemental analysis (C, S) ,
- determination of elements with the help of atomic spectroscopy (e.g. Ca, Mg, Na, K, Ba, Sr, Pb, Cd, Cr, Cu, Ni, Zn, As, Se, Sb, Ti, V, Mn, Mo, Pt, Fe, Co, Pd, Ag, Al, Tl, Sn, P, Hg) ranging from the ultra trace range to the main components,
- semiquantitative overview analysis,
- different sample pretreatment and pulping technologies;

### Samples matrices:

- water (drinking water, ground water, cooling water, deionized water, permeate, feed water, ultrapure water, steam condensate, etc.),
- waste water
- products (e.g. acids, salts, hydrogen peroxide, methanol, gypsum, calcium carbonate, polymers),
- waste, building rubble,
- foulings
- sludge,
- fuels, oil and refinery products.

## 4. Parameter

### 4.1. Parameter of water and waste water analysis

pH-value	ammonium
electrical conductivity	chloride
temperature	nitrate
redox potential	sulfate
oxygen	nitrite
coloration	bromate
clouding	sulfide
hardness (total- carbonate- and noncarbonate hardness)	sulfite
acid and base capacity	fluoride
permanganate index	anionic surfactants ((MBAS)
particle size distribution	cyanide easily purgeable
phenol index	silicic acid
carbon compounds (TOC, DOC, TIC)	iron (total, dissolved, Fe II)
calcite saturation according to DEV C10-R3	hydrazine

## Analytic laboratory services

AOX (absorbable organic halogen)

nitrogen compounds (TNB)

biochemical oxygen demand (5 days)

chemical oxygen demand

nitrification inhibition test

depletion test

biodegradability (Zahn-Wellens-test)

total phosphor

orthophosphate

free chlorine

lipophilic substances

filtratable solids

filtrate dry residue

settleable solids

suspended solids

### 4.2. Organic parameter

BTEXC (benzene, toluene, ethyl benzene, xylene, cumene)

LHKW (lightly volatile halogenated hydrocarbons)

MTBE

Methanol

Carbonic acids (C1 – C6)

PAK (polycyclic aromatic hydrocarbon)

GC-MS-overview analysis (qualitative screening)

Hydrocarbon index

IR-spectra measurement

### 4.3. Microbiological tests

Pipe release

Monitoring of cooling circuits (Colony number, legionella)

Colony number

Escherichia coli, coli form germs

Enterococci

Pseudomonas aeruginosa

Legionella

Yeasts, fungus

#### **4.4. Further analysis parameters**

Dry residue

Ignition loss, ignition residue

Sludge volume index

Water-soluble part

Determination out of the eluate (DIN 38414 S4)

Determination out of the aqua regia extract (DIN 38414 S7)

Microscopical analysis of activated sludge