PRODUCT DESCRIPTION

This product is a one-shot disposable electrode. Designed to give an excellent response for heavy metal detection, for use in stripping voltammetry. Ideal for the environmental water testing sector.

The electrode is provided on a substrate containing 6 electrodes. The substrate can be cut easily using scissors. The substrate used allows the electrode to be “self-supporting” and easy to use when submerging the working area in solutions.

PRODUCT DETAILS

**Working Electrode**
C2130610D1—It contains a bismuth compound and gives excellent response for heavy metal detection such as lead, zinc and cadmium.

**Counter Electrode**
C2030519P4—It gives excellent electrochemical performance with good reversibility.

**Reference Electrode**
C2130809D5—Silver to silver chloride (60/40 ratio) highly conductive reference electrode.

**Dielectric Layer**
D2070423P5—A protective layer for the electrode track. Resistant to attack from THF, Acetone, DMF, DMAC and MEK

**Dimensions**
Substrate
Valox, 18 x 25 x 0.5 mm

Electrode
Pitch of individual electrodes 3.8 mm
Working area—diameter 3 mm

HANDLING

Keep product in packaging, away from high humidity and direct sunlight. Always wear gloves when handling and avoid contact with the working area of the electrode.

ELECTROCHEMICAL BEHAVIOUR

Square wave voltammetry with deposition potential of –1.4 volts for 180 seconds were found to give best results for lead and zinc. Sweep potential can range from –1.4V to 0.4V. Further optimisation required for additional heavy metals.

Square wave voltammograms obtained with 25 and 100 ppb of Pb (II) and Zn (II) in acetate buffer 0.1 M, pH 4.5. (E_{dep} = -1.4 V, t_{dep} = 180 s)

Calibration curve obtained with 80 µL of Pb (II) solutions ranged from 1 to 50 ppb (r² = 0.994). In all cases n = 3.

Calibration curve obtained with 80 µL of Zn (II) solutions ranged from 1 to 50 ppb (r² = 0.996). In all cases n = 3.

Issue 2, August 2014