

Soils | Biogas | Sludges | Dioxine | Biomass | Sample Preparation | Nitrit | Phenols | Nitrogen

# Solutions for the environmental laboratory



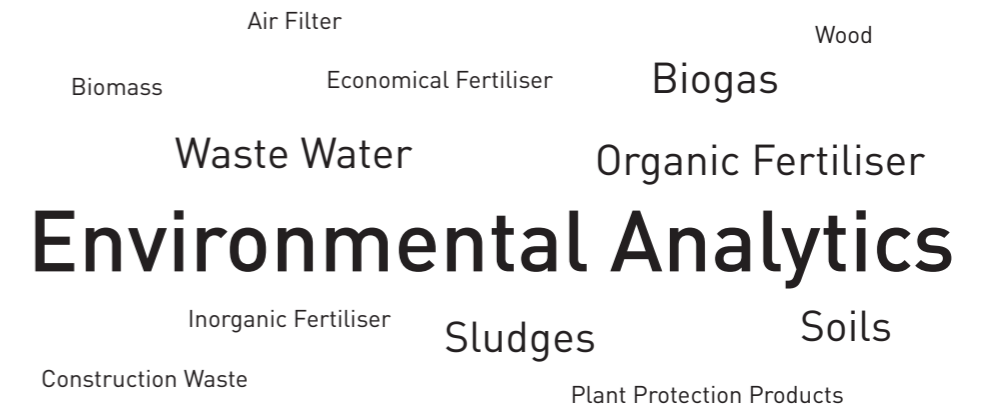
STEAM DISTILLATION | KJELDAHL | DUMAS | SMA | COD  
EXTRACTION | RANDALL | TWISSELMANN | SOXHLET

# Strong partner in environmental laboratories

When it comes to analysing environmental pollutants and chemicals, every laboratory has to comply with very special regulations and norms. It is of great importance that the analytical results meet the high quality requirements from a wide range of areas.

At C. Gerhardt, we are familiar with the daily routine of environmental laboratories. With our analytical systems, you not only get reliable products, but also expert consultation from our application specialists. On our website [www.gerhardt.de](http://www.gerhardt.de) you will find detailed information about our analysis systems and their diverse applications in a wide range of industries.

**We will be happy to advise you personally - please feel free to contact us: [info@gerhardt.de](mailto:info@gerhardt.de).**



## SOX THERM | CLASSIC SOXHLET-APPARATUS

Solid-liquid extraction



- + Safe, automated and fast sample preparation and analysis
- + Handles sample weights up to 50 g, different thimble sizes available
- + Environmentally friendly due to reduced solvent usage

### Applications

- Extraction of:
  - Lipophilic substances
  - Dioxines: halogenated dibenzodioxins and dibenzofurans (for example PCDDs and PCDFs)
  - Halogenated and non-halogenated aromatic and aliphatic hydrocarbons
  - EOX, PAKs, PCBs, ...
  - Plant protection products und pesticides
  - Per- und polyfluorinated alkyl compounds (PFAS, PFC) from soils, contaminated sites, sludge, air filters, etc.
  - Plasticisers from PVC and other plastics consumer goods as well as undesirable and prohibited substances in food and in animal feeds
- etc.

## CSB AND TRACE METAL DIGESTION UNIT

Special Digestion



- + Rapid and automated analysis
- + Large sample quantities
- + Reproducible digestion conditions
- + Large number of samples on a small area

### Applications

- Chemical Oxygen Demand
- Aqua regia digestion for trace metal determination etc.

## CYANID APPARATUS | VAPODEST

Decomposition instrument and steam distillation



### Applications

- Free and bounded cyanide
- Total cyanide
- Volatile organic acids
- Phenol index
- Total formaldehyd / formaldehyd-content (in emulsion paints-wood products, etc.)
- etc.

