

# Trace<sub>2</sub>

# Metalysers<sup>®</sup> HM1000

PORTABLE HEAVY METALS ANALYSER



**Heavy metals analysis in the field to ppb levels**

Simple, fast, effective testing for  
Arsenic, Cadmium, Copper, Lead, Mercury and Zinc

# METALYSER HM1000

Contamination of our water resources by toxic heavy metals is increasingly becoming a problem the world over. Widespread industrial and urban pollution is responsible for introducing these heavy metals into the environment. This problem is particularly acute in the developing world where unchecked industrial growth, lack of monitoring facilities and failure to enforce environmental regulations only serves to add to the severity of the situation.

The Metalyser HM1000 has been designed specifically to allow easier, cost-effective monitoring of the heavy metals most commonly associated with health and environmental problems.

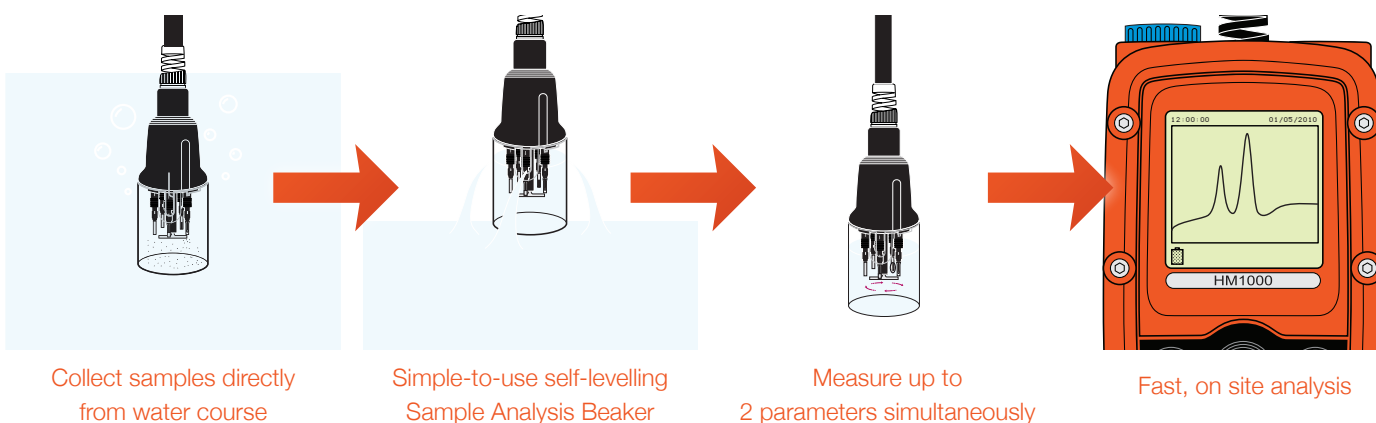
Developed and manufactured solely in the UK, the Metalyser offers a breakthrough in terms of a simple-to-use field instrument that offers high levels of accuracy at an attractive price.

Analysis of heavy metals in water has traditionally proved difficult in the field. By combining the proven method of Anodic Stripping Voltammetry (ASV) along with an innovative sonde design and a simple buffer delivery system, Trace<sub>2</sub>O have developed an instrument that can finally deliver reproducible results on site.

The design of the Metalyser allows the addition of future parameters without the need to upgrade the instrument. New methods for further metals are currently under development.



## SIMPLE ANALYSIS





## BENEFITS

- » Field based detection of heavy metals in water down to ppb levels
- » Arsenic, Cadmium, Copper, Lead, Mercury and Zinc
- » Simple to use
- » Rapid results on site
- » No need for costly laboratory based analysis
- » Significant cost savings, against existing technologies
- » No complicated sample preparation
- » Minimal use of consumables
- » Measurements taken directly at water source
- » No PC required

## FEATURES

- » Robust and waterproof design to IP67 standard
- » User removable electrodes
- » Internal datalogger with memory for 1000 results
- » USB connectivity
- » Windows based analysis software
- » LCD graphical display
- » Joystick cursor control
- » Multiple power options - rechargeable battery / mains AC / vehicle cigarette lighter socket
- » Integral self-levelling Sample Analysis Beaker (SAB)
- » Software expandable for further parameters

Patents applied for.

## SONDE

The uniquely designed submersible sonde utilises the familiar three electrode system which comprises a reference, counter, and working electrode.

In addition, the sonde incorporates a stirrer, temperature probe and space for up to three working electrodes. This allows multi-parameter measurement within a single unit, without the use of a computer.

The intelligent unit (capable of storing 1000 results) will select the electrode accordingly for the metal of interest.

- Maintenance-free electrodes »
- Push-fit removable electrodes »
- Integral temperature sensing »
- Up to 3 working electrodes in one sonde »



# SPECIFICATION

<b>Operation</b>	Analytical principal: Anodic & Cathodic stripping voltammetry using disc working electrodes Parameters measured: Arsenic, Cadmium, Copper, Lead, Mercury, Zinc Temperature range: -20°C to +70°C
<b>Data</b>	Results obtained in less than 5 minutes Internal memory: 1000 data sets with facility to enter sample number, time and date Transfer via USB to PC New application methods can be uploaded to the unit via the USB port
<b>User Interface</b>	LCD full graphics backlit display: 128mm x 128mm Joystick cursor control Menu driven software
<b>Power</b>	Rechargeable battery providing in excess of 50 tests per charge Alternative power supply via mains adapter or vehicle cigarette lighter
<b>Approvals</b>	Waterproof to IP67 CE mark Anodic Stripping Voltammetry (ASV) - US EPA 7063 & US EPA 7472
<b>Kit</b>	Dimensions: 470mm (L) x 370mm (W) x 170mm (D) Net weight: 9kg

## LIMITS OF DETECTION (FRESH WATER)

Parameter	Lower Limit (ppb)*	Upper Limit (ppb)	WHO Guideline Value (ppb)
Arsenic (As)	5	500	< 10.0
Cadmium (Cd)	3	500	< 3.0
Copper (Cu)	5	500	< 2000.0
Lead (Pb)	5	500	< 10.0
Mercury (Hg)	5	500	<6.0
Zinc (Zn)	5	500	< 4000.0

\* Lower limits achievable using the handheld at 60 seconds deposition  
Increased accuracy can be achieved by setting the deposition time to 120 seconds

Variability at 20ppb ±5% with Metaware, ±7.5% with handheld  
Accuracy dependent on element measured, sample matrix and type

### Ordering Information

Metalyser HM1000 – the complete kit comprises:

- » Metalyser Instrument
- » Sonde assembly complete with temperature sensor, stirrer, SAB and full set of electrodes; x2 Working, Reference & Counter
- » Standards and Conditioning solutions
- » USB lead, mains and vehicle cigarette lighter adapters
- » Micro-pipette
- » Cable clamp
- » Consumable kit – includes beakers, rinse bottle and pipette tips
- » Protective hard-shell carry case
- » Buffers to perform 50 tests for each metal

