

# WATER AND SOIL LABORATORY

## DESCRIPTION

IMDEA Water labs joined the Laboratory and Infrastructure Network of the Community of Madrid in 2009, with reference number 267. The labs perform several physico-chemical, microbiological and chromatographic analyses associated with quality control of water bodies and soils.

The IMDEA laboratories are currently engaged in the application process for formal acknowledgement of technical competence as a laboratory for water analysis by ENAC (National Accreditation Entity) accreditation, to ensure confidence in test results:

- Accreditation ISO 17025 EN

For the determination of the following parameters: pH, conductivity, suspended solids, DQO, DBO5, total phosphorus and TKN (Total Kjeldahl Nitrogen).

## IMDEA WATER SOLUTIONS

The laboratory facilities are equipped with different types of analytical instrumentation to enable several different types of analysis:

- Analysis of physico-chemical parameters for controlling water quality (pH, conductivity, DBO5, DQO, organic matter, alkalinity, anions and cations...)
- Analysis of organic acids, such as: succinic, acetic, fumaric, lactic and malic acid in treated waters by high-performance liquid chromatography coupled with visible UV detection (HPLC-UV)
- Analysis of microcystins in different water matrices and 1,4 dioxane in reservoir waters using LC/MSMS technique.
- Analysis of trihalomethanes (THMs) in drinking water by GC/MSMS.
- Analysing metals and other elements present in samples of surface water and wastewater by ICP-MS.
- Analysis of priority substances in the field of water policy based on Directive 2013/39/EU, using LC/MSMS y CG/MSMS techniques.
- Screening for approximately 400 emerging contaminant compounds (drug residues, disinfectants, pesticides, PFOs, etc.) in inland water bodies and wastewaters, using high-resolution LC-QTOF and CGxCG-TOF techniques.
- Soil analysis (moisture, texture, exchangeable bases, metals,...).
- Microbiological water analysis for E. coli, total coliforms, etc.

# scientific & technical offer

## EQUIPMENT

The laboratories are in a constant process of adaptation to internal and external needs, to provide a response to requests from researchers and clients and furnish them with reliable results in terms of soil and water analyses.

The facilities are composed of specific units for:

Laboratory	Equipment	
Water	<ul style="list-style-type: none"><li>• Particle counter</li><li>• Visible UV spectrophotometer</li><li>• Total Organic Carbon (TOC) Analyser</li></ul>	
Soils	<ul style="list-style-type: none"><li>• Pressure plates</li><li>• Microwave/Oven for digestion and extraction</li></ul>	
Chromatography	<ul style="list-style-type: none"><li>• Liquid Chromatography coupled with Visible Ultraviolet (HPLC-UV)</li><li>• Ion Chromatography for analysis of cations and anions present in water</li></ul>	
Mass spectrometry (MS)	<ul style="list-style-type: none"><li>• Gas x Gases/MS (CGxCG/TOF)</li><li>• Gas Chromatography/ Triple Quadrupole (CG/MS/ MS(QqQ))</li><li>• Liquid Chromatography/Triple TOF (LC-QTOF) equipment</li><li>• Liquid Chromatography/MS (LC-TOF) equipment</li><li>• Liquid Chromatography linked with triple quadrupole (LC/MSMS) equipment</li></ul>	
Inductively Coupled Plasma Mass Spectrometry	<ul style="list-style-type: none"><li>• Inductively Coupled Plasma Mass Spectrometry equipment with optional coupling of separation techniques such as High Performance Liquid Chromatography (HPLC).</li></ul>	

## IMPLEMENTATION SECTOR

- Chemical industry
- Environment
- Agri-food sector
- Environmental health
- All kinds of entities needing quality control in waters, soils...

## TECHNOLOGY KEYWORDS

Chromatography, mass spectrometry, physico-chemical parameters, inductive coupling spectroscopy, screening, low concentration levels (ng/L), waters, soils.

## CONTACT PERSON

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