## KJELDATHERM | TURBOTHERM | VAPODEST

Acid digestion, Kjeldahl und Steam distillation



- + Rapid and automatable analysis
- + Glass varieties from 100ml to 1200ml
- + Soft start during distillation to avoid strong reactions in the sample tube
- + VAPODEST is also available as acid resistant system
- + Traceability on different user levels

### Applications

- Mineral bound nitrogen
- N-content of manure
- Ammonium, nitrate, urea and cyanamides containing nitrogen ...
- Nitrate determination with alloy according to Devarda
- Nmin-content
- Ammonia content in soils, sludges, water and waste water
- etc.

## LABOSHAKE

Liquid-liquid extraction and laboratory shakers with separatory funnel



- + Robust laboratory shaker with a maximum load capacity of 30 kg
- + Accessories for different containers, upgradable to up to 3 levels
- + Powerful 50mm Amplitude to up to 200 min<sup>-1</sup>

### Applications

- Preparation of eluates (e.g. calcium chloride solution)
- Sample homogenisation
- Liquid-liquid extraction of e.g. phenols

## N-Realyzer

Automatic N-determination according to Dumas



- + Patent pending autosampler design
- + Intuitive software
- + Rapid and precise reference results
- + Low and predictable operating costs
- + Numerous applications: Liquid, pasty, solid samples

### Applications

- Total bounded nitrogen
- Nitrogen in soils
- Nitrogen/protein in plant materials and fertilisers
- etc.



## MEETING HIGH DEMANDS ON ANALYTICS:

Strict environmental regulations and requirements from national and international norms and guidelines place high demands on analytics. In environmental analysis, a wide variety of matrices and parameters must be analysed. C. Gerhardt's analytical systems cover a wide range of analytical possibilities, here are only a few examples:

Parameter	Matrix	Gerhardt apparatus
Low volatile lipophilic substances	water, wastewater and sludge analysis	SOXTHERM or Soxhlet
Nitrogen as nitric, ammoniacal, urea and cyanamide nitrogen	fertiliser	KJELDATHERM / VAPODEST
Determination of total nitrogen in fertilisers	fertiliser	KJELDATHERM / VAPODEST
Total nitrogen content	Sludge, treated biowaste and soil	DUMATHERM
Nitrogen content	Soil improvers and growing media	DUMATHERM
Total cyanide German standard methods D13	water, wastewater and sludge analysis	TURBOTHERM TTs CYANID / VAPODEST
Determination of nitric and ammoniacal nitrogen according to Devarda	water, wastewater and sludge analysis	KJELDATHERM / VAPODEST
Determination of (COD) German standard methods H41	water and wastewater analysis	KJELDATHERM
Determination of the phenol index German standard methods H16	water, wastewater and sludge analysis	VAPODEST
Collection of Measurement Methods for Biogas	In accordance with the VDLUFA methods	KJELDATHERM / VAPODEST / HYDROTHERM / SOXTHERM / DUMATHERM
Digestion for subsequent determination of aqua regia soluble portion of elements in waste, LAGA	waste, soil, sludge, organic waste, sediments	KJELDATHERM
Determination of PAH	soils/waste/sewage sludge	SOXTHERM
Determination of EOX German standard methods S 17	sludge or sediment sample	SOXTHERM or Soxhlet
Determination of PCB	soils, sewage sludge, solid waste	SOXTHERM or Soxhlet



## APPLICATION SERVICE

Our laboratory staff is regularly trained and is always available for specific questions. If desired, we can optimise your applications or create an application specifically for you.

- + On-site service
- + Evaluation of your samples in our application laboratory
- + Applicative Support (Webinars / Trainings / Online-Support)
- + Consultation / Installation and Training
- + Aftersales Service / Customer Service

Have you heard of our webinars?



## STRONG PARTNER

We are global leaders in the automation of reference analysis. We stand for the development, production and global distribution of highly efficient, precise and reliable analytical systems.

Our specialties are automatic systems for

- + Nitrogen analysis according to Kjeldahl
- + Nitrogen analysis according to Dumas
- + Determination of fat content (hydrolysis and extraction)
- + Analysis of plant fibres (crude fibre, ADF, NDF)



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